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Nagaland Beekeeping & Honey Mission(NBHM)

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A realistic goal should be set while planning a beekeeping project, because a small manageable project which succeeds is more meaningful than a large unmanageable one that fails. A beekeeper having fewer but well managed colonies are better profited than having many yet poorly managed colonies.

(NBHM Notes pg 5-6)



With great pleasure we bring out yet another issue of this newsletter, even though it is our endeavor for timely publication of the Api News, it is apologetically delayed due to various reasons. But we believe that 'it's better late than never', as we know that our dear readers have waited eagerly for news and stories about the beekeepers and the mission's activities. It is our hope that our esteemed readers have absorbed themselves into the various nuances of beekeeping and we believe that you have gained some useful insights through our articles and information disseminated through this newsletter over the years.

This is a good time to inform our readers that, there has been a change of guard at NBHM with the appointment of a new Chairman and a new Team Leader by the Government of Nagaland. We are indeed happy to have Mr Pusazo Luruo as our Chairman since December 2015. He is also presently the Vice-President of the Nagaland People's Front. It is our good fortune that he has pioneered the beekeeping development in the State. He is someone who has long years of experience as an ardent beekeeper and a strong proponent of honeybees and has contributed tremendously towards the beekeeping sector of the State. Hailing from Phek District, he rears bees in his District with much aplomb, and is all out to support, and take the mission to a higher level in the days ahead. Also at the helm of affairs, is our new Team Leader, Mr T. Ao (IAS) & Secretary to the Government of Nagaland. He has taken upon the mantle to bring about new ideas and visions to take carry forward the mission's goals and objectives with great sincerity and admirable leadership qualities. Since joining the mission in January 2016, he has taken matters in his stride with his no nonsense and result oriented initiatives.

We are hopeful that under their able leadership and guidance, NBHM will take off in the right direction and achieve more milestones in the near future.

In the Api Notes section, articles contributed by Team members highlight some perspectives and insights on crucial issues surrounding beekeeping and its success. Issues on using the right type of bee hives and the importance of introducing beekeeping in the school curriculum are featured in this issue. Also a narrative describing a honeybee's life with a dash of humor, is intended to capture the reader's imagination. Success stories of beekeepers and Api villages from various locations and innovative technologies devised by our beekeepers is also covered in the newsletter.

In the news and events section, the readers will come across many events that have occurred and made the mission richer in terms of valuable lessons learned. Some important decisions taken at the highest level for the benefit of the beekeeping and honey sector in the State is highlighted in this section, while our experiences gained through participation at various events and training programs adds up to the treasured moments shared with our appreciated partners and stakeholders.

Its monsoon season and beekeeping activity will be at a lull in many places, as per the beekeeping season this is the dearth period for the bees with scanty flowering, therefore these is the time when extra care has to be given to the honeybees by all beekeepers; hives needs to be checked for wax moth infestations and old blackened combs removed, sheltered from the excessive rains and hive entrance reduced to avoid any chances of attack by predators and weak colonies needs to be protected of robbing colonies. Managing bee colonies is easy, but beekeepers knowledge on 'how and when' depending on the season comes in handy and the application of the right knowledge at the right time, distinguishes a good beekeeper from a careless beekeeper. Let us try to be an all-weather beekeeper and make whole year long our season in the sun!

Chubanungla Shilu
Editorial Team Member,
Api News

BENEFITS OF Integrating basic beekeeping course IN SCHOOL CURRICULUM

Deventhong Team Member, NBHM

The honeybee is a marvel of nature and are incredibly important for our ecosystem. About a half-inch long and with a lifespan of four to six weeks, they are nonetheless a staple of our lives.

Mankind has been so interested in beekeeping over the centuries, the sweetness of honey being its main motivators. After all, for many years and long before cane sugar, honey was the primary sweetener in use. It's no wonder that honey remains the principal draw for many beekeepers. But the sweet reward of beekeeping extend beyond honey and its by-products. For a long time, agriculture has recognized the value of pollination by bees. Without the bees' help, many commercial crops would suffer serious consequences. It is estimated that 1/3rd of the food we eat is pollination dependent and bees are the most efficient pollinators on the planet. They are essential to the pollination of 80% of the agricultural crops. Without the honey bee's services, more than a third of the fruits and vegetables that humans consume would be lost.

In today's fast developing world, the value of keeping bees thus goes beyond the obvious. Millions of colonies of wild honey

bees have been wiped out by urbanization, agricultural practices, deforestation and pesticides, devastating the wild honey bee population. Our activities are thus destroying the diversity of all wildlife, and having an effect on our own food supply. Clearly a balance between the bio-diversity of natural environments and a system of sustainable agriculture is needed. Just as much as bees have a role in ensuring the survival of humanity, we also have roles in ensuring their survival. This way, we can ensure that the symbiotic relationship we have with bees will endure for many more generations.

It is thus clear that the conservation of bees and other pollinators is an urgent issue. Introducing basic beekeeping course in schools to educate students on the importance and role of bees and encouraging them to take part in bees' preservation will go a long way in making our planet a better place to live and also help secure our food supply. Inspiring school children to love bees and nature, is not only life enriching for the child, it is a great way to help ensure the environment will be protected for future generations. Studying bees also adds significantly to the wider education of pupils. For example:-

1. Beekeeping course will encourage and inspire students to take up beekeeping as vocational activity and a profitable enterprise.

2. Beekeeping course will add significantly to the wider education of the students. For example, learning about the bees and its social structure can benefit/improve student's behavioral areas-such as love, care, patience and respect for our environment and all living things.

3. The learning opportunities provided by beekeeping are endless. Apart from the above mentioned benefits, students can discover new aspects of:

Biology: learn more about insect biology.

Agriculture: learn how honey is created and how plant yields are increased through pollination.

Ecology: learn about the relationships between living organisms and the natural world.

Environmental Studies-learn how the environment is affected by the positive and negative choices we make.

Culinary and Nutrition Studies: learn the nutritional benefits of honey and how to incorporate it into cooking

The benefits of integrating a basic beekeeping course in school curriculum can thus be astounding. It will not only educate the children about how crucial bees are for us but it will also help raise a new generation of beekeepers.

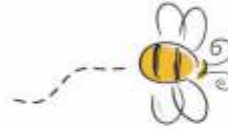


THE LIFE & ADVENTURES OF A WORKER BEE

An attempt to be the voice of a busy worker bee, sharing her humble yet extraordinary existence to a human reader.



Chubanungla Shilu Team member, NBHM



Hello Human. Have you ever wondered what it is like to be a honey bee? Let me take you momentarily out of your stressful human existence and introduce you into my world. So that you get a glimpse of the life and adventures of a honey bee. I am not just another honeybee, I am a worker bee and my gender is female. I was destined to be a female worker bee even before I was born. My mother the queen bee determined my gender by laying a fertilized egg out of which I metamorphosed into an adult worker bee that I am today.

But did you know that in my world, the female bees are the vital work force that sustains the bee colony? Hence I am not just a female honeybee but classified as the worker bee. I call the bee hive my home. Like all social insects I live in a colony, we cannot afford to live as isolated and solitary insects, because we honeybees believe in the dynamics of leading a community based and well-structured living with high standard of work ethics and systematic division of labor. I was told you humans often study the colony structure of honey bees and get some valuable lessons from our hard working lives. It makes me swell with great pride to know that you humans often try to emulate us! Let me mention that, the bee hive is often considered as the most efficient factory for the clock-wise precision in carrying out our daily duties.

In my colony we have our queen bee, worker bees and drones. Inside my home you will discover an army of worker bees who are all my sisters, numbering up to a few thousands. All of us were born out of the same queen bee, our mother bee. Our colony also rears a few hundred male bees, which you humans refer to as drones. They are developed from the unfertilized eggs laid by our mother bee. I will dwell on my brother drones at length a little later, but first let me inform you that inside my home, we all do our assigned duties with great diligence and we are continuously working day in a day out, just so that our short stay in this beautiful world is productive and worth living.

My mother the queen bee, is no doubt the supreme commander of my colony. She is selected from amongst a three day old bee larva and reared in a specially constructed queen cell and fed with a special diet of royal jelly by the worker bees, referred to as the bee milk. We adore and serve her with all our might. She controls us with her special pheromones, with which we are all smeared and through her predominant pheromone we can easily differentiate our colony from other honeybee colonies. Without her we go into a state of emergency. We feel doomed without our mother queen, so sometimes we have to pool in our resources to construct emergency queen cells, just so that our colony is not doomed to a state of queenless colony. We respect our mother

so much that me and my sisters and brothers surround her and offer protective coverage for her, whenever you humans open our home for inspection. I and my sister worker-bees feed her with sweet nectar and pollen grains, just so that she remains healthy and continues to lay large number of eggs and make our colony stronger day by day. More egg-laying means more work-force.

I am called a worker bee, and this comes with a heavy set of responsibilities and duties. My chores inside the hive includes, caring for and feeding the young growing larva, feeding my brother drones and our mother queen. I am also assigned to do the cleaning job inside the hive. I have to ensure that the new combs are constructed and damaged combs are repaired. Are you aware that the bee combs are considered as our granary where we store our food loads of nectar and pollen? It is also used for egg-laying, and for rearing of brood. I also make sure that sufficient water is collected and stored inside the combs, both for our consumption and for cooling the temperatures on hot sunny days. Just like you humans use cooling devices like the ceiling fans and ACs, we worker bees have to cool the hive temperatures by fanning with our tiny wings

Sometimes I also have to perform the undertaker's task of throwing out dead bees, dead insects, bee droppings, bits of wax, debris and other foreign objects from our home and throw it out of the hive. By doing this task we maintain a clean environment inside the hive and save time for some lazy beekeeper. I and my sisters are also wax secretors, with which we build our hexagonal

shaped honey combs. We also produce the super food called the royal jelly, meant for feeding our young ones and, rather lavishly our mother. Which is why she has a longer life span and is the biggest in size amongst all the members in my colony.

As a worker bee, I have to venture out into the vast world outside, to do the task of collecting pollen grains and nectar from different flowering plants, shrubs, grasses, weeds, trees, and food crops. I often get exhausted travelling long distances to do this foraging duty, but as a worker bee I cannot afford to be lazy, because the food source has to be collected and stored, for the survival of my colony. I and my sisters work so hard that we have sufficient honey stored for our own consumption, and also make sure that surplus honey is manufactured for you humans to also enjoy and relish!

But how often do you humans realize that worker bees are the only creatures that have the ability to produce honey from nature? At this point I would like to request you humans, not to extract our share of honey, meant for our colony's survival, because that would amount to stealing! I know that's a rather strong accusation. But sometimes you can be very greedy, in taking our storage of honey from the brood chamber of the hive. During the peak honey flow season, you will find surplus honey stored in the super chamber. You can harvest this surplus honey for your consumption too, because we have no qualms about sharing our surplus production of honey. I also want you humans to care for us and handle us lovingly. Ahem! A little bit of TLC (tender loving care) is what we seek from you humans.

But if you want us to produce surplus honey, please do not cut the flowering trees and forests. They are our life line and provide our food source. We are dependent on flowers for our



survival. So dear human, please conserve the forests for our good and for your own good.

Once I become a senior worker bee I have to perform sentry duties and stand guard at the hive entrance, to safeguard my family of honeybees from various enemies and predators. Oh by the way, we do have well developed stingers. One sting from me and you will go ouuchhh! But hey, we seldom sting. We use our stingers only for defensive purpose. If we feel that our colony is threatened and whenever we are startled or scared, we inject our bee venom. So be gentle with us and we will save our stingers and remain safe. We do not want to die unnecessarily before our time. Once we sting a human, we are dead meat! Our stingers are dislodged from our abdomen and our lives are sacrificed in defense of our dear colony. Just like you humans sometimes make supreme sacrifices in times of war and calamities. But unfortunately as a worker bee I will not be awarded with any gallantry award or medals for our sacrificial stings, like you humans. As a worker bee I will die as an unsung hero.

Coming to my brethren the drone bees, we consider them as our very own 'flesh and blood'. But they have a draw-back. Brother drones are unable to feed on flowers due to a short tongue. They do not perform foraging duties, neither do they involve in cleaning and caring. Therefore they have to

be fed like our mother. Oh but they do not sting like me and, therefore are harmless and lazy. You can easily identify them from their stout, pitch black looks. But they do perform a vital role of mating with a virgin queen bee. But not all the drone bees are lucky to cross with the virgin queen. Only the strongest and fittest manages to mate with the queen bee.

This act of mating comes with a price for the drone, though. Because, if you must know, the drone bee plunges down to an adrenalin death, once he manages to mate with the queen! This is how nature designed them poor drones. While for the rest of the unmated drones, they have to laze away their lives inside the hive until they die or are sometimes pushed out by worker bees like me. So the adage 'survival of the fittest' applies to them drones.

Dear human, did I bore you with the life and adventures of a humble worker bee like me? I sincerely hope my life did not sound mundane to you. I have many more adventures to share with you, if you only care to listen. But perhaps I will do that in another life. My life span is too short. I live only up to a maximum of 6 months. I am a worker bee and I do all the tasks I have shared with you, with great zeal and a great sense of urgency, because I do not know when my short life may be choked to an unceremonious death by a careless human or by a jungle fire, or by indiscriminate usage of pesticides and insecticides or by the many predators lurking in nature. Therefore I live my life to the fullest when I am alive. I hope I have tickled your curiosity. But for now, I have to touch base with my fellow worker bees, and join them into a foraging trip to a nearby mustard field for collection of pollen.

Signing off with a buzzzzzz... and a request to you, human, to be my friend and protector, in return I assure to be your sweetest friend yet.

(This article is part I of a series, so stay tuned for part II in next API NEWS issue)

SOME OF THE Issues in Beekeeping Development

Dr.Thungben Yanthan Team Member, NBHM.



As mission we are all working in a team, planning and executing how to bring changes in the lives of people to move out of poverty through beekeeping. Working in the Mission as implementing field personnel, it is likely to find many issues in beekeeping development. Beekeeping is not an easy field and to achieving the objective of transforming the poor people from subsistence to commercial beekeeping is crucial. However this issue needs to be identified and addressed by everyone who is involved, as some of these issues are actually relevant in all beekeeping development.

Though beekeeping is considered as significant income generating activity for rural people and considered as a viable activity to keep people out of their

poverty, however the project is often derelict on the ground that beekeeping is consider as a secondary activity. Most of our poor people depend on subsistence agriculture and many of them are engaged in honey hunting or marginal beekeepers. As these poor people cannot take risk by taking up beekeeping alone, they build their livelihood on a range of activities.

We have spent a lot of time, energy and resources in conducting seminars, awareness, sensitization, workshop and training in many areas, emphasizing on technology transfer and comparing different hives like log hives (Fixed comb hives & traditional), Changeable comb hives (Kenyan Top bar hives) and Movable frame hives (Scientific), but transforming these poor people from subsistence beekeeping to commercial beekeeping requires many changes like skills for harvesting

honey and post-harvest management to ensure high quality of hive products.

How can we achieve successful beekeeping? Beekeeping is not a simple field as it is thought. If we look up at the beekeeping scenario of the world, most of the projects focus too much on technology delivery. Apiculture development in today's world, there is confusion between Extensive and Intensive beekeeping system, why because many experts regarded intensive beekeeping as scientific whereas extensive is considered as traditional. However in the remote areas we see our poor people are practicing extensive beekeeping which is low cost and most effective. So while choosing



technology transfer, we should never ignore the skills and Indigenous Technical Knowledge (ITK) of the local beekeepers. It is a good idea to incorporate the local beekeepers skills and knowledge with the new technology. Why because their management practices may be better than it appears in the first place and that may be more pertinent to the local condition.

While taking up apiculture development we have to identify the constraints faced by the beekeepers. Whether beekeeping is a feasible way to move out from their poverty? What is the best way to help these beekeepers? Providing beekeeping tools and equipments? We have to question ourselves. We have to see that whether the constraints is with the bee biology, need for technical support, financial support for taking up developmental activities or access to market for their produce. Once their problems are identified we have to find out what intervention has to be taken up.

Considering the biological constraints in taking up Apiculture development, it is better to use only local bee species, as it has lot of advantages. Local bee may be indigenous or locally adapted species. Because local bees are already acclimatized to their environment and there is no risk of importing pathogens through transportation. Practicing extensive beekeeping with local species is of low cost and effective. It is necessary to understand about the local bee biology and their behavior, learn about their nesting, swarming, migration and absconding behavior. This is important because, honey bees may have biological and behavioural variations from place to place.

From this viewpoint, beekeeping may be readily appreciated for the important role played within the rural livelihoods. Now beekeeping is recognised worldwide and

accepted as a viable occupation to keep people out of poverty. However, while taking up beekeeping development, one must not only focus on the technology transfer but also focus on addressing issues beyond technology transfer. One crucial area is to assist the beekeepers in enabling access to market for the products and produce through the services provided by the bee. The poor beekeepers will gain interest and increase their extent of beekeeping only when they have markets for their produce.

A realistic goal should be set while planning a beekeeping project, because a small manageable project which succeeds is more meaningful than a large unmanageable one that fails. A beekeeper having fewer, but well managed colonies are better profited than having many, yet poorly managed colonies. In any field of development, change is slow process and so must start with an idea how to bring changes. In planning beekeeping project it is also required to identify people of an area who can make beekeeping equipment and getting it made is success in itself.

Beekeeping is a long term development and should not aim for giving rapid assistance. So, while aiming for development we should target on helping the beekeepers to move from subsistence beekeeping to income generating activity. In many areas empty hives is a common sight, but nobody reports the failure. We are often confused between beekeeping aid and beekeeping development. We also should understand that, providing equipment and brief training will not change the poor people from subsistence agriculture and move out of poverty.

While aiming for marketing of hive products, identify and consider the local outlets available for marketing of

hive products. We have to locate those people who are already engaged in honey or bee-wax trade in the local markets. This will ensure a steady supply of good quality honey and hive products. Also identify who can provide potential markets for honey and other hive products. Understand and consider the market access and ensure honey quality from the producers till it reaches the consumers. Before considering export, first explore the domestic market and only after saturation of the local markets and meeting the domestic demands export should be aimed. Because, once the export business is commenced, continuity should be established for sustainable business.

Proper project planning is key to the success of any project, so also with beekeeping. If we carefully consider the above mentioned issues beekeeping projects will achieve its objectives to a large extent.



USING QUALITY BEE BOXES SAVES MANY BEEKEEPERS PROBLEMS

Temjenchuba K. Char, Team Member, NBHM



Since its inception NBHM has undertaken many experiential and adaptability studies on different types of bee hives and hiving practices to arrive at a 'near to perfect' bee hive for our indigenous bee species, based on local conditions. From day one the Mission has endeavored to bring about uniformity in the size of bee boxes (ISI A & B types) being distributed to our beekeepers with the active involvement of many local entrepreneurs and bee box manufacturers. The local manufacturers with the direction from NBHM have managed to constantly improvise and innovate the bee boxes issued to beekeepers by incorporating the correct dimensions, wood type, color of paint and thickness of the various components of the bee box. Other vital considerations like the bottom board designs, free entrance/queen gate size for movement of bees in & out of the hive, etc were arrived upon, after years of trial and error.

Bees, like any living creature, adjust to their environment by choosing the best cavity to build their hive. Sometimes the area may be very ideal for foraging (ample food source), but due to unavailability of proper hiving cavity the bees

themselves are desperate enough to nest inside congested spaces like electric poles, retaining walls, trees, cupboards, dark room ceilings, etc. This is one good opportunity where we humans intervene by transferring such colonies to our scientific boxes. We do collect bees by baiting them with fresh, clean & dry empty bee boxes (scientific/crude) placed in good locations during swarming season or by collecting nested swarms or swarms during flight. There after it's just a matter of keeping them comfortable so that they continue with their normal nest activities & finally we are benefitted with honey (hygienically machine extracted or hand squeezed) during honey flow season.

CRITERIA TO BE LOOKED INTO FOR A QUALITY BEE BOX:

1. Dimension: Depending on the foraging available, specific ISI boxes 'A' or 'B' types are to be used. This is because our cerana bee colonies tend to grow up to a population of 5000-6000 members in a hive in peak season, especially where the foraging covers a large area. By adding more super chambers the swarming tendency is controlled & eventually more honey is harvested. In such bee haven areas we recommend ISI 'B' bee

type boxes. Any lesser than this population size indicates inferior foraging cover in that area. So the smaller 'A' type boxes should be used.

In the latter case if the bigger 'B' type boxes are used, then the bees find it impossible to cover the whole volume. It has been observed in such cases that the bees are hardly able to cover the brood chamber, thereby leaving the honey chamber almost or entirely without any comb building.

2. Wood: Many first time beekeepers have the view that bees have a liking for certain timber species only & would colonize hives made of such wood only & also that such hives should be made entirely from one particular wood species. This is true to a great extent but it has



been observed & experienced from our end that with dedicated & experienced hands one can colonize bees in hives made from numerous timber species & also on such wooden contraptions made from several wood species assembled together, but provided the building material is well seasoned.

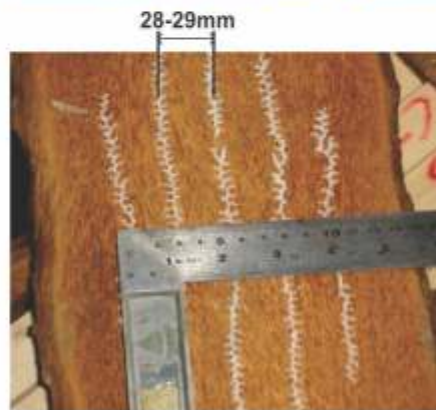
To avoid so many unnecessary hassles we recommend that within a localized belt or green cover zone, one should first keenly observe & find out in which particular tree/s bee colonies are generally found. So from the seasoned wood of such tree species one can make the bee boxes.

3.Thickness: Taking a cue from our traditional boxes & log hives which are normally thick, the same principle when applied to constructing scientific hives, does keep the bees comfortable. But it will be unwise & uneconomical to go for thickness of planks, frames or such other components of the box beyond 1 to 1½ inches, from a box maker's end, as it will compromise with their profit margin.

4.Paint: The color of the paint offers no obstacle in bee's settling into a bee box. As we come across bees settling comfortably inside various hives with varying colour patterns, like natural log hives (light brown color), retaining walls (greyish), earthen pots (red-brown-darkish), alder trees in the field (blackish), ceilings (blackish-white), underground cavities inside the earth (brown-black), etc. No matter whatever the color may be, we just have to ensure that the bee box made is dry, clean & dark inside (minimum cracks & crevices to allow only little or no light inside).

The primary objective of painting a bee box is to offer durability and longevity to the hive as the paint protects the box from the elements of nature like sunshine and rain water.

5.Bee Space & Frame width: We have several species of Apis cerana found in our state. So the



size of their combs & spacing in between differ by a mere 1 to 2 mm. bee space refers to the distance maintained between adjacent frames i.e., 7-8 mm for our indigenous Cerana bees.

Along with the bee space equally important to maintain is the width of the brood & super frames. The width of the frame should be the distance measured from the mid rib of one natural comb to the mid rib of the adjacent comb, which comes to almost 28-29 mm for our indigenous bees. The amount of bee space provided & width of frames used determines the nature of comb building activities (perfect or burr). So it has been observed that 28 - 29 mm frame width & bee space of 7-8mm if maintained for our indigenous bees, then the bees build straight combs as in their natural way.

The bee space is also to be maintained vertically between the brood & Honey chamber frames otherwise the bees tend to build combs to cover the gaps in between which are then filled with eggs, pollen & honey. Such undesired comb building sticks the two chambers together making our periodical hive inspections a

difficult & time taking procedure. In inexperienced hands lots of comb destruction & bee mortality occurs while trying to separate the two frame tiers. This is also one reason why desertion generally follows such hive operations- much undesirable for the beekeeper after hectic time spent. *Note: Providing bee space between two adjacent frames allows the bees to avail the same spacing between the combs for their mobility as illustrated in the picture.*

Therefore, if we consider all these above factors while designing a quality bee box then we can also expect the best performance from our bees and also ensure the beekeeper with optimum & quality honey yield.

Note: Besides the design and quality of the box, there are many external & internal factors that determine the comfortable stay of the bees like positioning of the entrance, protection from sun heat, winter chilling, ants, pests & predators, excess drone control, re-queening, etc. So even if one has in possession the perfect bee box, such factors and possession of the right technical knowledge will greatly help in successful beekeeping.

A BRIEF REPORT ON
 "PROMOTION OF MODERN BEEKEEPING FOR SUSTAINABLE LIVELIHOOD
 AT TIZU WATERSHED REGION OF TUENSANG, ZUNHEBOTO & KIPHIRE
 DISTRICT OF NAGALAND STATE" – A JOINT INITIATIVE OF NRTT & NBHM.

Bokali Chikhe, Team Member, NBHM

Navaj Bhai Ratan Tata (NRTT) Trust and Nagaland Beekeeping & Honey Mission (NBHM) joint venture under the Project title "Promotion of Scientific Beekeeping for Sustainable Livelihood in Tizu water shed of Tuensang, Zunheboto and Kiphire districts of Nagaland", from 2011 to 2014 was successfully implemented in 30 villages (10 villages in each district) covering economically poor farmers. The overall objective of the project was to enhance household income of 1000 households in 30 villages from three districts through beekeeping activities and to contribute to poverty reduction in rural areas of Tuensang, Kiphire and Zunheboto District by promoting beekeeping as a sustainable livelihood. The project activities include a baseline survey by trained enumerators, awareness and motivational programmes, basic training on beekeeping, formation of Village Beekeeping Committee (VBKC), establishment of scientific apiaries, stock multiplication centers, training on post-harvest management, exposure visits for progressive beekeepers and participatory monitoring of Apis dorsata hives. For successful implementation of the project timely field visits and review was conducted by concerned team members, project associates and officials from the Trust.

The project had been successful in broadening the scope and understanding of the beekeepers in the beekeeping sector to a great extent. Production of good quality honey and consumption of honey has witnessed an increase in the project area. Beekeepers has also

formed producers collective for marketing honey to organization/private buyers in bulk at the village level. Many beekeepers in the project area has started earning subsidiary income of Rs.5000 to 30,000/- per annum.

The 3 years project ended successfully however on the other hand there were many challenges during the time of implementation. Improper record keeping by some beekeepers, poor road conditions for constant monitoring and the inherent subsidy trends that still exists, were some of the challenges faced. The unpredictable nature of bees, absconding of bee colonies due to hornet attack, etc., were also sometimes frustrating challenges for the beekeepers.

SUCCESS STORIES:



1. Namang Wongto Chang, a promising beekeeper from Chingmei village of Tuensang started beekeeping with two hives in traditional wooden hive, with intervention of NBHM-NRTT, today he has more than 70 bee colonies and also runs a stock multiplication centre. Through sale of honey and bee colonies he is earning an annual income to the tune of more than Rs. 50,000/-. The handsome income he is earning today through beekeeping has convinced him to give up jhum cultivation and focus on beekeeping and farm based activities to meet his family needs. A humble and sincere beekeeper, Namang is always ready to share

his expertise to other beekeepers in the adjoining villages and also assist in beekeeping training.



2. Kiusangthong, a promising farmer from New Vongti village started beekeeping after attending training of NBHM-NRTT project in the year 2011. Today, he is the proud owner of 80 bee colonies and about 10 stingless bee colonies reared in split bamboo, a cost effective innovative technique. He is of the opinion that after incorporating beekeeping in his agricultural field there has been a substantial improvement in quantity & quality of crop yield though there is no scientific analysis. A genuine beekeeper who have developed consumer loyalty, his honey gets marketed easily in his farm itself which is packed in 1 kg bottle at the rate of Rs 250/-. In fact the local demand of honey is too huge for him to cater to everybody for which he is looking forward for an opportunity to expand his apiary in the years ahead. At present his apiary servers as model apiary / demonstration unit offering local expertise to the beekeepers from adjoining villages.

3. Ghonito, a well-known beekeeper and a farmer from Ngozubo village has three apiaries located in different places. He harvest and sells comb honey from his apiaries to nearby villages and towns which is helping him to pay for his children's education in schools and colleges. The income

he has earned over the years through beekeeping has enabled the purchase of a Mithun for his family. He finds beekeeping to be an economically rewarding occupation due to the sweet results.



Kihoyi-bee house at Keltomi vill

4. Kihoyi from Keltomi village is a very promising beekeeper and also known as a bee expert. His fellow farmers used to taunt him that he is casting some sort of magic spell over the bee hives for the reason that though bee boxes are placed in same location his box gets colonized repeatedly within no time. Ever since he attended the training by NBHM, it has been a turning point for him. He continues to constantly maintain 40 to 50 bee colonies thought out the year. 3 to 4 years back, his children were studying in a Government primary school in the village but with the handsome return earned through honey sales, his children are able to study in a private school in Zunheboto town. He says that even if he gets no support from government or any other organization in the later years he will continue working with bees.

5. Jessy, a beekeeper from Lizuto village, Zunheboto, became a passionate bee lover during his school days. During those days, when his village did not have a public transport vehicle, Jessy along with his friends would walk miles by foot to Zunheboto for schooling. Along the way, he used to collect the wild honey combs and relish on the sweetness of honey which gave him the energy to continue the rest of the journey. Later he was appointed as a



Jesse homestead Apiary



Jesse in his grocery shop

teacher in his native village which gave him the opportunity to settle down and pursue his passion. He started to chisel hives from wooden logs and timber for keeping the bees. Over the years, the walls of his home became occupied with traditional bee hives filled with bees. After attending the training conducted by NBHM under NRTT project he slowly gave up with traditional system of beekeeping owing to management disadvantage and honey quality. Today, he is the proud owner of 50 bee colonies in scientific hives well maintained in his apiary. Through his extra earning, Jessy has opened a whole sale grocery shop in the village which caters to the needs of his village and the adjoining villages as well. He is also the first person to have bought a washing machine from his village. With the annual income from beekeeping he is able to buy a few bags of rice which is enough to sustain his family throughout the year. He encourages his fellow villagers to focus on beekeeping as it has low inputs but high return unlike paddy cultivation. Inspired by Jessy, a women Self Help Group in the village have started taking up beekeeping activity. With his

wide knowledge and experience, he has motivated others to take up beekeeping in his Village and encourages others to become a passionate bee lover.

API-VILLAGES:

1. Chendang village under Tuensang district started taking up beekeeping in the year 2009 with basic training on scientific beekeeping to limited number of farmers but with the growing passion for beekeeping it has reached out to more than 173 households. Village beekeeping committee have been instituted comprising of 70 actively involved members of men, women and family members. Initially 100 kgs



Api Vill- in Chendang village

of honey was produced in a year which have been substantially increase to 3 MT per annum. Honey produced are collected at collection center in the village and marketed to nearby towns and NBHM. The Committee collect Rs. 10/kg from all the honey sale proceeds for the welfare fund and for sustaining beekeeping activities in the village. Chendang village is perhaps the trend setter for other villages in the District.

2. Keltomi village is situated in Aghunato area under Zunheboto district. Initially the village had just few traditional beekeepers keeping countable bee colonies for domestic consumption in wooden logs and box hives hanging beneath the roof of their house

SUCCESSFUL BEEKEEPER FROM TUENSANG DISTRICT.

Mr. Hekhiamong, a village guard hailing from Yakor village under Shamator sub-division of Tuensang District is an inspirational figure for many people from his native village as well as neighboring villagers when it comes to beekeeping.

He started his foray into beekeeping in the Year 2011 with one scientific hive and one locally made bee box. After the Mission initiated its beekeeping activities in his village, he got himself well equipped with the technical know-how on bee management and honey harvest coupled with his dedicated mindset. Today he is the proud owner of 136 bee colonies. Owing the highest number of bee colonies in his village, he is earning an annual income of more than Rs.1,30,000. His success story has encouraged other farmers of his Village to also take to beekeeping as an economically viable activity.

During an interaction with him, he narrates about how his life has totally changed because of beekeeping. With the income from sale of honey, he has constructed a four bedroom house and also married off his daughter without any monetary problem. Traditionally a jhum cultivator from his forefathers' time, he is now a full time beekeeper and has shifted to farm based activities and his erstwhile agricultural land used for jhum farming is now left as fallow and forested area.



and granary. With intervention of NBHM-NRRTT initiative the village today is buzzing with beekeeping activity. Village beekeeping committee have been formed comprising of 45 members. By broadening their understanding of bees and beekeeping, the beekeepers has planted bee foraging plants in and around the village and in the fields which is being maintained by the community. With the increased in the number of bee colonies, the beekeepers have shifted from homestead to field apiaries. The Village Council have also made a resolution during the annual village meeting to completely ban using insecticides, weedicides or any other synthetic chemicals in the village jurisdiction to produce organic honey, fruits and vegetables. The honey produced from Keltomi village is today certified as organic. It also has 12 beekeepers who have been registered under National Bee Board. Keltomi village produces 1 MT per annum at present.

with the NBHM- NRRTT intervention positive impact has been created. Today, the villagers are much aware of the importance of bees and beekeeping and are now equipped with technical knowhow of bee rearing. At present, the village has as many as 32 beekeepers rearing common honey bees and stingless bees as well. Tutheze village is also known for the varieties of vegetables it produces and the pollination service provided by the bees will surely boost the vegetable production of the village in the years ahead.



3. Tutheze village located in Kiphire district is an upcoming api village in the district. Initially there wasn't a single traditional beekeeper in spite of abundance of natural bee colonies in the wild. Villagers have been rampantly collecting wild honey by burning/killing bees. However,



Pherima Api-Village : A Profile



Homestead apiary

Pherima village is located in the eastern part of Dimapur district along the N.H.-29 with a distance of 37 Km from the District Headquarter. It has a population of 650 people and 130 households. Agriculture is the mainstay of their economy with 70% of the inhabitants engaged in cultivating rice, brinjal, bitter gourd, maize, pumpkin, beans, Lady's finger, pineapple, mango, litchi and tree beans for their livelihood. Prior to NBHM's intervention, Beekeeping

in the Village was undertaken as a backyard activity by 6 beekeepers having 10 bee colonies. In the year 2009, the Mission intervened with the introduction of scientific beekeeping through beekeeping trainings & setting up of Apiaries in the vicinity of the Village. Today the beekeeping activity has increased to a commercial scale. Presently there are 20 active beekeepers with 152 live bee colonies producing around 600 kg of honey annually. Honey from the Village is sold to eager buyers

along the NH-29 between Kohima and Dimapur.

Besides earning additional income from the sale of honey, it was interesting to learn from them that, over the past few years with the increase of bee colonies in their village there was sudden boost in agricultural crop production through pollination service provided by the bees. As per reports received by beekeepers from the Village Shehuto Zhimomi and Yehevi Awomi, there has been a bumper yield of paddy and other agriculture and horticulture crops from the same plot of field over the years after increase in beekeeping activity in the Village area. This also paved the way for production of good quality seeds for the farming community. If one were to visit their cropped fields, one can observe and hear swarms of busy bees buzzing and collecting Nectar and pollens.

The successful beekeeping initiatives in this Village goes to prove that Apiculture is a feasible activity to wean people away from poverty and at the same time help in maintaining natural diversity. Honeybees and their pollination activity, is often overlooked, misunderstood or taken for granted. Lack of bees is frequently an important reason for low crop yields and imbalance in biodiversity.

CHOZUBASA- An upcoming api-village of Phek District.

Chozubasa, is a small village in Phek district located in Chozuba Block. The village which was established in the year 2006 has a total population of 155 people and 52 households. Agriculture is the mainstay of the village economy, where majority of the population's income depend on terrace cultivation and vegetable gardens. However, with the intervention of Nagaland Beekeeping & Honey Mission in the year 2014, the villagers has begun earning additional income



Mr. Khuvoyi Vese Team Member I/C Phek District along with VBKC members of Chozubasa during a monitoring visit.

(Cont..)

through rearing of bees and there is hope that the economic status of Chozubasa village will also slowly come to be at par with the rest of the state.

Thuyenyi Rhakho, a progressive Beekeeper of Chozubasa



NBHM's intervention began in 2014 wherein about 30 villagers were imparted training on basics of beekeeping and provided with bee boxes and other beekeeping tools. The training has greatly made an impact on the villagers in understanding the various aspects of bees, beekeeping, and management practices for successful beekeeping as is manifested by number of bee colonies and the annual honey production of the village at present.

Within a short span of time, the bee colonies in Chozubasa has grown from a few traditional bee colonies to about 480 bee colonies. Beekeeping has thus grown to a commercial scale. With the annual honey production of around 2 MT, Chozubasa village has earned itself a place as the leading honey producing village of Phek district and possibly the State of Nagaland. Besides the additional income earned from the sale of honey, the pollination service provided by the bees will surely boost the agriculture crop production of the village. It is hoped that the lush green fields of paddy and the rich varieties of vegetables of Chozubasa village will give a bountiful harvest in the coming years.



Harvested honey ready to sold out

Shamnyu village: An upcoming Api Village under Mon District

Shamnyu Village is 132 Kms away from Mon Town and lies 12 Kms below Tobu Block. Initial survey taken in Nov 2012 revealed more than 50 families rearing solely stingless bees of both over ground & underground species. They had 1 or 2 hives mostly but no individual with more than 4 colonies. The reason for the absence of apis cerana traditional beekeepers was simply due to lack of basic knowledge. There after a basic beekeeping training was imparted to 30 plus enthusiastic villagers in the year 2012. The result was very encouraging, as more than 25 bee boxes were colonized after the training, out of the 35 scientific bee boxes provided. In the subsequent year (2013) the beekeepers from the Village formed their Village Beekeeping Committee (VBKC), with 23 active beekeepers, since forming the VBKC, they have availed more boxes on loan from NBHM.

A survey in Feb 2016, revealed that the number of stingless beekeepers had crossed more than 70 beekeepers. Mention may be made especially of 7 Stingless beekeepers from this Village, who are rearing about 103 colonies, which is an outstanding achievement, considering the fact that beekeeping has been recently introduced to them some 3-4 years back.

On the other hand, it was discouraging to note that the cerana beekeepers had not progressed much. Though cerana bees have the natural tendency for swarming & deserting behavior. The beekeepers cited that, one major reason for the bees not inhabiting the scientific boxes, was due to defective bee boxes supplied by the bee box suppliers. On inspection of the boxes supplied to them, it was found to be true.

Seeing their plight, the District In-Charge decided to train 2 progressive beekeepers from



their VBKC on scientific bee box making from a unit at Dimapur. Accordingly Mr. A. Tongo & Mr. H.Tongo arrived at Dimapur, to undergo the box making training under the able hands of Mr. Ayu, an expert bee box maker residing at Aoyimti, 3rd mile Dimapur from 6th-7th May 2016. Again on 9th May they were trained to make a newly designed over-ground stingless hive. The bee boxes manufactured by these two trainees during the 3 days of practical training was indeed very commendable.



This initiative was undertaken in order to let progressive beekeepers to diversify into ancillary activities like bee box manufacturing, which will enable them to earn additional income through sale of scientific bee boxes. The two beekeepers of Shamnyu Village due to their hard work and dedication has been given the opportunity to be gainfully self-employed, at the same time they have encouraged and paved the way for other unemployed youth in their village to follow their example.

NECTAR OFFICIALS VISIT TO MUC

Officials from North East Centre for Technology Advancement and Reach, under the Ministry of Science & Technology, Government of India led by Shri Sanjeev Nair, Director General and Shri Ajay Kumar, Director NECTAR accompanied by Shri Alemtemshi Jamir (IAS) Retired Chief Secretary of Nagaland, made a visit to NBHM's Multi-Utility Centre 6th mile on 17th April, 2016 and held a meeting with Chairman of NBHM Shri Pusazo Luruo and Team members.

During the meeting a Power Point presentation on the Mission's activities was presented by team member Chubanungla Shilu highlighting the mission's achievements and way forward. The NECTAR officials during the meeting assured NBHM to support with 5000 scientific bee boxes to be handed over the NBHM's beneficiaries covering all the 11 districts, for which a Detailed Project Report is to be prepared and submitted to them.

Earlier on 15th April 2016 the visiting officials undertook a field visit to Mima village and had a look around the traditional underground beekeeping practices and the scientific apiaries in the vicinity of the village. They also had an interaction with the Village Beekeeping Committee and assured them to support with 2000 concrete underground bee hives and financial assistance for 4 km long water supply pipes to reach the beekeepers apiaries.

SLOW FOOD FESTIVAL AT ITM 2015 SHILLONG

Team NBHM comprising of Bodevi Shuya, Chubanungla Shilu and Neilazono Terhuza participated at the International event Indigenous Terra Madre 2015, at Shillong Meghalaya from 3rd - 7th November, 2015 at NEHU Campus. The event was organized jointly by NESFAS and the Indigenous partnership and Slow Food International with a view to bring together indigenous peoples from around the world and present them with a unique opportunity to network and share knowledge about food, nutrition and bio-cultural diversity. The Mega event was attended by 148 indigenous food communities from 58 countries of Africa, the Americas, Arctic, Asia, Europe, Middle East, Russia and the Pacific. The theme of the event was, 'The Future we want: Indigenous Perspectives and actions'.

During the Slow Food Festival, Team member Chubanungla Shilu participated at the 'Taste Workshop' organized as part of the event. A presentation on 4 different types of freshly harvested and organically produced 'Nagaland Honey' was made during the workshop. Through this workshop, the international audience and participants got the opportunity to sample the unique taste and flavours of 'Nagaland Honey' and at the same time enabled our home grown produce to be debuted at an International arena.

RKVY Training at Satsukba village, Mkg.

A three day training on Beekeeping under RKVY was held at the community Hall, Satsuk village, under Mokokchung District from 22nd to 24th March 2016. Altogether sixteen farmers from the Village attended the training which included existing beekeepers, Council members, Pastor and Women members who actively participated in the training.

The training programme included both class room lectures and hand on practical sessions. The resource persons during the training were Team members of NBHM, Chubanungla Shilu and Temjenchuba and Project Assistant, Akumyanger. After the training the trainees received bee boxes and other tool kits to start their beekeeping unit at the village.



Nagaland Honey making its debut at the International Slow Food Festival



NAGALAND YOUTH SUMMIT 2016

With a view to have an educative interface with the upcoming youth of the State on the importance of honeybees and the vast scope that the beekeeping sector holds in the economic development of the State, NBHM participated at the Nagaland Youth Summit 2016, from 26th to 27th Feb 2016 at NBCC Convention Centre, Kohima.

The Summit was organized by Youth Net in collaboration with the Government of Nagaland under the theme "Celebrating Young Nagas; Preparing the Next Generation" and attended by around 2000 youths from across the State and outside.

During the event, NBHM set up a stall, where the Mission's activities, objectives and initiatives undertaken were effectively displayed for the benefit of the youths who participated at the Summit. Hundreds of youth made a foot fall at our stall and had a fruitful interaction with the Team members manning the stall. Free brochures were handed out to the visitors and information on the mission's activities was disseminated to those participants who visited our Stall. Nagaland Honey was also sold to eager buyers during the event.

TRAINING ON VALUE ADDITIONS AT KOTAGIRI

Team NBHM comprising of 5 Team members and 2 Project Assistants attended a 5 days Training Programme on Value Additions of Beeswax and Honey from 6th to 10th July, 2015 at Kotagiri, Tamil Nadu. The Training programme was organized and conducted by Officials of Keystone Foundation at their Centre and also at different Producers Company promoted by Keystone Foundation at different locations.

During the 5 days Training programme, the Team learned the manufacturing process of various value added products obtained from beeswax and honey, like beeswax lip balms, beeswax pain balms, beeswax soap making, Honey and spice products, Honey with nuts and fruits, beeswax candle, pollen analysis of Honey and packaging and labelling of all such value added products.

The Team learned the manufacturing process of all the value added products from the Aadhimalai Pazhangudiyinar Producers Company Ltd at various locations.

The Team also visited the Green Shops at Kotagiri and Ooty, the Bee Museum at Ooty where different value added products from beeswax and honey were marketed and displayed.

After attending this training programme, the Team came back well equipped to start NBHM's own value addition unit. The Mission is now in the process of launching its very own brand of value added products under the Brand Name 'The Hive' with a tag line 'wellness in a Buzz'. The products comprise of differently flavoured bee dazzled lip balms and soothing balms along with different flavoured spiced



honey and nuts and dried fruit honey will also be made available for consumers to savour and try out for the very first time in the State. These products made out of natural hive products mixed with different food flavours and spices is expected to attract buyers who are conscious of the benefits of using and all natural homemade remedial product with traditional values attached to it.



AGRICULTURE STUDENTS TRAINED ON BEEKEEPING

Total of 28 students from Doon (PG) College of Agriculture Science & Technology and Dolphin (PG) Institute of Biomedical & Natural Science Dehradun, Uttarakhand attended a 3 days Basic Beekeeping Training from 8th to 10th March 2016 at NBHM's Multi-Utility Centre. The training was organized by NBHM as part of their Rural Agriculture Work Experience (RAWEx) under their B.Sc Agriculture course.

During the training program, the trainees got themselves acquainted on the Scientific Management of honeybees through both technical lectures and hand on practical sessions. Certificates were also awarded to all those who successfully completed the training programme.

SASRD STUDENTS VISIT TO MUC

A group of B.Sc Agriculture students from School of Agricultural Sciences & Rural Development (SASRD) under Nagaland University, Medziphema had a one day exposure tour to our Multi-Utility Centre on 15th March 2016, as part of their experiential learning programme to get acquainted on the scope and potentials of bees and beekeeping. The Team was led by Dr H.K Singh, Professor & Head Department of Entomology, SASRD NU. During their visit the students sat for a lecture on beekeeping presented by NBHM later they also visited the Bee Museum and Honey Processing Unit and got themselves exposed to valuable information on bee species, different rearing practices and tasted different types of honey at the processing unit.

EXPOSURE VISIT OF KVK OFFICIALS TO NBHM PROJECTS

A Team of Scientists from Khrishi Vigyan Kendra (KVK) led by Dr Samuel Lalliansanga, Senior Scientist & Head KVK Lengpui, Mamit District, Mizoram undertook a study tour to Beekeeping Project Villages under the aegis of NBHM from 25th to 27th May, 2016 to get a firsthand knowledge on successful implementation of beekeeping programs by the Mission and in order to replicate the innovative capacity building exercises by NBHM and the successful model of Village Beekeeping Committee (VBKC) in Mamit District of Mizoram.

During their visit the Scientists from Mamit, had interactions with Officials of NBHM and the VBKC members at various Api villages under Kohima and Dimapur District. At Kohima they were taken to Meriema and Mima Village while at Dimapur, they visited apiaries at Bade Village.

The visiting officials were also taken around the Honey Processing Centre and the Bee Museum at MUC, 6th Mile Dimapur.



Practical learnings from NBHM Officials for Agriculture Students. (Above & Below)



Scientist from KVK, Mamit District Mizoram during their visit to MUC

NBHM PARTICIPATION IN DESTINATION NORTH EAST-2016 IN NEW DELHI

Team NBHM Participated in “Destination North East - 2016” - A mega event to display the strengths, potentials and initiatives in the North Eastern Region from 12th -14th February, 2016 at Pragati Maidan, New Delhi. The event was organized by the Ministry of Development of North East Region (DoNER), Government of India to showcase the activities by various Ministries in North East and also give an opportunity to different sectors to showcase and deliberate their achievements, issues, constraints and challenges. The event included a Business Summit, Exhibitions Stalls showcasing features of North East on sectors such as Tourism, Information Technology, Skill Development, Food Processing, Handlooms and Handicrafts, Rural Livelihoods, Entrepreneurship and Microfinance, Horticulture and Floriculture, etc. Various cultural programmes showcased the rich culture and folk dances of North East India.

NBHM participated in the mega event by exhibiting and showcasing the different honey products accumulated through North Eastern Council (NEC) funded project on Development of Beekeeping & Honey production in Nagaland. Visitors thronged the NBHM stall to get a taste of the pure and natural Nagaland Honey which was a hit with the local populace so much so that the honey was completely sold out. NBHM also got a lot of positive feedback about the goodness of Nagaland Honey, and also trade enquiries for Nagaland Honey.

GOVERNOR'S VISIT TO NBHM MUC, DIMAPUR

The Honourable Governor of Nagaland, Shri. P.B. Acharyya paid a visit to NBHM's Multi Utility Centre at 6th Mile, Dimapur on 18th December, 2015. The Hon'ble Governor, accompanied by his lady wife was warmly received by Shri. Pusazo Luruo, Hon'ble Chairman, NBHM, Shri. Imkonglemba Ao IAS, Agricultural Production commissioner and Team Members of NBHM. A short welcome program was organized by the Mission where the Hon'ble Chairman of NBHM delivered the welcome address and the activities of the NBHM was highlighted by Nzanbemo K.Lotha, Team Member NBHM. The programme was also attended by Shri. Hekato DPO, LRD and staffs of LRD, Dimapur.

The Governor and his lady wife were also shown around the MUC, Honey Processing Unit and the Bee Museum. The Hon'ble Governor was impressed to learnt about the initiatives undertaken by NBHM and commented “it is wonderful knowledge, I am enriched by the honey hunting knowledge”. He was all praise for the officers and staff of NBHM for the great job and wished the team all success in its endeavour.



NBHM at the Hornbill Festival 2016

NBHM participated in the 16th Hornbill Festival 2016 from 1st to 10th Dec, 2016 at Heritage village, Kisama. The Hornbill Festival also called the 'festival of festivals' is an annual event organised by the state government to highlight the rich culture and traditions of the Nagas. The mission set up a honey stall at the Bamboo pavilion where Nagaland Honey was sold to honey lovers. Multitude of local populace, and tourists from various parts part of the country and abroad as well sampled upon the varieties of Nagaland honey and also browsed through the literatures and other products that were put on sale during the festival.

NBHM PARTICIPATION IN REPUBLIC DAY CELEBRATION 2016 AT KOHIMA, DIMAPUR & PHEK

NBHM Participated at the 2016 Republic Day Celebration in three district headquarters of Kohima, Dimapur and Phek. In Dimapur and Kohima, exhibition cum sales counter was set up in DDSC Stadium, and Secretariat Plaza respectively. While in Phek, the Mission took part in the celebration by setting up a stall to showcase the different types of Nagaland honey and also to educate the local populace on the importance of honey bees. Along with the Mission, the progressive beekeepers from Khutsami Village with their honey brand "Khutsami Honey" and a prominent citizen of Phek district and also the Hon'ble Chairman of NBHM Shri, Phusazo Lurou with his honey under the brand name "Zanübu Honey" participated in the event.

With the intervention of NBHM since 2007-08, Phek district has become the second highest producer of honey in the State at present, producing about 72 MT of honey annually. The Mission's participation at Republic Day celebration at Phek HQ had been an eye opener for the local populace of the district and visiting dignitaries as well about the benefits of beekeeping and honey enterprise.

REGIONAL LEVEL MONITORING VISIT OF NEC FUNDED BEEKEEPING PROJECT.

Mr. John Durong, retired Director of Agriculture, Meghalaya and Regional Level Monitoring official assigned by NEC undertook a review visit of the NEC Funded project on Development of Beekeeping & Honey production in Nagaland implemented by NBHM from 20th to 21st Jan 2016. He reviewed the project in the districts of Dimapur and Peren, where the district incharges Mr. Nzanbemo and Mr. Letgong Patrick respectively took him to various api villages. In Dimapur, Mr. Turong visited Bade village and had an interaction with the beekeepers and also visited the apiary sites. While in Peren, he reviewed the project in Punglwa Gaila, Ngwalwa and Old Jalukie villages and also had an interaction with the beekeepers. Mr. Turong also paid a visit to NBHM Multi Utility Centre at 6th Mile Dimapur and was shown around the Honey Processing Unit and the Bee Museum.



Mr. John Durong interacting with Beekeepers

SLSC MEETING

The State Level Steering Level Committee on Beekeeping and Honey Mission held its 3rd meeting on 28th April, 2016 under the Chairmanship of the Chief Secretary of Nagaland Shri Pankaj Kumar (IAS) at the Conference hall of the Chief Secretary, Kohima.

The meeting was attended by the ACS & Development Commissioner, APC & Mission Director NBHM, Secretary Horticulture, Secretary Industry & Commerce, Secretary & Team Leader NBHM and the Team members of NBHM.

In the meeting a power point presentation highlighting the mission's activities and achievements was made by Team member Khuvozoyi Vese, which was followed by a fruitful interaction amongst the SLSC Members and Team NBHM



Several agenda was tabled at the meeting. Some important decisions taken during the meeting are highlighted below:-

Fixation of bee boxes and tool kits : The SLSC has approved the fixation of Bee Boxes and Equipment as proposed and suggested by NBHM and the revised rates are indicated in table below:

Sl no	PARTICULARS	RATES FIXED
2.	Wooden bee box (ISI A Type with 7 frames)	Rs 1400/-
3.	Wooden bee box (ISI B Type with 8 frames)	Rs 1500/-
4.	Wooden Nucleus Box (with 4 frames)	Rs 550/-
5.	Honey Extractor	Rs 1500/-
6.	SS Honey Extractor	Rs 3500/-
7.	Bee Veils	Rs 200/-
8.	Swarm Bags	Rs 100/-

Fixation of Honey Price : In the meeting, the SLSC has approved the rates of honey at the collection level for different districts as indicated in the table below:-

Sl no	Name of District	Proposed rate for honey purchase at Collection Level (For Common Honey)
1.	Kohima	Rs 310/-
2.	Peren	Rs 310/-
3.	Wokha	Rs 310/-
4.	Mokokchung	Rs 305/-
5.	Phek	Rs 300/-
6.	Zunheboto	Rs 300/-
7.	Longleng	Rs 300/-
8.	Tuensang	Rs 295/-
9.	Kiphire	Rs 295/-
10.	Mon	Rs 295/-
11.	Dimapur	Rs 324/-

Fixation of rate for Processed Honey (cerana) w.e.f January 2016

Sl No	Quantity (gm)	Whole sale rate (₹)	MRP (₹)
1	25	16.75	22
2	50	27	35
3	100	48.2	60
4	250	105.8	120
5	500	170	210

Fixation of rate for processed Honey (stingless) w.e.f January 2016:

Sl No	Quantity (gm)	Whole sale rate (₹)	MRP (₹)
1	25	45	65
2	50	90	130
3	100	158	200
4	250	360	400
5	500	705	800

The SLSC also accorded its approval for introduction of 3 innovative hives for hiving indigenous bee species and wide adoption of the hives. It also approved the proposed rates for the 3 innovative hives as indicated below:-

Sl No	Innovative hives	Rate (Rs)
1.	3 chambered Stingless hives (For over ground species)	Rs 600/-
2.	2 Tiered Stingless Hive (For underground species)	Rs 700/-
3.	Wooden and Bamboo Top Bar hives	Rs 500/-



Raphanus sativus
(White Raddish)

- Source:Nectar/Pollen
- F/Time: Nov-Jan
- Distribution: Cultivated
- Photo:Wokha



Agave americana
(Century Plant)

- Source: Pollen &Nectar
- F/Time: April-May
- Distribution: Exotic
- Photo: Dimapur



Sesamum indicum
(Sesame)

- Source: Nectar/Pollen
- F/Time: Sept-Oct
- Distribution: Cultivated
- Photo: Wokha



Ricinus cummunis
(Castor)

- Source: Nectar/Pollen
- F/Time: Dec-Jan
- Distribution: Widely
- L/Name: Aruba (L)
- Photo: Dimapur



Anethum graveolens
(Dill)

- Source:Nectar/Pollen
- F/Time: Nov-Dec
- Distribution: Cultivated
- Photo:Dimapur



Vicia faba
(Broad bean)

- Source:Nectar
- F/Time: Feb-Mar
- Distribution: Cultivated
- Photo:Wokha



Manihot esculenta
(Topica)

- Source: Pollen/Nectar
- F/Time: Oct-Nov
- Distribution: Cultivated
- Photo:Dimapur



Gossypium orboreum
(Cotton)

- Source: Nectar
- F/Time: Sept-Nov
- Distribution: Cultivated
- Photo: Baghty,Wokha



Camellia sinensis
(Tea flower)

- Source:Pollen
- F/Time: Oct-Nov
- Distribution: Widely
- Photo: Baghty,Wokha



Capsicum frutescens
(Chilly)

- Source: Pollen
- F/Time: Yearlong
- Distribution: Wide
- Photo: Wokha



Review meeting of NBHM with Chairman & APC



Chairman NBHM(C) at a review meeting of NBHM with Team Leader(R) and former Team Leader(L)



His Excellency, The Governor of Nagaland Shri P.B. Acharya and his Lady Wife during a visit to MUC with Team NBHM



His Excellency, The Governor of Nagaland Shri P.B. Acharya and his Lady Wife tasting Nagaland Honey at Honey Processing Unit



Chairman NBHM with APC & Mission Director and Team Members



Beekeeping Training under RKVY at Kohima district



Beekeepers exposure visit to Satakha Old under Zunheboto district



Demo on top bar hive at Satakha Old Village, Zunheboto



Dr John Durong, NEC Official during the RLM for NEC project at Old Jalukie Village, Peren



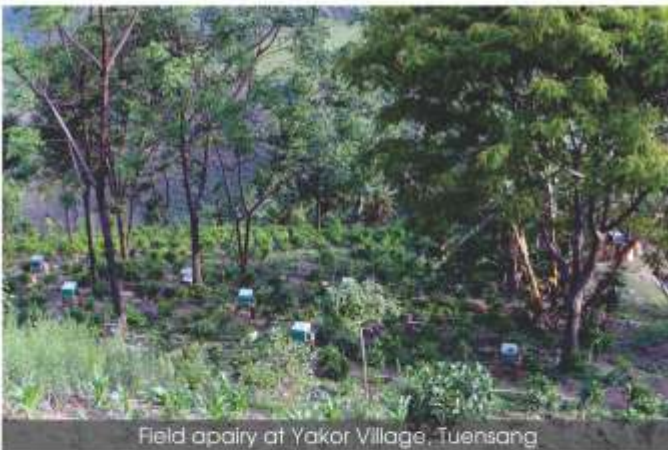
Dr John Durong, NEC Official during the RLM for NEC project at Old Jalukie Village, Peren



Homestead Apiary at Lizutomi Village, Zunhebato



Meeting with Beekeepers, Noklak Village, Tuensang



Field apiary at Yakor Village, Tuensang



Apiary in Kivi plantation at Keltomi village zunhebato



Bees wax lip balms soon to be launched by NBHM under the Brand name 'The hive' with a tag line 'wellness in a buzz'



Practical demonstration during a training at Yali Village under Tuensang District.

Honey Facial Mask Recipe

Treat your dry skin with this honey mask

Who knew the honey sitting in your kitchen cabinet was your best resource for fighting skin care woes like pimples and dry skin? It's true -- honey facial mask recipes have been used by generations of the most beauty astute women because honey moisturizes skin naturally, and it is a natural bacteria fighter for stubborn pimples. Honey also happens to be a great resource for those with sensitive skin who might have negative reactions to ingredient-loaded beauty products, and it is packed with antioxidants for those looking to minimize the appearance of fine lines and wrinkles on your face.



Here are some ways you can use nature's sweetest resource:

Honey Facial Mask Recipe for Dry, Flaky Skin

Directions:

Mix together egg and honey. Spread onto your face and neck and let sit for 15-20 minutes. Rinse well with tepid water.

you will need:
1 raw egg
1 tablespoon honey

Honey Facial Mask Recipe for Acne

Simply apply a scoop of honey to clean skin and let sit for 15 minutes. Rinse with warm water.

To use honey as a spot treatment on pimples you picked at, put a drop of honey on your finger and gently pat it onto the infected area before bed. Cover overnight with a bandage. The honey will keep your skin and the oozing area sterile by fighting off bacteria. And as a bonus it will accelerate the healing process.

For Dry Skin: Honey and Egg Mask

You will need

- 1 tablespoon honey
- 1 egg yolk
- 1/2 teaspoon almond oil
- 1 tablespoon yogurt

Instructions: Put all ingredients into a large bowl and stir until it becomes sticky and thick. Apply the mask to your face for 5 minutes and wash face thoroughly with a mild facial soap. Honey stimulates and smoothes, egg and almond oil penetrate and moisturize, and yogurt refines and tightens pores. The egg yolk also helps to lighten up the skin.



For Tired Skin: Almond Yoghurt Honey Mask

You will need:

- 6oz plain yoghurt
- 1/2oz finely-crushed almonds
- 2tsp honey
- 2tsp wheatgerm oil

Instructions: Mix all the ingredients into a smooth paste. Apply and massage the mixture into skin. Keep the mask on for 20 minutes.

For Oily Skin: Honey-Papaya Mask

You will need:

- 1/3-cup cocoa
- three teaspoons of heavy cream
- 1/3-cup ripe papaya
- 1/4-cup honey and three teaspoons of oatmeal powder

Instructions: Mix and apply on your face. After 10 minutes, wash your face with warm water. This anti-aging skin care mask helps heal skin blemishes, nourishes, draws out impurities, balances your skin pH, and will leave your skin radiant and soft. Good for acne-prone skin.



For Oily Skin: Carrot Face Mask

Your will need

- 2-3 carrots
- 4 1/2 table spoons of honey

Instructions: Cook the carrots and then mash them up. Mix the carrots with honey and refrigerate for 10 minutes. Apply gently to the skin and wait for ten minutes. Rinse off with cool water. Carrots are known to be rich in vitamin A and C. They are also rich in potassium. Vitamin A and C are antioxidants. Honey contains sugar, enzymes, minerals, vitamins and amino acids.

For Sensitive Skin: Banana and Honey Mask

You will need

- 1/2 mashed banana
- 1/4 cup oatmeal, cooked with milk
- 1 egg
- 1/2 tablespoon honey

Instructions: Mix ingredients together. Massage onto face in a slow, circular motion and leave for 15 minutes. Rinse with tepid water. Oatmeal is high in nourishing vitamins and minerals; it gently cleanses and heals skin. Bananas contain vitamin A; eggs contain lecithin, a natural skin emollient; and honey helps to maintain the skin's natural acid mantle.

Bee Tech

INGENIOUS HORNET GATE:

The menace of hornets to honey bees is one nagging problem which every beekeeper faces. Being a major predator for honeybees, they are capable of causing huge colony loss for the beekeepers, if left unaddressed. Being voracious predators, the hornets can easily locate the honey bee colonies and wipe out entire defenseless colonies.

In such cases, a good beekeeper needs to be vigilant and ensure that his colonies are well protected. A good example of controlling the menace of hornet attacks is to place a gate in front of the hive entrance. The gate is made in such a way that, the honeybees can easily pass through it, but not the hornets that are bigger in size.

The ingenuity of the beekeepers is displayed here, when they make good use of items like old discarded car diesel filters, which can be easily obtained from any workshop to make the special protective gate/ entrance for their bee hives.



INNOVATIVE HONEY EXTRACTOR



In Longphayimsen Village under Mokokchung District, this modified honey extractor was spotted during field visits. The conventional extractor made out of Tin sheet was modified and replaced with plastic container by some innovative beekeepers, who felt that this material was more durable than the tin ones, as honey extractors made out of tin were prone to rusting. An added wooden frame was being used to give further support to the extractor.

BAMBOO ANT WELL-CUM- HIVE STAND

Bee colonies always attract ants. It is often a nuisance for beekeepers as well as for the bee colonies. One of the cheapest and eco-friendly ant-well is made up of Bamboo which is readily available throughout the state and is often considered as the poor man's timber.

To construct this bamboo ant well, the beekeeper requires four bamboo shafts with the hollow side facing upward. The hollowed bamboo shafts are then filled with water to serve as ant wells in order to prevent ants from crawling up the bee hive. On top of the hollowed bamboo shafts, a hive stand is constructed from locally available wood and this hive stand is placed above the bamboo shafts. Such bamboo ant wells and wooden hive stand can last for 2-3 years.



API diction

VENOM HYPERSENSITIVITY

A condition in which a person, if stung, is likely to experience an anaphylactic shock. A person with this condition should carry an emergency insect sting kit at all times during warm weather

VIRGIN QUEEN

An unmated queen bee

WARMING CABINET

An insulated box or room heated to liquefy honey.

WASP

A close relative of honey bees, usually in the family Vespidae; they are carnivorous, some species preying on bees (see also, Hornet).

WAX

See Beeswax.

WAX GLANDS

The eight glands located on the last 4 visible, ventral abdominal segments of young worker bees; they secrete beeswax droplets.

WAX MOTHS

Usually refers to the Greater wax moth, *Galleria mellonella* whose larvae bore through and destroy honeycomb as they eat out its impurities.

WAX SCALE

A drop of liquid beeswax that hardens into a scale upon contact with air; in this form it is shaped into comb.

WAX TUBE FASTENER

A metal tube for applying a fine stream of melted wax to secure a sheet of foundation to an un-grooved frame.

WIND POLLINATED

Plants whose flowers manufacture light pollen (and usually no nectar) which is released into the air to fall by chance on a receptive stigma; examples include the grasses (corn, oats) and conifers (pines).

WINDBREAKS

Specially constructed, or naturally occurring barriers to reduce the force of the (winter) winds on a beehive.

WINTER CLUSTER

A tight ball of bees within the hive to generate heat; forms when outside temperature falls below 57° F.

WINTER HARDINESS

The ability of some strains of honeybees to survive long winters by frugal use of stored honey.

WIRE, FRAME

Thin 28# wire used to reinforce foundation destined for the broodnest or honey extractor.

WIRE CONE ESCAPE

A one-way cone formed by window screen mesh used to direct bees from a house or tree into a temporary hive.

WORKER BEES

Infertile female bee whose reproductive organs are only partially developed, responsible for carrying out all the routine of the colony.

WORKER COMB

Comb measuring about five cells to the inch, in which workers are reared and honey and pollen are stored.

Pledge to save the honeybees today,



if you want a beautiful world tomorrow

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