Table of Contents

President’s Greeting
First Hewanorra National Honey Show – St. Lucia
Update on the South-South Apiculture Project – Trinidad and Tobago
Agri-Christmas Night Market in St. Kitts
Apicola National Training Plan in the Dominican Republic
Local beekeepers to benefit from new project to develop Apiculture industry in Samoa
Beekeeping from my perspective – Antigua
Guyana Apicultural Society (GAS) Grand Honey Show
Small-scale queen rearing – Uniter Kingdom
BES-Net Stingless bee survey – Trinidad and Tobago

Cover photo courtesy Richard Matthias
Newsletter formatting Richard Matthias
Presidents Greeting
Welcome to ACBO buzz.

The holidays are a great time to be with family and friends, but I’m always a little sad when the festivities are over. I didn’t have much time to prolong the fun or to put away decorations because we’re jumping right into a honey flow, and several regional projects. Most importantly preparations are well underway for the 11th Caribbean Beekeepers Congress to be held in Saint Vincent & The Grenadines in September 2022.

It has been two very long years since we have seen each other, and I’m sure we will have a lot of catching up to do! I predict there will be long conversations with welcome cocktails, all focused on the bee business. A great way to meet new and old friends, ask questions, compare beekeeping notes, and tell your best bee jokes!

I am confident the Team in SVG will have an excellent agenda prepared for all of us, with a great selection of keynote speakers, technical papers, and possibly a Regional Honey Show. This is also a great time for individual respective member organizations to start to compile your country reports and technical papers you wish to share.

This has been a great year for pollinators, and bees by extension. We have seen several initiatives undertake across the Caribbean to support apiculture and improve livelihoods. Organizations, such as GEF SGP UNDP, BES Net, IICA, FAO, Darwin Plus Funding Scheme, have all contributed to improving livelihoods, the plight of pollinators and our biodiversity.

As the adventures of a new year are already upon us, I would like to thank my fellow ACBO Executive Members, VP Mr. Gladstone Solomon, Treasurer Mr. Mohammed Halim, Past President Mr. Aubrey Roberts, Secretary Ms. Mylene Stedman and Assistant Secretary/Treasurer, Mr. Diana Spacelle Harry, without this great team the work of the ACBO would be that much harder. I would like to thank Mr. Giles Romulus of GEF SGP UNDP (Saint Lucia) for all the work he has done in Saint Lucia to help expand the apiculture sector in Saint Lucia. Thanks to Mr. Gregg Rawlins, Brent Theophile IICA (OECS), Mr. Kurt Delice IICA (SUR) and Craig Thomas IICA (ANT) for all the work their organization have contributed to apiculture in the Region. Dr. Sharda Mahabir GEF SGP UNDP (Trinidad & Tobago) and her team of beekeepers in the Brasso Seco. Mrs. Natalya Lawrence GEF SGP UNDP (Antigua & Barbuda), Jermaine Scotland, President - Antigua Beekeepers Cooperative, Brent Georges (MoA). Mrs. Farah Mukhida of the Anguilla National Trust and her Team of Eco Warriors. Finally, all the GEF SGP UNDP National Coordinators and the respective National Committees for supporting the South / South Apiculture and Biodiversity Project.

In closing I would like to thank all the beekeeping organizations across the Region and Internationally for their support, and kindness. See you all in Saint Vincent & The Grenadines!

Richard Matthias
ACBO President
The 1st Hewanorra National Honey Show was held at the Castries Town Hall on the 9th & 10th of December, 2021. The show represented the culmination of the 2020/2021 GEF SGP UNDP “Peoples Knowledge Fair”, which began on November 22nd 2020, at the Financial Center with an exemplary listing of guest speakers from the field of Apiculture: Dr. Nicola Bradbear (President of Apimondia’s Scientific Commission for Beekeeping for Rural Development), Jenifer Holm (Co-chair of Slow Food Gold & Treasure Coast, USA) and Mr. Aubrey Roberts (President Association of Caribbean Beekeeper Organizations). Mr. Jose Louise of Indian Bees and Mr. Allen Shaji of Leopard Tech Ltd. launched the Caribbean’s first hive app, which was developed to support regional beekeepers with hive management. His Excellency Mr. Arun Kumar Sahu (Indian High Commissioner), brought greetings and goodwill from India to mark this special occasion.

During the last two years, despite the limitations of COVID-19, Iyanola Apiculture Collective (IAC) and the ACBO have been working with local beekeepers, building their capacity to participate in a honey show within the region. It is unclear, but this may be the first honey show within the region within the last 7 years.

As part of the build up to the event, The IAC completed a three-day lecture series at their headquarters at Cas del Vega, Vigie. It started with an innovative workshop conducted by Head Judge Sue Carter, which provided entrants with key information on preparing entries for the show. Other important offerings included queen rearing, bee nutrition and Varroa mite management hosted by Mr. & Mrs. Repka, John Fredrick, Aluen CAP and Richard Matthias. The lecture series had local and regional attendance, reflecting the strong interest in apiculture across the Caribbean. Links to the audio recording and presentations can be found on the IAC’s YouTube channel and website.
This first honey show was a resounding success with 81 entries from 28 entrants in competition classes for extracted and comb honey, wax, photography, and confectionery / cooking.

The Honey Show was very competitive, with entrants from across the country. The three biggest winners from the competition were Vincent “JEG” Clarke, Donson Stainly and Natalie Alphonse. JEG as he is known by his friends claimed 1st place Light Amber and 1st place Chunk Honey, 4th place Medium Amber and 6th place Wax Block, all of which contributed to him winning the Ministers Cup for Best in Show (Honey & Wax Classes).

Natalie Alphonse quietly picked up the Most Points in Show, by placing 2nd Medium Amber, 2nd Photography, 4th Honey Cake, 4th Baked Goods and 4th Commercial Product, a super effort, and a Beekeeper to lookout for closely, at the next honey show.

Young Donson Stainly performed well within the competition and won 1st place Commercial Product along with a Certificate of merit from the Judges.
One of the key highlights of the event was the simultaneous exhibition of GEF SGP grantees consisting of an array of honey producers, chocolatiers, Fisher Folk, sea moss producers, baked goods and cosmetic products available for sale. This gave the public an opportunity to see firsthand some of the success stories the GEF SGP program has helped to cultivate over the years.

The Hewannora National Honey Show could not have happened without the support of event title sponsor GEF SGP UNDP (St. Lucia), and special debt of gratitude is owed to their National Coordinator Mr. Giles Romulus. Alongside the efforts of GEF SGP there was a collaborating team of sponsors and...
volunteers Ministry of Agriculture – Hon. Minister. Prosper, Mr. Sidney (MoA Communications), Iyanola Apiculture Collective (IAC), Caribbean Youth Environmental Network (CYEN), SLHTA – Mr. Noorani Azeez, Castries City Council (CCC) - Mayor Geraldine Lendor-Gabriel, IICA – Mr. Gregg Rawlins, Brent Theophile, SLUNCF – Mr. Craig Thomas, Massy Stores – Mr. Dunston Demille, Cox & Co. - Mrs. Siobhan Beaubrun, MBC TV Andrew “Yardie” Haynes, JE Bergasse “Copy Center” – Jennifer Bak and The Trophy Center – Mrs. Lorde.

To the event volunteers’ special thanks is extended starting with our Judges Ms. Sue Carter, Mr. Bill Fisher, Chef Orlando, Show Secretary – Ms. Samantha Justin, Community Outreach Officer – Dalia Carobere, Show Stewards – Creselma Hippolyte and Shernel McDonald, and at the GEF SGP Office Ms. Stephanie Peter.
## Honey Show Results

<table>
<thead>
<tr>
<th>EH 1 - Light Amber</th>
<th>EH 2 - Medium Amber</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 96 - Vincent Clarke</td>
<td>1st 78 - Nicholson Lucien</td>
</tr>
<tr>
<td>2nd 94 - Zial Williams</td>
<td>2nd 80 - Natalie Alphonse</td>
</tr>
<tr>
<td>3rd 84 - Mark Remy</td>
<td>3rd 90 - Narcissus Edwin</td>
</tr>
<tr>
<td></td>
<td>4th 244 - Vincent Clarke</td>
</tr>
<tr>
<td></td>
<td>5th 87 - Jessie Fredrick</td>
</tr>
<tr>
<td></td>
<td>6th 105 - Julia Popo</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>EH 3 - Dark Amber</th>
<th>CH 4 - Chunk Honey</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 240 - Donson Stainly</td>
<td>1st 1502 - Vincent Clarke</td>
</tr>
<tr>
<td></td>
<td>2nd 1493 - Jessie Fredrick</td>
</tr>
<tr>
<td></td>
<td>3rd 1482 - John Fredrick</td>
</tr>
<tr>
<td></td>
<td>4th 1515 - Windy Jamerson</td>
</tr>
<tr>
<td></td>
<td>5th 1492 - Mathius Carobere</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>W05 - Wax Block</th>
<th>W06 - Wax Candle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 371 - John Fredrick</td>
<td>No qualifying entries.</td>
</tr>
<tr>
<td>2nd 406 - Damian Montoute</td>
<td></td>
</tr>
<tr>
<td>3rd 387 - Jayden Fredrick</td>
<td></td>
</tr>
<tr>
<td>4th 375 - Wendy Jamerson</td>
<td></td>
</tr>
<tr>
<td>5th 397 - Zebai Estaphane</td>
<td></td>
</tr>
<tr>
<td>6th 392 - Vincent Clarke</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>A07 - Art</th>
<th>A08 - Junior Art</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 451 - Care Anse La Raye</td>
<td>No qualifying entries.</td>
</tr>
<tr>
<td>2nd 476 - Canaries Honey Prod.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>P09 - Photography</th>
<th>HC10 - Honey Cake</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 1331 - Kirk Elliot</td>
<td>1st 11 - Care Anse La Raye</td>
</tr>
<tr>
<td>2nd 561 - Natalie Alphonse</td>
<td>2nd 9 - Carmen Nurse</td>
</tr>
<tr>
<td>3rd 581 - Donson Stainly</td>
<td>3rd 113 - Priscilla Phillip-Khodra</td>
</tr>
<tr>
<td>4th 587 - Canaries Honey Prod.</td>
<td>4th 6 - Natalie Alphonse</td>
</tr>
<tr>
<td>5th 569 - Uraline Alphonse</td>
<td>5th 128 - Catherine Edmund</td>
</tr>
<tr>
<td></td>
<td>6th 32 - Canaries Honey Prod.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>BG11 - Baked Goods</th>
<th>BS13 - Commercial Product</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st 603 - Care Anse La Raye</td>
<td>1st 1284 - Donson Stainly</td>
</tr>
<tr>
<td>2nd 601 - Carmen Nurse</td>
<td>2nd 1262 - Nicholson Lucien</td>
</tr>
<tr>
<td>3rd 624 - Canaries Honey Prod.</td>
<td>3rd 1260 - John Frederick</td>
</tr>
<tr>
<td>4th 598 - Natalie Alphonse</td>
<td>4th 1264 - Natalie Alphonse</td>
</tr>
<tr>
<td>5th 602 - Mark Remy</td>
<td>5th 1268 - Mark Remy</td>
</tr>
</tbody>
</table>
Update on the South-South Apiculture Project:

Great news for bee enthusiasts!

In August 2021, Master Beekeeper Richard Matthias, from St. Lucia, visited Trinidad and Tobago to begin his training with the Brasso Seco Morne La Croix Farmers. He spent five (5) days in the misty mountains of Brasso Seco, evaluating their hives and advising and guiding the beekeepers in addressing the needs of their bees, depending on seasonal changes.

An important inclusion to his visit was the testing of varroa mite at the four visited apiaries. Participants were able to learn first-hand how to test for this important and debilitating disease, as well as how to sustainably, organically treat for the disease.

Mr. Matthias will be back in Trinidad and Tobago in early 2022 to complete training in queen rearing and assist the Brasso Seco Farmers Group to develop their queen rearing lab. It is hoped that through this exchange, Brasso Seco Farmers will inculcate their learning and help to expand and develop their apiaries to produce more honey and other hive products.

This Brasso Seco Beekeeping project is actually part of a regional apiculture project involving seven islands (Dominica, Grenada, St. Kitts and Nevis, St. Vincent and the Grenadines, St. Lucia, Samoa and Trinidad and Tobago). As part of this project, each country will receive online theoretical training in beekeeping; in-person practical training in beekeeping; twenty (20) complete hives and access to the Caribbean’s first beekeeping app.

This trip represented the first of his field visits across the islands, which is part of the regional project. At least ten (10) members of the Brasso Seco Farmers Group participated in the online beekeeping course, which consists of seventeen (17) modules: ten (10) theoretical and seven (7) practical sessions.

The online beekeeping course is being rolled out online via the link: https://iyanolaapiculture.org/training. Each theoretical module has its own web page which contains a video as well as a summary of the video content. There is also a short quiz that the
participant can take to test their learning. The pages are still in development and we hope to have a formal launch of this early next year.

This online beekeeping course differs from other offerings because it contains a module on occupational health and safety as well as gender and social inclusion. The information contained is not only relevant to beekeepers but also to secondary school students, especially those pursuing Integrated Agriculture and Environmental Sciences as well as University students pursuing Natural or Life Science Courses.

*Picture 3*: *Brandon Hernandez, Brasso Seco Beekeepers and Richard Matthias pose with a healthy frame of bees after an inspection and treatment.*

The regional apiculture project will be completed in June 2022. Until then, Mr. Matthias will be visiting all of the other countries in order to assist them as well in developing their apiculture skills and sector. It is hoped that at the end of this project that all the participating countries can meet, possibly at the next Association of Caribbean Beekeeping Organizations (ACBO) meetings in order to share their experiences and learning as they develop the apiculture sector together.

*
Agri-Christmas Night Market in St Kitts: Written by Dr. J. Guishard-Pine

The newly appointed Minister for Agriculture, the Honourable Alexis Jeffers has been pro-active in promoting local produce in a wider range of contexts. This Christmas marked the 1st anniversary of his night agri-market. Established to occur in parallel with other cultural events such as Independence Day, Heroes Day…etc, the night market also aims to bring whole families out to create a lively atmosphere in the island’s largest market. On this occasion, they had carnival troupes performing for the shoppers.

This year's event was held under the distinguished patronage of the Governor General His Excellency Sir S.W. Tapley Seaton GCMG, CVO, QC,JP, LL.D.

Throughout the month of December, the Ministry promoted different local produce that can make our Christmas feasts more exciting!

Whether it's roasted butternut squash soup, creamy mashed butternut squash, stuffed squash with wild rice, butternut squash mac and cheese, salad, bread or lasagna, you can find dozens of ways to incorporate this healthy vitamin and antioxidant loaded vegetable into your Christmas recipes.
Another Christmas favourite of course is sorrel - officially known as the **Roselle** (*Hibiscus sabdariffa*) is a species of flowering plant in the genus *Hibiscus* that is native to West Africa. In the 16th and early 17th centuries it was spread to the West Indies and Asia, respectively, where it has since become naturalized in many places. With his hives strategically placed on his farm, our interim President Mr Monroe Tweed has been able to provide an abundant supply during this Christmas season.

Glossy, organic sorrel produced by President of the St Kitts Beekeepers Co-op, Mr Monroe Tweed

And of course, it would not be complete without local honey! Although not in plentiful supply at this time of the year, our beekeepers did not disappoint and there was sufficient local honey for sale.

Locally produced honey

Last, but not least, the St Kitts Beekeepers Co-op is looking forward to a very productive 2022. We are in the process of electing a new Executive and also many of us are part of the Regional Beekeeping Project sponsored by the Global Environment Facility (GEF). Therefore this time next year, we hope to be able to share an increasing number of exciting developments across our Federation with the ACBO readership. Seasons Greetings and an abundance of happiness to you all for the new year!
APICOLA NATIONAL TRAINING PLAN IN THE DOMINICAN REPUBLIC

The Plan is based on the capabilities of the team of the Dominican Beekeeping Network (REDAPI) reinforced by researchers from the National Beekeeping Program of the National Institute of Agricultural Technology (INTA-PROAPI) of Argentina based on the experience accumulated in the framework of the Latin American and Caribbean Network for the Development of Beekeeping and Family Farming (REDLAC-AF): https://www.redlac-af.org) after 25 years of working together.

Through the financial support of OXFAM International within the framework of the Haiti-Dominican Republic Binational Cooperation Program - Informal Trade Development Component, it sought to combine the virtual capacities available in REDLAC from the Open Beekeeping Center with the experience of the Dominican team in Field Schools (ECAs) developed with beekeepers in all provinces. In this way, support is achieved for the Network of Territorial Technicians that the Field Schools teach in a more economical and efficient way.

The strategy implemented allows combining the scientific knowledge of a powerful research and development team (25 researchers from REDAPI and INTA – PROAPI participated) with the experience of the beekeepers themselves who learn by doing. We worked under the umbrella of Good Practices In The Spirits with the participation of government institutions: Directorates of Livestock and Agri food Safety of the Ministry of Agriculture and The Dominican Institute of Agricultural and Forestry Research (IDIAF); and non-governmental: Center for Agricultural and Forestry Development, Inc. (CEDAF) and Dominican Environmental Consortium (CAD) developing the following topics: Learning to work in the virtual classroom, Field Schools, Good Beekeeping Practices, Environment and Nutrition, Health, Productive management of the apiary adapted to climate change, Good manufacturing practices in extraction and processing rooms and Diversification.

In Field Schools, technicians and facilitators help beekeepers to "learn by doing"

27 sessions of Field Schools were held throughout the national territory, in which around 175 beekeepers and technicians participated.

The plan aims to develop the scientific foundations in virtual mode by convening a highly trained team that supports the territorial technicians so that they, through the ECA's work in the territories the implementation of a technological path adapted to the conditions of each region in a context of climate change. The challenge is to achieve a virtual work team that allows feedback from the experiences of beekeepers, with the participation of technicians as chains of transmission between researchers/specialists and territories.

Within the Open Chair of Beekeeping / Virtual Veterinarians (INTA Agreement – UNICEN https://virtual.vet.unicen.edu.ar/course/index.php?categoryid=12) the "Dominican Campus
(Figure 1) was developed with a Secretariat where the team responsible for the project worked on all aspects related to planning and execution, elaboration of protocols for ECA’s, etc.

Within the Dominican Campus, the classroom "Continua Training of Dominican Technicians and Facilitators" was created, where 82 technicians from institutions that offer support to beekeeping and members of the REDAPI and INTA PROAPI team involved in virtual training were enrolled; in which synchronous and asynchronous activities were developed.

All the seminars were recorded in the classroom for asynchronous consultation and for each one a forum for analysis and debate was implemented.

At the end of the activities planned for 2021, a survey was implemented for the Technicians/Facilitators and another for the Beekeepers that showed a high level of conformity on the part of all the participants. All expressed their interest in continuing to work with the modality implemented.

Undoubtedly, the combination of virtuality with face-to-face training for beekeepers through Field Schools generates an important synergy in the knowledge management process and shows great potential in the process of territorial development (especially in the case of territories that do not have a critical mass in research and knowledge generation). The strategy allowed progress in the consolidation of an international team, highly qualified, at a reasonable cost, with the capture of experience and the protagonism of those involved in the territory.

The capacities and learnings generated can make it possible to respond to requests for assistance from other countries in Central America and the Caribbean.
PLAN NACIONAL DE FORMACIÓN APICOLA EN REPUBLICA DOMINICANA

El Plan se basa en las capacidades del equipo de la Red Apícola Dominicana (REDAPI) reforzado por investigadores del Programa Apícola Nacional del Instituto Nacional de Tecnología Agropecuaria (INTA-PROAPI) de argentina en base a la experiencia acumulada en el marco de la Red Latinoamericana y del Caribe para el Desarrollo de la Apicultura y Agricultura Familiar (REDLAC-AF: https://www.redlac-af.org) tras 25 años de trabajo conjunto.

Mediante el apoyo financiero de OXFAM International en el marco del Programa de Cooperación Binacional Haití-República Dominicana - Componente de Desarrollo del Comercio Informal, se buscó combinar las capacidades virtuales disponibles en REDLAC desde la Cátedra Abierta de Apicultura con la experiencia del equipo dominicano en Escuelas de Campo (ECAs) desarrolladas con apicultores en todas las provincias. De ese modo se logra el apoyo a la Red de Técnicos Territoriales que imparten las Escuelas de Campo de un modo más económico y eficiente.

La estrategia implementada permite combinar el conocimiento científico de un potente equipo de investigación y desarrollo (participaron 25 investigadores de la REDAPI y el INTA – PROAPI) con la experiencia de los propios apicultores que aprenden haciendo. Se trabajó bajo el paraguas de las Buenas Practicas Apícolas con la participación de instituciones gubernamentales: Direcciones de Ganadería e Inocuidad Agroalimentaria del Ministerio de Agricultura e Instituto Dominicano de Investigaciones Agropecuarias y Forestales (IDIAF); y no gubernamentales: Centro para el Desarrollo Agropecuario y Forestal, Inc. (CEDAF) y Consorcio Ambiental Dominicano (CAD) desarrollando los siguientes temas: Aprendiendo a trabajar en el aula virtual, Escuelas de Campo, Buenas Practicas Apícolas, Ambiente y Nutrición, Sanidad, Manejo productivo del apiario adaptado al cambio climático, Buenas prácticas de manufactura en salas de extracción y procesado y Diversificación.

En las Escuelas de Campo, técnicos y facilitadores ayudan a los apicultores a “aprender haciendo”

Se desarrollaron 27 sesiones de Escuelas de Campo en todo el territorio nacional, en las que participaron alrededor de 175 apicultores y técnicos.

El plan pretende desarrollar los fundamentos científicos en modo virtual convocando a un equipo altamente capacitado que apoya a los técnicos territoriales para que estos, a través de las ECA’s trabajen en los territorios la puesta en práctica de un sendero tecnológico adaptado a las condiciones de cada región en un contexto de cambio climático. El desafío consiste en lograr un equipo de trabajo virtual que permita la retroalimentación a partir de las experiencias de los apicultores, con la participación de los técnicos como cadenas de transmisión entre los investigadores/especialistas y los territorios.

Dominicana (Figura 1) con una Secretaría donde trabajó el equipo responsable del proyecto todos los aspectos relacionados a la planificación y ejecución, elaboración de los protocolos para las ECA’s, etc.

Figura 1. - Campus Dominicana en Veterinarias Virtual de la Universidad Nacional del Centro.

Dentro del Campus Dominicana se creó el aula “Formación Continua de Técnicos y Facilitadores Dominicana”, donde se matricularon 82 técnicos de instituciones que ofrecen apoyo a la apicultura e integrantes del equipo de la REDAPI e INTA PROAPI involucrados en la capacitación virtual; en la que se desarrollaron actividades sincrónicas y asincrónicas.

Figura 2. Captura de pantalla del Seminario sobre Diversificación.

Todos los seminarios quedaron grabados en el aula para su consulta asincrónica y para cada uno se implementó un foro de análisis y debate.

Al final de las actividades previstas para el 2021 se implementó una encuesta para los Técnicos/Facilitadores y otra para los Apicultores que mostró un alto nivel de conformidad de parte de todos los participantes. Todos manifestaron su interés de continuar trabajando con la modalidad implementada.

Sin lugar a dudas la combinación de virtualidad con la capacitación presencial a los apicultores a través de las Escuelas de Campo, genera una importante sinergia en el proceso de gestión del conocimiento y muestra un gran potencial en el proceso de desarrollo territorial (sobre todo en el caso de territorios que no cuentan con masa crítica en investigación y generación de conocimiento). La estrategia permitió avanzar en la consolidación de un equipo internacional,
altamente calificado, a un costo razonable, con la captura de experiencia y el protagonismo de los propios involucrados en el territorio.

Las capacidades y aprendizajes generados pueden permitir responder a demandas de asistencia de otros países de Centro América y El Caribe.
Apia, Samoa – Local beekeepers, or honey farmers, will soon get the chance to take their operations to the next level, under the new Apiculture Strategic Project.

The United Nations Development Programme (UNDP) Global Environment Facility (GEF) Small Grants Programme (SGP) has secured new funding of US $50,000 to implement this project in recognition of apiculture, or honey farming, as a catalyst for sustainable development in small islands developing states or SIDS.

SGP will work with local honey farmers in close collaboration with the Ministry of Agriculture and Fisheries (MAF) for this project. The Ministry said there are currently about 41 active beekeepers in Samoa, both private and commercial.

“Based on recent data, there is a market value of $1.1 million Tala in beekeeping, catering to the local market. The global natural honey market size was valued at $2.26 billion US dollars in 2018. In saying this, there is potential that upon perfecting and focusing on beekeeping, we can be in a position to export our honey products to overseas markets, although our current honey production cannot satisfy our own consumer demand,” said Tilafono David Hunter, Chief Executive Officer of MAF.

A workshop was held today for interested beekeepers on how they can access this fund under the new project.

“Today’s workshop shows how much enthusiasm and support is out there and how far Samoa has to go to revitalize our honey production industry. For many years, the beekeeping industry was managed by a small group. We hope with the community-based requirements of this project, focusing on youth and women, that we can broaden the spectrum of beekeepers. Current data says that more than 50% of beekeepers in Samoa are over the age of 55, and that beekeeping is not taught at any academic institution (specifically agricultural studies). This funding is an opportunity to create a stepping stone to bigger and better production, from community based to industry. The more beekeepers there are in Samoa, the better. We are blessed with a unique situation where we are relatively disease-free and do not suffer from CCD. It’s so important that we create a new generation of relatively disease-free and non-CCD beekeepers who not only love bees and all they produce, but see how vital they are to our environment and our livelihoods,” said Papalii Mele Maualaivao, a beekeeper, and Country Programme Manager for UN Women.

The Apiculture Strategic Project is an international one involving six countries from the Caribbean – Dominica, Grenada, Saint Kitts & Nevis, Saint Lucia, Saint Vincent & the Grenadines, Trinidad and Tobago, and Samoa – the only country from the Pacific.

The multi-country project aims to establish a sustainable apiculture industry in Saint Lucia and identify and develop clear pathways towards the development of the same in the other countries including Samoa.

“Beeckeeping is a vital component of agriculture and environmental protection. While bees were introduced to Samoa some 100 years ago, the industry went from thriving, to barely surviving. We need to create a community of beekeeping which goes beyond just industry needs and focuses on education, mentoring, and community-based initiatives. We need beekeeping clubs, beekeepers’ associations, and supporting academic institutions to sustain the knowledge in country. Currently, only 35% of beekeepers are women, that number can increase dramatically if the knowledge and training is made available to everyone, from urban enthusiasts to rural committees,” said Shelley Burich of Vaoala Filifilia Iosefa.
Beekeeping from My Perspective

Written by S. Natalya Lawrence, National Coordinator, GEF SGP Antigua & Barbuda

Coming from a background like mine, I appreciate every living thing, except maybe roaches. I see how we are all interconnected, and interdependent. I knew that bees support conservation and support food security. However, to see bees hard at work brings a new level of appreciation for these tiny, yet powerful creature.

The Antigua Beekeepers Cooperative implemented their GEF Small Grants Funded project in 2021. Their project was heavily supported by the Ministry of Agriculture, Fisheries and Barbuda Affairs (MoA) and the Inter-American Institute for the Cooperation on Agriculture (IICA).

In November 2021, Master Beekeeper, Mr. Richard Matthias, of Iyanola Apiculture Collective, was flown in to Antigua to work with the local beekeepers, giving them training on beekeeping best practices, review the health of the hives, and to verify the feasibility of rearing queens.

Tagging along on the mission to review our local hives, we visited Mr. Langley’s apiary first. I followed a seasoned beekeeper into the apiary, taking cues from his lead, sans protective gear.

The bees were beautiful. I learnt to identify drones, how to mix the frames for maximum productivity of the hives, and how to bounce back from a sting from an agitated bee that got stuck in my hair.
On to apiary two, at Scottie’s place, and I was warned that protective gear is a must. Those bees were quite aggressive, but the suit kept me safe. While the unnerving sounds of angry bees filled the air, I watched safely, in my suit, as seasoned beekeepers rearranged frames and bee-boxes, and non-chalantly pulled out stinger after stinger from their non-protected hands, as they worked.

When it was obvious that the bees were not happy to settle down, we decided to take a break before the next apiary visit. We walked up a hill and down another, closely trailed by a few dozen bees. As we waited for refreshments, and overcome by an overwhelming thirst, I cautiously took off my protective bonnet, only to be stung immediately. Strike two, and that, I swore, would be the last.

Hive Inspection at Scottie’s Apiary
The apiaries at BBC were out in the open field. By then, I had learnt to distinguish a hive with a queen in it, to one that had no queen present, by simply listening to the hive. I had learnt to test for Varroa Mites, a mite than can have serious negative implications on the health and productivity of a hive. By the end of the day, I felt like a beekeeper myself. I could immediately decide if box had too many frames, if the frames could be constructed in a more efficient way, or if the frames needed to be shifted. The next day would be Barbuda, and let’s see how I would do!

The trip to Barbuda, our sister isle, was a quick 15-minute hop. It became amazing after I stopped holding my breath, maybe by minute three. I distinctly remember the moment I stopped breathing, when they closed the door to the tiny little aircraft, I couldn’t do this... We tried to book the entire 7-
seater, but one Barbudan was able to snag a seat, bumping off one of our team to a later flight. He quickly became fast friends with our team.

We landed and literally took off, to our first hive. O’Brien’s apiary was well-cared for. He was a relatively new beekeeper, who took pride in caring for his bees. He was already producing honey, and boy oh boy, what a distinct flavor that emanated from his honey. It was light, flowery, fragrant. His boxes were in good condition, and unlike the case in Antigua, no varroa mites were detected in his hives. It’s worth mentioning here that Barbudans are so protective of their bees, that we had to take only new or recently washed protective gear to Barbuda.

![Figure 5: Hive inspections at O’Brien’s apiary, pictures by N. Lawrence.](image)

Working in those suits under a hot tropical sun is not easy. I remember feeling safe enough, and thirsty enough that I took my gloves off. Moments later, I was running for my life as O’Brien’s bees found my unprotected hands and I was determined to not strike three with beestings, particularly because I was already suffering with a swollen forehead. I shouted to a Thaddeus, a member of our team, to grab my camera bag as I ran away. Thaddeus, shouted back, not right now, as I later realized that he was running too! That was the last that I saw of O’Brien’s bees that day, but my hands were safe! Later in the day, we visited Barrett’s bees. His was the only apiary that had survived the ravages of Major Hurricane Irma in 2017. Barrett admitted that he had not checked on his bees in a few weeks, and when we checked, there was a surplus of honey. Barrett’s honey was also delicious but a stark contrast from the flavour of O’Brien’s and they apiaries were in close proximity to each other.

While a highly successful, virtual beekeeping training and meeting took place in Antigua the evening before, an in-person meeting took place at the Fisheries Complex in Barbuda. The meeting began at 5pm, but participants were so engaged, that meeting did not conclude until 9:30 pm.

Tired, yet exhilarated, I went to bed in anticipation of another day with the bees. At daybreak, I set off with the team to Mr. Mussington’s apiary. Now, Mr. Mussington is a super intelligent man with many admirable abilities. He is a marine biologist, the principal at the only secondary school on Barbuda, an enthusiastic conservationist, an avid birder, and now, I learnt, a beekeeper. Mr. Mussington boasted the night before about his extremely flavourful honey. I was not to be disappointed!

At his apiary, we could see the love and care for the bees, and the diligent maintenance of his hives. We were able to do a varroa mite test here, just like the other sites visited in Barbuda, and as was expected, the test came back clean. A victory for Barbuda, a presumably varroa mite-free habitat, perfect for
queen-rearing. Here, we also piloted the use of QR codes to manage hives. A hive app was downloaded, and Mr. Mussington would be able to monitor his hives without having to disturb his bees too often. In the near future, the use of thermometers and monitors will aid in detecting temperature and behavior change in hives before a swarm will take place.

The rest of the time on Barbuda was spent investigating queen-rearing sites and foraging grounds for bees. I remember seeing the pleased expression on Richard’s face when we were on Barbuda. Yes, he fell in love with our country through our bees.

It was time to leave Barbuda, and I felt energized and excited. I had just lived an experience, I never dreamt to have, and no, there was never a strike three from them bees; I had learnt my lesson! By the time we were heading back, the team was discussing how I could be set up with 4 boxes in my backyard. It was enticing. Stay tuned!
The Guyana Apicultural Society was founded in 2010 to provide opportunities for beekeepers to meet and address common challenges for the advancement of the beekeeping subsector as it relates to marketing, knowledge sharing and resource mobilization. This year the Grand Honey show which was first held on April 7th 2012 was presented in New Amsterdam, the capital town of the East Berbice Corentyne Region of Guyana for the first time. The venue was chosen to support the marketing of honey of new Beekeepers from Berbice that were in business over the last two years from the Sanvoort Village on the Canje River. The event also raised awareness of the importance of bees to agriculture. The show was set up just outside the New Amsterdam Municipal Market. The products on display included honey, pure beeswax blocks, a variety of soaps, Basic elixir, Hair food, body butter and wax sheets. There were also beekeeping supplies such as Bee suits, smokers, Langstroth hive, brushes, veils, gloves and hats.

A transparent nucleus hive was on display to give visitors a look inside and active hive. The visitors were keen to learn about bee removal services and were issued with business cards for future reference. This was an important service as in the recent past six persons died in this region as a result of being stung by bees disturbed in the wild and in a house.

During the event there was a live facebook interview conducted by Mr. Linden Stewart who interviewed the exhibitors. This live tour of the
show had more than 200 views as it was being broadcasted.

The exhibitors were Mr. Ryan Sinclair, Ms. Sheon Chisholm, Ms. Tiffany Maison, Mr. Neil Grant, Mr. Linden Stuart and Mr. Aubrey Roberts. The sales were very encouraging and the exposure was great.

Ms. Sheon Chisholm interacting with a customer.
Small Scale Queen Rearing

by Rudy Repka, Sidcup, Kent BKA

Queen rearing is easy, interesting and a rewarding beekeeping activity. Unlike queen breeding, which I will not cover here, it does not require any particular knowledge of genetics. There are several methods for queen rearing, each with some modifications, but all pursue the same principle: to follow bees’ instincts and, with a measure of control, create the conditions which will encourage your selected colony to favour its reproduction.

Timing for queen rearing

It is an advantage to use favourable climatic conditions in the late spring, which naturally stimulate colony reproduction. In the UK, the best time to start queen rearing is from mid-May to mid-June. With luck, you may catch the spring nectar flow, which will help feed your developing queen larvae. A month later your newly mated queens will start laying, and with the help of an early summer flow, establish their little colonies thus allowing you to assess their qualities soon after. If you do it a little earlier or much later, it can be something of a challenge.

Rearing one’s replacement queens allows the beekeeper to have a real influence on the selection of desired over undesirable colony qualities. This is the basis of good bee management and enables the beekeeper to replace at will the queens which are heading his or her colonies. With small adjustments the technique is suitable for rearing any number of mated queens. The limiting factor is the number of support colonies you wish to maintain. One large colony, dedicated to queen rearing, can, on its own, raise a batch of perhaps twelve to fifteen mated queens. Such a colony will easily nurture forty or more grafted larvae, but you will need equipment and bees for populating the mating nucleus hives. For scaling up your queen rearing to raise many more queens you may need several large, prosperous support colonies. You will also need to provide an adequate supply of fresh frames with emerging brood and young bees to your main queen-rearing colony, so that it can nurture further batches of fresh grafts. These can be inserted every five days. The previous batch of sealed queen cells can be moved on to other incubator colonies. If you do not wish to run incubator colonies, you can insert a fresh batch of grafted cells into your queen-rearing colony every ten days.

Drone selection

Although I am not dealing with queen breeding here it is still worthwhile to consider the drones your queens will mate with. They will mate with any fit drones in the drone congregation area, but you can, if you choose, add to this mix a proportion of your own drones possessing the qualities you want. If you wish, try rearing your own drones and you will notice a clear influence on the quality of your queens; give your drones a head start, about a month before you commence with queen rearing. Drones take longer to develop at the larval stage, and even longer to reach sexual maturity after emerging, so you need to consider starting this part of your queen-rearing process in late March, weather permitting.

Surprisingly, rearing of your sought-after and fit drones, with viable sperm, can be more difficult than anticipated. Select a suitable colony, whose bees have the required qualities and insert a frame or two, fitted with drone base foundation. Feed this colony well with both syrup and pollen or pollen substitute. Once drawn out and laid up with eggs, the frames can be transferred to other foster colonies to raise the drones. The colonies, which are raising the drones intended to mate with your virgins should not be subjected to any varroa treatments based on pyrethroids, organophosphates or thymol. These acaricides have detrimental effects on sperm viability and on the general fitness of drones.

Larval transfer techniques

There is a variety of larval transfer methods that can be used. It is not strictly essential to learn the simple skill of larval transfer, or ‘grafting’ using a grafting tool, but the technique is very easy to learn, so it is well worth adopting. Queen rearing students, who have never done this before, usually achieve, on their first attempt, 60–75% graft acceptance. If grafting is not for you, perhaps because you may have poor eyesight, for around £70 you can buy a kit from the bee equipment suppliers, which will enable you to do larval transfer without the need for any skill at all. The main drawback of this, apparently easier, method is the need to find and entrap the queen, in the cage supplied with the kit, in your breeding colony. Bees resent having their queen separated from her brood and once freed from her cage they sometimes proceed to supersede her soon after. A sad loss if her progeny has excellent qualities.

The life cycle of an Apis mellifera queen: Crucial timings to know when queen rearing

<table>
<thead>
<tr>
<th>Stage</th>
<th>Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Egg</td>
<td>3 days</td>
</tr>
<tr>
<td>Larva feeding</td>
<td>5 days or slightly less</td>
</tr>
<tr>
<td>Metamorphosis (pupa)</td>
<td>7 days or so</td>
</tr>
<tr>
<td>Emerging</td>
<td>16th day or so, after egg has been laid.</td>
</tr>
<tr>
<td>1st orientation flight</td>
<td>18th day or later</td>
</tr>
<tr>
<td>Earliest mating flight</td>
<td>21st day or later</td>
</tr>
<tr>
<td>More usual mating flights</td>
<td>23rd–28th day or on day 7–12 after emerging</td>
</tr>
<tr>
<td>Mating window closes</td>
<td>32nd day or about 16 days after emerging</td>
</tr>
<tr>
<td>Starts laying</td>
<td>about 2–4 days after mating</td>
</tr>
</tbody>
</table>
The life cycle of honey bee queens

A few of the timings are important when rearing queens, so let us consider some basic facts of the life cycle of the European races of the *Apis mellifera* queen. All are close approximations; the actual time can vary slightly due to race, amount of food, climate and temperature among other reasons. We usually recognise four stages of queen rearing: 1. Graft acceptance or start up; 2. Cell building; 3. Incubation and emergence, and 4. Mating. As amateurs, raising only a few queens, we usually compress these four stages into just two. The first stage comprises acceptance of the graft, cell building and the first three quarters of the incubation period. The last quarter of incubation period, emergence and mating is the second stage. This second stage usually takes place in different and often quite small mating colonies.

A more advanced beekeeper may prefer to divide the process into three stages. Graft acceptance in the first, usually crowded, but small, queenless colony, is the first stage. Cell building plus three quarters of the incubation period, often in a different, prosperous, queen-right colony, is the second stage, and the last quarter of the incubation period, plus emergence and mating in nucleus colonies is the last stage. However, most professional breeders adhere to four separate stages, so let us consider each stage in a little more detail.

Stage 1: Graft acceptance, start up

The start up colony needs to be suitably conditioned and prepared before it will start building queen cells. Bees will start building queen cells under one of three impulses: swarming, emergency or supersedure.

Swarming

If we do not wish to propagate the swarming tendency we should reject the swarming impulse for raising queen cells. However, the conditions in a colony that is making preparation to swarm are perfect for raising queen cells. Removing their queen and destroying all existing queen cells will persuade the bees to raise many queen cells from our donated material. You can use a swarmy colony, but it is essential to destroy all queen cells which the bees will have started from their own larvae about a week after insertion of your grafts.

Emergency

Very soon after losing their queen, whether by accident or by design, bees are willing to start building queen cells. The first larvae they choose in such an emergency can be too old. The subsequent ones will be larvae of the right age. Rendering the whole colony queenless will cause a considerable set-back for the colony. It is better to make up a five or six frame nucleus, ideally with no other very young brood, although very crowded with bees from your out-apiary. If you insert your frame with grafted cells into this fairly small, queenless colony, you can get a large number of queen cells started. These can be transferred the following day and finished in the ‘finishing colony’, in the top brood box of a Demareed, queen-right colony as described in the next paragraph.

Supersedure

Bees which naturally supersede are desirable. This is not under our control although we can simulate supersedure artificially. The queen should be at least one year old, since a younger queen, particularly a current season’s queen, produces too much of the queen substance pheromones for this method to succeed reliably. If we exclude the queen from a part of the hive where there is young brood, the bees will often feel as though the queen is failing and they may (usually, but not always) be willing to build queen cells. Such conditions are easily produced in the upper brood box of a Demareed colony, which is the original vertically split colony concept for swarm control. If bees are not willing to start queen cells, we can achieve their co-operation by temporary confinement. Placing a temporary barrier under the upper brood chamber of the Demareed colony, such as a travelling screen or Snelgrove board or Cloake board, will persuade bees to co-operate and a large number of cells will be accepted. The barrier must be removed and replaced with a queen excluder the following day, once the grafted queen cells have been started. This method has the advantage of inducing the non-swarming strains of bees to raise queens.

How do we recognise that a cell has been accepted and started? In approximately twelve to eighteen hours there appears a newly extended wax collar on each accepted cell. Because grafted eggs are often rejected, we try grafting larvae, which are only about a day old or less. The larvae should be no bigger than 8pt letter c (i.e. c), but preferably, after some practice, larvae no...
bigger than a comma or an apostrophe are better, producing better queens.

**Stage 2: Cell building**  
This is the period from graft acceptance to sealing of the cell. Bees continue feeding the larva and extend, build and complete the cell by sealing it. This is the most important stage, as it is during this short period of a few days that bees decide whether a larva should be born a queen or a worker.

The best grafted queen cells are nursed and built in a very strong, well provisioned, prosperous, queen-right colony, with plenty of young nurse bees, which will generously feed the young, grafted or transferred larvae. I often use a colony, which is very vigorous, healthy, but may not be always the easiest one to live with.

Before we select a suitable colony for the cell building stage, it is worth checking its nosema status. A colony heavily infected with nosema spores may not show any symptoms, however it should be rejected for such a task, as nosema is the vector for the black queen cell virus. The selected colony is usually Demareed, comprising of at least two brood chambers, which are separated by one, but more often by two, honey supers or by a third brood chamber.

**Stage 3: Incubation**  
This is the period from the cell being sealed to the adult virgin emerging. Cells need warmth, humidity and quiescence during this time. Large-scale breeders incubate sealed cells in electric incubators in a similar manner to hens’ eggs, or in specially designated incubator colonies, allowing virgins to emerge into individual little cages. These prevent the first queen to emerge destroying all others in the batch.

As most of us operate on a small scale, it is easier for us, and better for our queens, if the first five or six days of the incubation period during the transformation or metamorphosis are done in the cell building colony and we let our bees manage the temperature and humidity requirements of the sealed queen cells. Freshly sealed cells require a complete quiescence during their first few days of pupation. After this period of quiescence, on day five or six of metamorphosis, or on day nine or ten after grafting, the larval queens’ transformation will be close to completion and the cells are more robust. They can be now carefully be taken out of the cell building colony to be distributed into mating nucs for their emergence and mating. Adherence to these crucial timings is essential. Distribute the sealed cells too early and some of the emerged queens will be injured and deformed. Leave it too late, and the first virgin to emerge will kill all others in your batch.

**Stage 4: Emergence and mating nucleus**  
Professionals, raising queens for sale, use mini-nuc hives for their virgins to mature in and go on their mating flights. Such small colonies require precise timing, very intensive management, careful feeding, etc. for the virgins to mate and start laying successfully. The queens must ‘get on’ with the whole mating process in a hurry, as the number of bees in such a nucleus can initially dwindle and only much later does it rise rapidly. The use of mini mating hives is very economical on bees, as relatively few are needed for each small hive. The most commonly used, Apidea, or similar size hives, require only about a mug-full of bees. The queens mated in mini-hives are often superseded later in the same season.

Better queens are produced in the larger mating nucleus hives. These can be full-size frame ‘normal’ nucleus hives, or dedicated mating nucleus hives containing three or four full-size frames, allowing the queens to emerge in larger colonies. Two frames of emerging brood and one frame of food, with all attached bees will make quite suitable mating colonies. The queens, mated from these larger nucleus hives, can take a little longer to mate and longer to start laying, but invariably such queens will turn out to be much better mated and longer lived.

**Further reading:**

Current Beekeepers of Stingless Bees of Trinidad and Tobago Survey

Biodiversity and Ecosystem Services Network (BES-Net) - Trinidad and Tobago

The Environmental Policy and Planning Division (EPPD) of the Ministry of Planning and Development is executing the Biodiversity and Ecosystem Services Network (BES-Net) Implementation of Component I in Trinidad and Tobago Project in partnership with UNDP Trinidad and Tobago, Aruba, Curacao and Sint Maarten.

Our project focuses on the conservation and improved management of pollinators and pollination services in Trinidad and Tobago through improving science, policy and practice surrounding pollinators and their management. We designed this survey to collect information on the needs and challenges of stingless beekeepers in Trinidad and Tobago to better tailor our future workshops and activities to suit your needs. Don't worry, your responses are entirely confidential and there is no need to leave any contact info - unless you would like to. Stay tuned for upcoming activities and initiatives!

Survey Link:
https://www.surveymonkey.com/r/LQYT7VB

You can also find us on social media:
Website: http://www.biodiversity.gov.tt/index.php/bes-net.html
Facebook: BES-Net T&T: Improving science, policy and practice for pollinators
Instagram: besnet.tt
Twitter: besnet_tt
Future beekeepers of stingless bees

Biodiversity and Ecosystem Services Network (BES-Net) - Trinidad and Tobago

The Environmental Policy and Planning Division (EPPD) of the Ministry of Planning and Development is executing the Biodiversity and Ecosystem Services Network (BES-Net) Implementation of Component I in Trinidad and Tobago Project in partnership with UNDP Trinidad and Tobago, Aruba, Curacao and Sint Maarten.

Our project focuses on the conservation and improved management of pollinators and pollination services in Trinidad and Tobago through improving science, policy and practice surrounding pollinators and their management. We designed this survey to collect information on the needs and challenges of persons who are interested in keeping stingless bees but have not yet started doing so in Trinidad and Tobago in order to better tailor our future workshops and activities to suit your needs. Don't worry, your responses are entirely confidential and there is no need to leave any contact info - unless you would like to. Stay tuned for upcoming activities and initiatives!

Survey link:

https://www.surveymonkey.com/r/LVDXZF8

You can also find us on social media:

Website: http://www.biodiversity.gov.tt/index.php/bes-net.html
Facebook: BES-Net T&T: Improving science, policy and practice for pollinators
Instagram: besnet.tt
Twitter: besnet_tt