

Country Report Jamaican Beekeeping Industry

Hugh Smith(MSc. BSc.)
Chief Plant Protection Officer
Apiculture Unit
Ministry of Agriculture and Fisheries
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The Vision

The Apiculture Units **Vision** is to develop the Beekeeping Industry through **Research, Extension and Regulation.**

Mission

Apiculture Units mission is to increase efficiency, productivity and competitiveness of local beekeeping industry.

Purpose of the Apiculture Unit

The Apiculture Unit is responsible for spearheading the success of the industry through various programs and projects. The Unit fosters a **safe environment for investment** and monitors vast amounts of capital injected by individuals, government and non-governmental entities through Research, Extension and Regulatory functions.

Guide to presentation

- 1. Apiculture Unit**
- 2. Estimated Beekeeping Industry Value**
- 3. Honey Production**
- 4. Bio Security**
- 5. Climate change**
- 6. Safe Food**
- 7. The Fate of Neonicotinoids in Jamaica**
- 8. Industry Challenges**
- 9. The way forward**

Beekeeping Industry

- Evolved from the rearing of stingless bees (*Melipona* spp.)



Beekeeping Industry

**Stingless bees
(*Mellipona* spp.)**



Beekeeping Industry

- **From rustic
(non-
moveable
frames)**



Beekeeping Industry

- **More than 3,000 apiaries having 57,600 standard Langstroth beehives**



Beekeeping Industry

**Now the
introduction of
less than 20
flow hives**



picture source: www.alibaba.com

Estimated Industry Value

- *Local honeybee stock of approximately **J \$2.3 Billion (US\$18,000,000)***
- *Assets such as motor vehicles, buildings and beekeeping associated equipment valued at **J \$1.0 Billion (US\$7,500,000)**.*
- *Additionally, the annual expected earnings from hive products surpasses **J\$2.2 Billion (US\$16,600,000)** annually.
(just under USD45m)*

Cap on Expansion

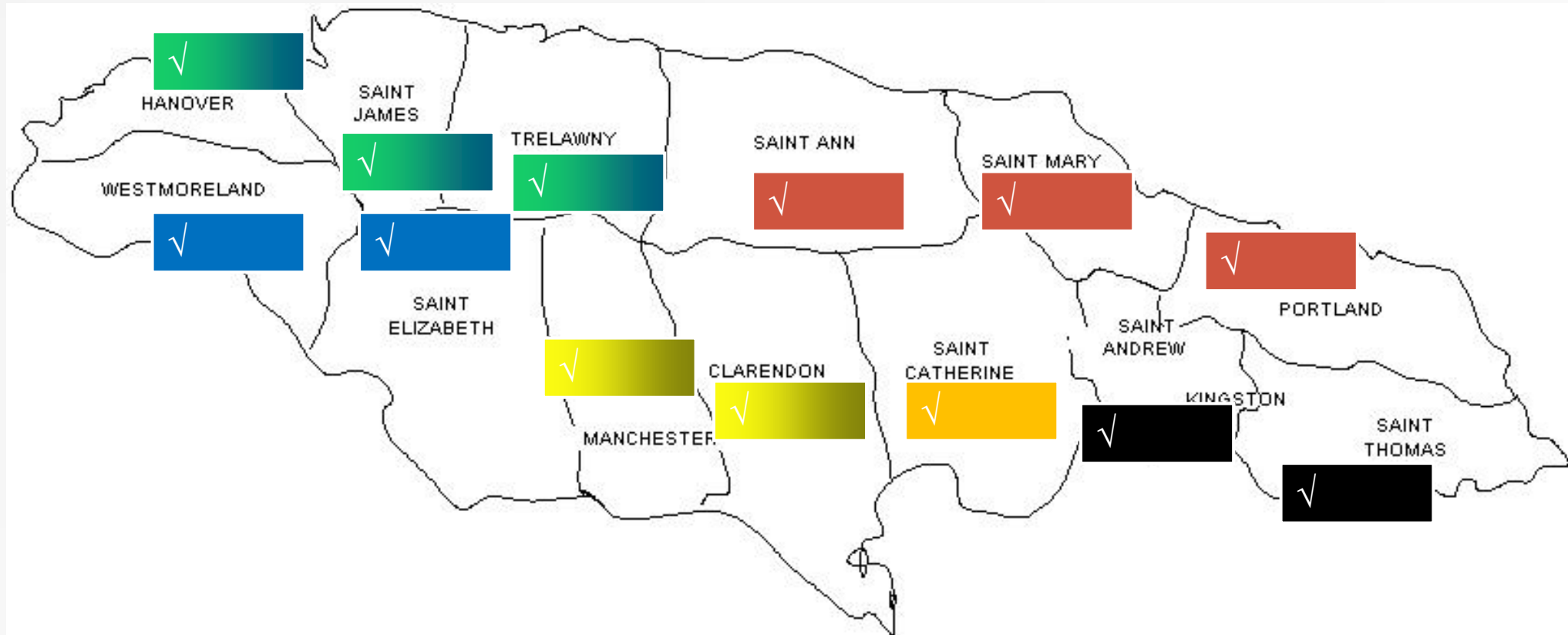
- bee stock by 80%
- Time 10 - 20 years
- (Approximately J\$11.0 Billion
(US\$84,600,000))

Races of bees in Jamaica

Three races of the *Aphis mellifera* spp.

- Italian honeybee (*Aphis mellifera linguistica*),
- Caucasian honeybee (*Aphis mellifera caucasica*)
and;
- the German black bees (*Aphis mellifera mellifera*).
- All blend in the colonies
- **No imports** allowed without a permit

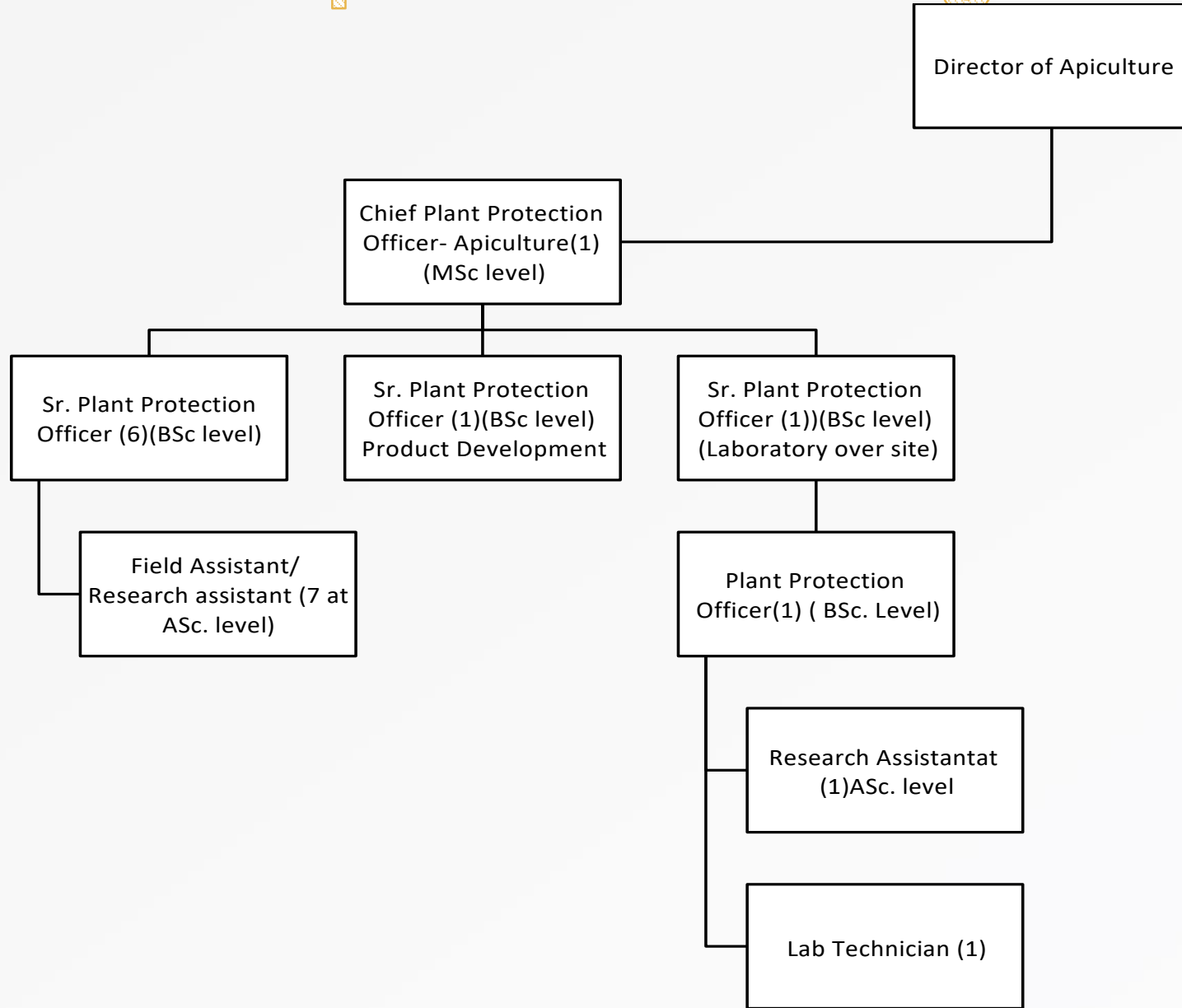
Extension Zones



Present Staff Complement

- **The** Chief Plant Protection Officer
- **Six** Apiculture Extension Officers
- **One** Research Assistant
- **A** secretary
- **One** task workers

Proposed Staffing



Proposed Positions	No.	Qualification	Role/ Function
Director of Apiculture	1	MSc up	Industry manager/ Direction/Policy guidance
Chief Plant Protection Officer- Apiculture	1	MSc level	Regulatory and administrative function
Sr. Plant Protection Officer	6	BSc level	Field assistant supervisors and 50 % research
Sr. Plant Protection Officer	1	BSc level	Product Development
Sr. Plant Protection Officer	1	BSc level	Laboratory over site
Plant Protection Officer	1	BSc level	International obligation at the pest and disease level from a lab stand point
Field Assistant/ Research assistant	6	ASc. level	Functional on the ground
Research Assistant	1	ASc. level	Functional in the lab and research apiaries
Lab Technician	1	To be determine	

Staff Working Conditions

- The lack of critical resources;
- Change in field conditions (humidity and high temperature);
- Inadequate staff;

Apiculture Unit Budget Requested

Objective	Apiculture Unit Actual Budget Request for			
	2017/2018	2018/2019	2019/2020	2020/2021
21		\$14,733,563.4	16,444,895.16	J\$18,113,895.06
22 – Total		14,733,563.47	9,797,412.00	J\$13,245,222.00
24		\$280,136.00	280,136.00	J\$734,400.00
25		\$2,247,296.00	2,008,950.00	J\$2,008,950.00
29				J\$300,000.00
Total Budget		J\$27,058,407.47	J\$28,531,393.16	J\$34,402,467.06

ACTUAL BUDGET?



Appropriation in Aid (AIA)

Community Projects	No.	Amount collected
Douglas Castle	20	
St. Ann FFP	4	
St. Thomas FFP	14	
Bellas Gate	20	
Monthly Training	12	
Other Groups		

Infrastructure Development

Apiculture Unit Entrance



Reception Area



Bodles Redevelopment Project

Renovated Bee Lab



**Common Area
with emergency Shower**



Field Visits

During the period April 2019 to March 2020

- The Apiculture Unit was able to conduct more than **724 apiaries** visits operated by just over 694 beekeepers;
- More than **62%** of the **12,718** of the beehive visited were inspected .

Beekeeping Training Programmes

April 2019 – March 2020

Farm Visits



Activity	Total
Number of Farmer interactions	694
Individual farmer trained on farm visits	689
Number of apiary Visits	724
No. of colony inspections	7,875
No. of colony inspections possible	12,718

Field Demonstrations



- Conducted 123 apiculture field demonstrations with more than **1,213** beekeepers trained in specific areas.
- This resulted in an average of **9.8 person /** Field Demonstrations.



- PHOTO: CLAUDIA GARDNER
- Apiculture Extension Officer for St. Elizabeth and Westmoreland, Attoy Williams, inspects a frame of bees during a training session in Beeston Spring, Westmoreland, recently.(March 12, 2018)

Group training sessions

- **99** beekeeping group training sessions were conducted by the staff.
- **1,638** participants were involved in these sessions that were implemented across Jamaica.
- The **average** participation **16.6**



Establishment of New Apiaries

- More than **157 new apiaries**
- having in excess of **1,477** colonies averaging **9.4** colonies per apiary.
- **53%** of the number of colonies were established in **April to June 2019** in **39%** of the new apiaries.

Food Source for honeybees



Support for feeding of Honeybees

Issue with CHO supplemental feed (high price/
not accessible)

The beekeepers are requesting:

1. Safe sugar for honeybees feeding ;
2. Affordable priced sugar; and
3. Accessable by beekeepers

Apiculture Unit Out Reach

Stakeholders include:

- Beekeepers organizations and community groups
- Jamaica Bauxite Institute
- Social Development Commission
- Jamaica Social Investment Fund
- College of Agriculture, Science and Education
- University of the West Indies
- Veterinary Services Division
- Agricultural Land Management Division
- IICA

Apiculture Unit Out Reach

Stakeholders include:

- Agricultural Farm Stores across Jamaica
- Ministry of National Security
- Ministry of Education
- Ministry of Labour and Social Security
- Rural Agricultural Development Authority
- NCTVET / HEART
- Digicel Foundation,
- USAID,
- Food for the Poor,
- Flow and
- European Union



Beekeeping Intervensio projects

- The Apiculture Unit provided technical support to over **40** beekeeping Projects Island wide valuing over **60 million dollars**.

NCTVET / HEART

- The Apiculture Unit is always in contact with NCTVET / HEART in the certification of our beekeepers island wide. This was initiated some years ago to facilitate the export of labour in the field of beekeeping under the Ebony Park banner. The Apiculture Unit has continues in this endeavour in several parishes.

CASE

- One Officer has provided a **temporary support** to CASE beekeeping programme as an outreach of the beekeeping extension delivery on a short term basis due to the absence of their regular lecture. This covers students for the job market.

MINISTRY OF NATIONAL SECURITY

The Ministry of National Security (MNS) has partnered with the Apiculture Unit to implementing three of four beekeeping projects. These facilitate:

- Reintegration and Rehabilitation of Involuntary Returned Migrants (deportees) in Jamaica .(UNDP funded).
- Improve policy and legislative ; and
- To enhance access to services for IRMs.

MINISTRY OF NATIONAL SECURITY

The following Project status are as follows:

1. Open Arms Drop-in Centre, Kingston -
 2. Salvation Army, Kingston
 3. Portland Rehabilitation Management, Portland.
 4. Open Heart Charitable Mission, St. James - (Mission was aborted.)
-

DOUGLAS CASTLE BEEKEEPING PROJCT

- Environmental foundation of Jamaica has been instrumental in funding several beekeeping related project. The total project implemented includes the introduction of apiculture and greenhouse farming to attract attract unemployed youths within the community of Douglas Castle PMO. This was aligned to GEF/SGP Country Programme Strategy's focus areas of land degradation and sustainable forest management, Biodiversity Conservation and climate change mitigation.
- The GEF SGP played an important role in its funding. **(Project Value \$20,640.00 USD)**

Bella's Gate Community

- The Bella's Gate Project was implemented to address the “High Level of **Unemployment**” in the community. The project is approximately 50 percent implemented cover Apiculture coupled with Agro-forestry as an alternative livelihood for 10 participants and their families.

(Project Value \$4,981,000)

Jamaica Bauxite Institute Projects

Several beekeeping projects have been coordinated by the Unit in order to have the Bauxite communities engaging in beekeeping.

These include:

- **Bodles/ Sandy Bay and Hayse** : Joint Communities Council Benevolent Society to **enhance pollination**,in addition to providing self employment
- 20 persons at a cf **J\$4,110,600**

Jamaica Bauxite Institute Projects cont'd.

- **Kirkvine : Target 40 participants to be self employment.
(Project Value J\$4,729,800)**

Jamaica Bauxite Institute Projects cont'd.

Names of projects	Granted amount	Comment
Mile Gully	\$1.2 Million	
Hayes JBI Bee group	\$1.5 Million	12 persons
JAMALCO Community counsel Bee Group. - Porus	\$1.2 Million	
York Town	\$1.2 Million	

Food for the Poor

Food for the Poor is one of Apiculture Units greatest and consistent investor in the new beekeepers from rural areas. Several projects are in progress across Jamaica



picture : <https://foodforthepeerja.org/cause-detail-agriculture.ph>

Research Agenda

- The Characterization of Jamaica's Beekeeping Stock which will determine the **genetic makeup** ;
- The selection and production of two lines of queens from the government stock.
- To determine the **DNA finger print** of causative agent of **American Foul Brood Disease** in Jamaica in comparison to that of other trading countries.

Bio Security

Monitoring Port of Entry

Swarm removed and
killed from a vessels
transshipping bauxite ore
from Port Keiser in
Discovery Bay, St. Ann.
(2015)



Port of Entry Incident - Bees

Wednesday **January 29, 2020** that a swarm of bees was detected on a ship on a cargo Ship in Bracco, Trelawny.

As such the following action were taken:

1. The remanants of the bees was **removed**
2. Identification of all beekeepers and apiaries **within** a 1km radius of the port;
3. Sought assistance from the beekeepers in identifying and **destroying all swarms** of bees of unknown origin within the selected area;

Port of Entry Incident - Bees

4. Conduct a **sensitization meeting** with all beekeepers in the affected parish;
5. Inspect **sample** for bee pest at Bodles Research Station;
6. Instalation of **swarm traps** at some of the major Ports of entry; and
7. Monitored by staff an **trained beekeepers**

Investigation launched - Imported Pollen



Hanover Beefarmers Co-operative



Areas of concern

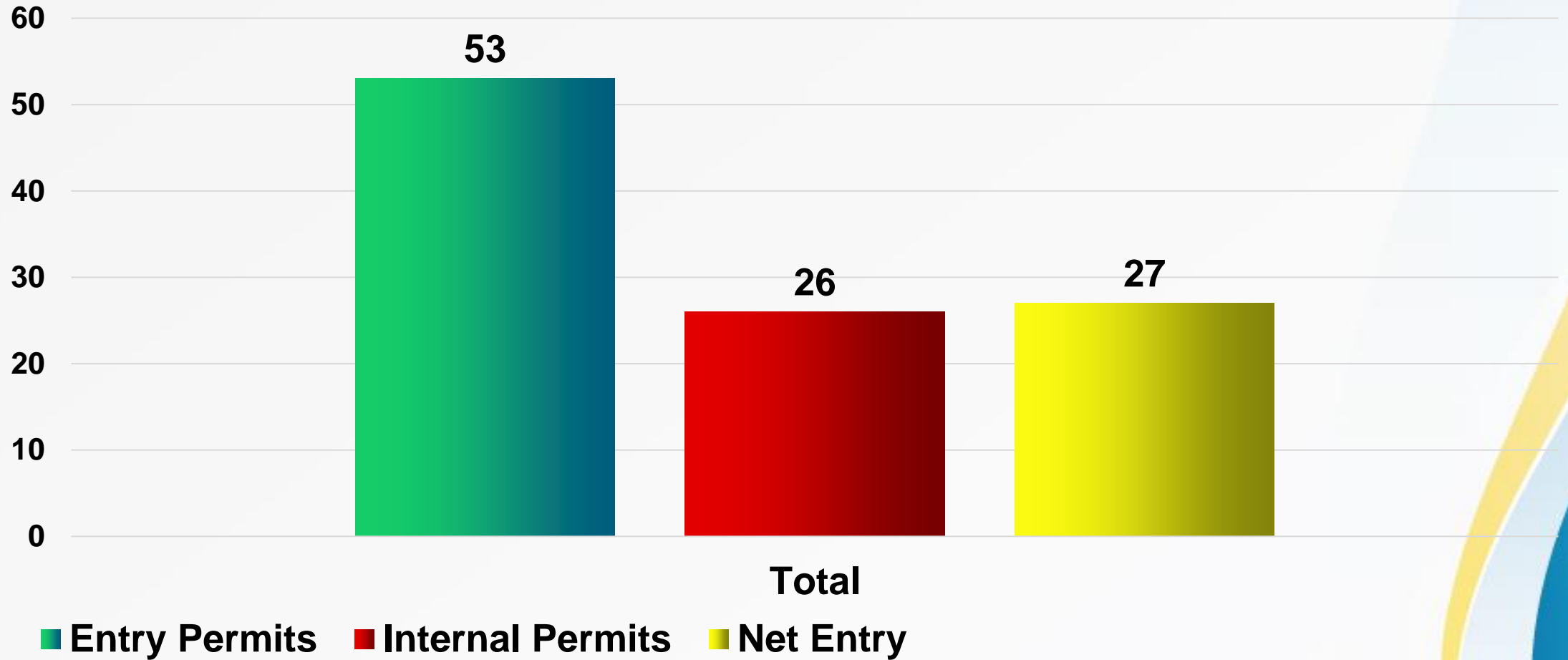
- Theft of bees and hive products
- Climate Change
- Loss of bee pasture
- Chemical use and abuse
- Slow pace maximizing the value chain
- Low investment in research

Theft of bees and Hive products

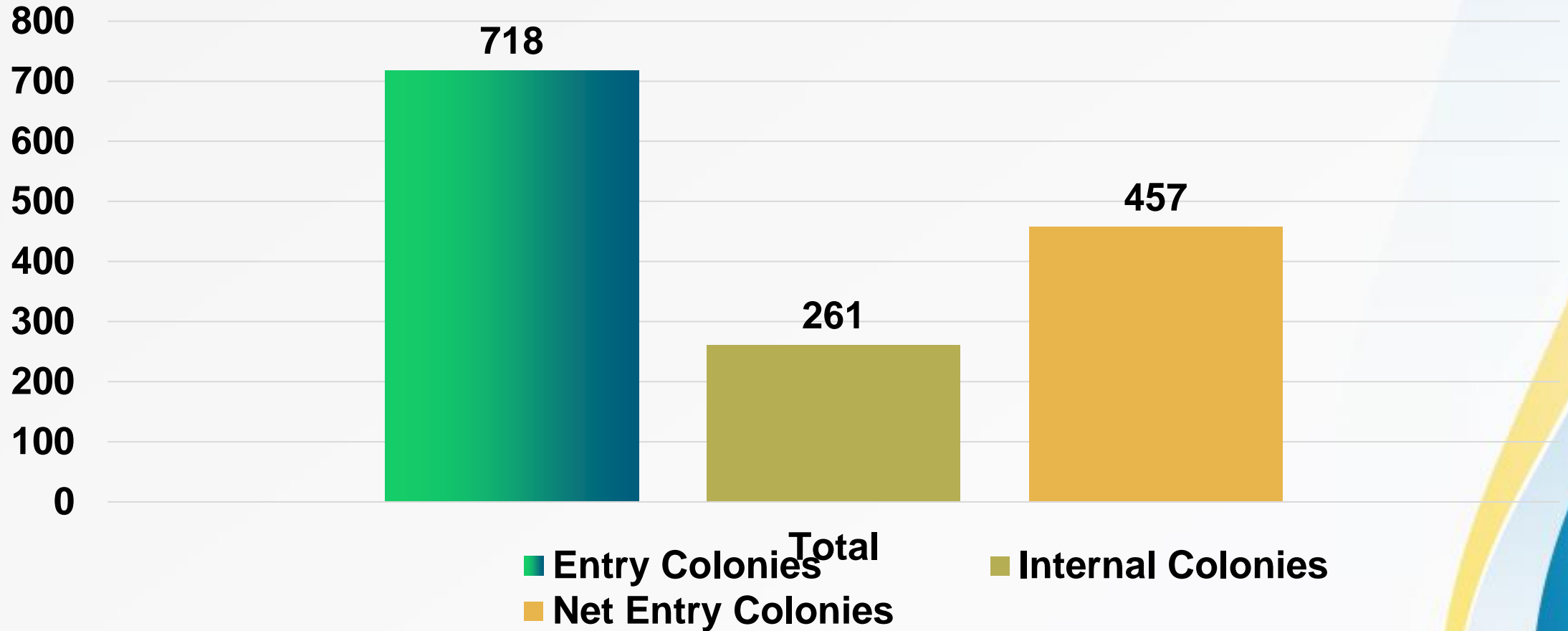
In 2019 - **four** farmers and removed a total of **73** colonies of bees having double and triple chambers valuing over **J\$3,000,000**

Continued across St. Thomas, Clarendon, Manchester, St. Catherine

No. of Permits Granted for Colony Movement



Number of Colonies Moved



Bio Security: American Foul Brood Disease

- No hives exhibit clinical symptoms of AFB Disease.
- Inspection and **seizure** for Illegally Imported
- 32 honey samples were submitted to the Vet lab for **residue** analysis in order to comply with the EU requirement.
- **Two samples** of animal feed (**sugar/sweepings**) were submitted for residue analysis.

National Bee Pest Status

Varroa mite

- Reduction in the reliance on Apistan;
- A re-validation of the batch was conducted with the help of Vita Europe Ltd.
- Use of Apiguard;
- Increase use of French Thyme and Guinehen Weed;

Small Hive Beetle

- Naturally distributed in all apiaries across the island
- Emphasis on proper hive management

Frogs

- **Detected in more than Four Parishes**
- **Found in hive**
- **Consuming honeybees**
- **Mesh hive entrance**
- **Apiary sanitation**



**Scientist
urges
Jamaicans
to report
sightings of
invasive Cuban
tree frogs**

Donald Karl

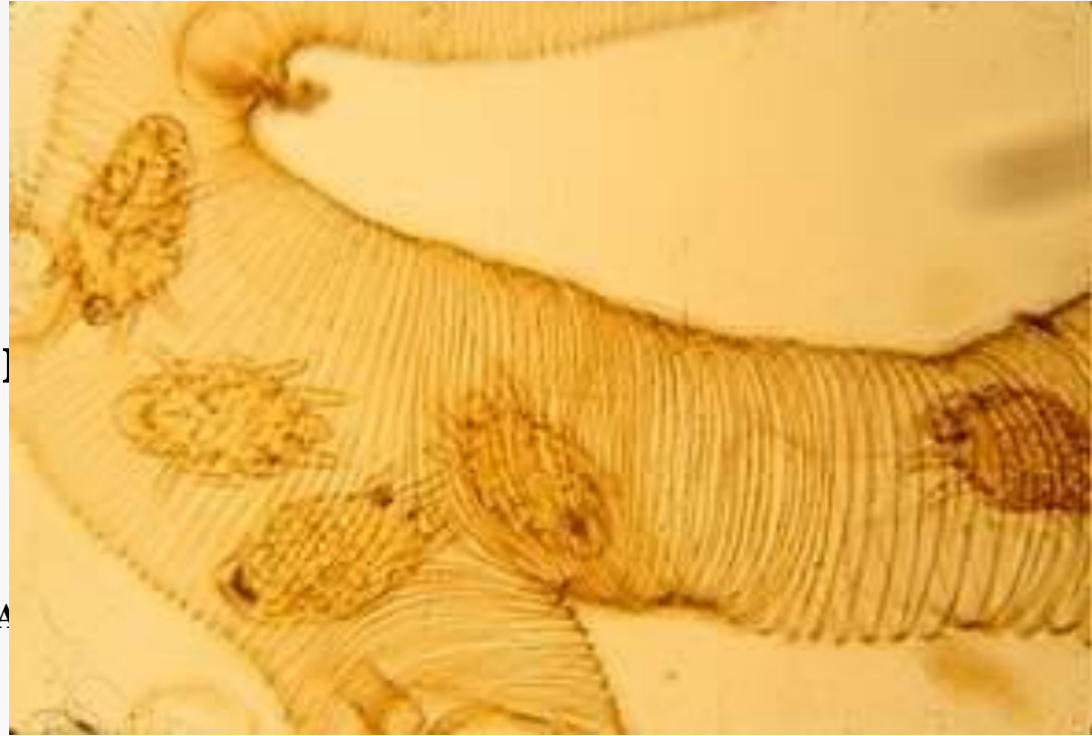


Tracheal Mites (*Acarapis woodi*)

- **National sampling**
- **Checking using OIE protocol**
- **Tracheal Mites Not Detected in Jamaica**

source of picture:

https://media3.picsearch.com/is?u3xGFDmFzYUe9Kab1P5Qf_txOAA4R4yMbpQF19908&height=199



Small Hive Beetle

- Naturally distributed in all apiaries across the island
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The way forward for the beekeeping sector should include

- **Increase the primary production** of bee keeping products by the community members (especially the youth) ; and
- **Improving institutional capacity** of the community based organizations, national beekeeping body, supporting government and non-government entities; and
- **Increase technical** deliverables to beekeepers and value added producers.
- Improve on the **bio security** with relevance to the beekeeping trade.

Thank you

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