ANALYSIS REPORT OF INDIA'S NATURAL HONEY EXPORT QUANTITY (2013-2018)

Author :S. KARTHIK M.E.

Mail ID : erskarthik16@gmail.com, **Mob :** 9445627567

Link to My Public Workbook :

https://public.tableau.com/profile/karthik.s1766#!/vizhome/ANALYSISOFINDIASNATURALHONEYEXPORTFROM2013-2018/2013-14

"If the bee disappears from the surface of the earth, man would have no more than four years to live. No more bees, no more pollination … no more men!" _ **Albert Einstein**

"Let every wind that blows drop honey,Let the rivers and streams recreate honey, Let all our medicines turn honey,Let the dawn and evening be full of honey, Let the dark particles be converted to honey,Our nourisher, this sky above, be full of honey,Let our trees be honey,Let the Sun be honey, Let our cows secrete honey"
_Rig Veda 1:90:6-8

"Gracious words are like a honeycomb, sweetness to the soul and health to the body."**_Proverbs 16:24**

"And your Lord (Allah) revealed to the bees: Build your hives in mountains, trees and in what they build. Then eat from every fruit and follow your Lord's enslaved paths, from its bellies exits drink of different colors, in it healing for man**." _ Quran 16:68-69**

Abstract

This article uses the data of natural honey export of India from 2013 to 2018 to make an analysis on the fluctuation of honey export quantity (in Metric Tonnes) on year by year. Then it quantitatively makes an analysis on the current situation of international export competitiveness of honey in India's market share. It also uses the analysis result to find out the relevant factors that affect the international honey export competitiveness and proposes the relevant countermeasures to improve the international competitiveness of honey in India. Also this report suggests IOT based creative ideas to improve the export quantity of natural honey.

Introduction

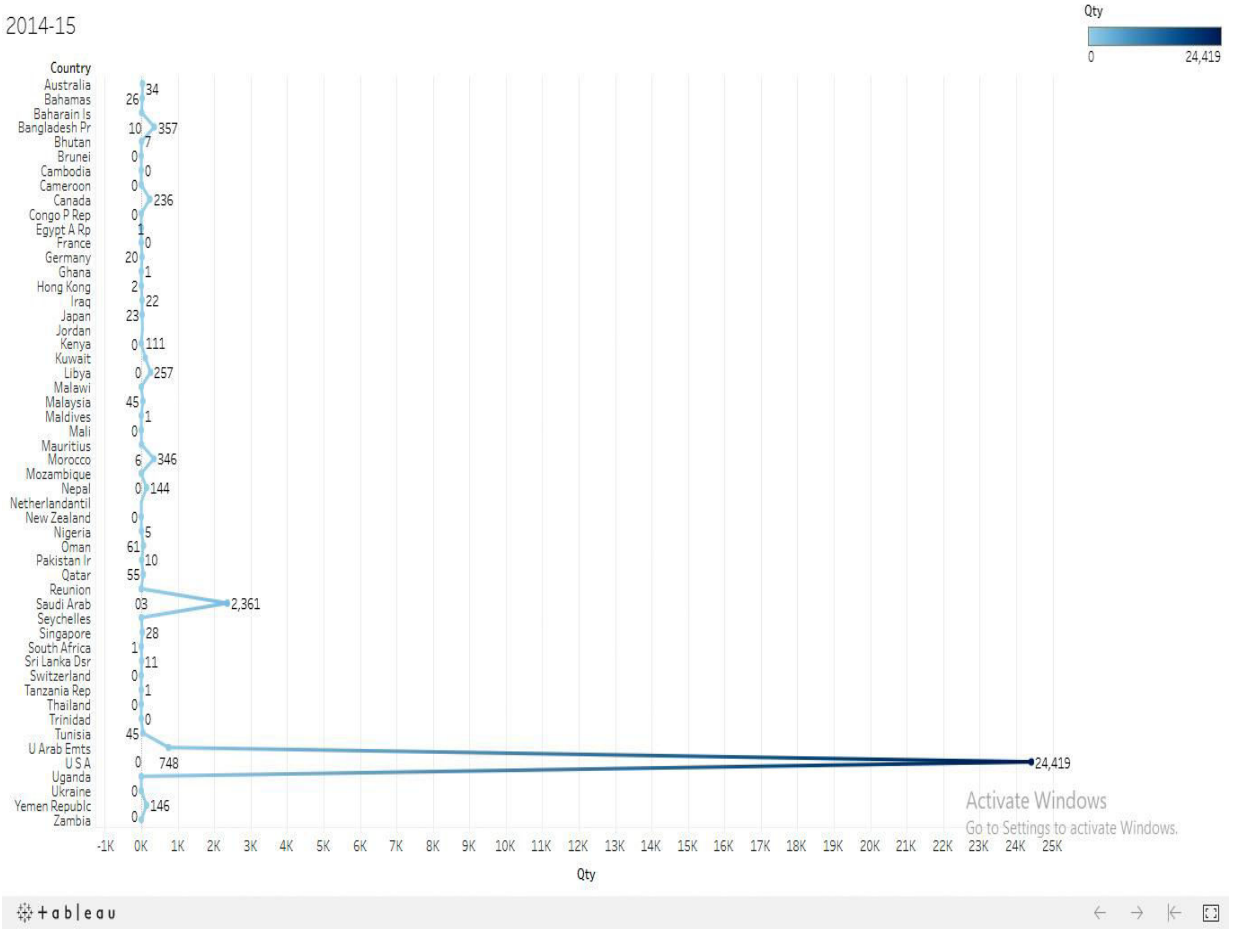
Insects provide numerous primary environmental services from recycling of nutrients to pollination, beside their fundamental contribution to food resources of many vertebrate animals. Consequently insects should be at the core of any commitment of the world to the International Convention on Biodiversity. Pollination is one of the most important mechanisms in the maintenance and conservation of biodiversity and in general life on earth. Pollination also benefits society by increasing food security and improving livelihoods, hence pollinator diversity is important. Two thirds of the world's 3000 species of agricultural crops require agents for pollination. Pollinators provide an ecosystem service that enables plants to produce fruits and seeds. Pollinators are found in diverse groups of the animal kingdom, including birds, bats, reptiles, insects, etc. Among the several animals, insects particularly honey bees, dominate in providing pollination services to several plants. Several other pollinators including carpenter bees, bumble bees, megachilids, halictids, sphecids, andrenids, syrphids, etc. are known to occur in the country. We have always under evaluated their contribution perhaps because of our limited insight into their behaviour mechanism for nesting. But today the modern beekeeping suffers from a magnitude of problems, including parasitic mites, honey bee diseases, inability of honey bees to work at low temperature and adverse climatic conditions. These difficulties threaten the honey bees general utility as an agricultural pollinator. Therefore, Conservation of biodiversity of honey bees and wild pollinators is important to realize the potential yields of several cross-pollinated crops, hybrid seed production, crops grown under poly-house conditions and in conservation of rare and endemic species in the country.Honey is one of the most appreciated and valued natural products introduced to humankind since ancient times. Honey is used not only as a nutritional product but also in health described in traditional medicine and as an alternative treatment for clinical conditions ranging from wound healing to cancer treatment. Traditionally, honey is used in the treatment of eye diseases, bronchial asthma, throat infections, tuberculosis, thirst, hiccups, fatigue, dizziness, hepatitis, constipation, worm infestation, piles, eczema, healing of ulcers, and wounds and used as a nutritious supplement. The ingredients of honey have been reported to exert antioxidant, antimicrobial, anti-inflammatory, antiproliferative, anticancer, and antimetastatic effects. Many evidences suggest the use of honey in the control and treatment of wounds, diabetes mellitus, cancer, asthma, and also cardiovascular, neurological, and gastrointestinal diseases. Honey has a potential therapeutic role in the treatment of disease by phytochemical, anti-inflammatory, antimicrobial, and antioxidant properties. Flavonoids and polyphenols, which act as antioxidants, are two main bioactive molecules present in honey. According to modern scientific literature, honey may be useful and has protective effects for the treatment of various disease conditions such as diabetes mellitus, respiratory, gastrointestinal, cardiovascular, and nervous systems, even it is useful in cancer treatment because many types of antioxidant are present in honey. In conclusion, honey could be considered as a natural therapeutic agent for various medicinal purposes. Sufficient evidence exists recommending the use of honey in the management of disease conditions. Based on these facts, the use of honey in clinical wards is highly recommended. Hence honey is the vital product in both food and medicinal trades of international market.

Exports From India of Natural Honey on 2013-2018

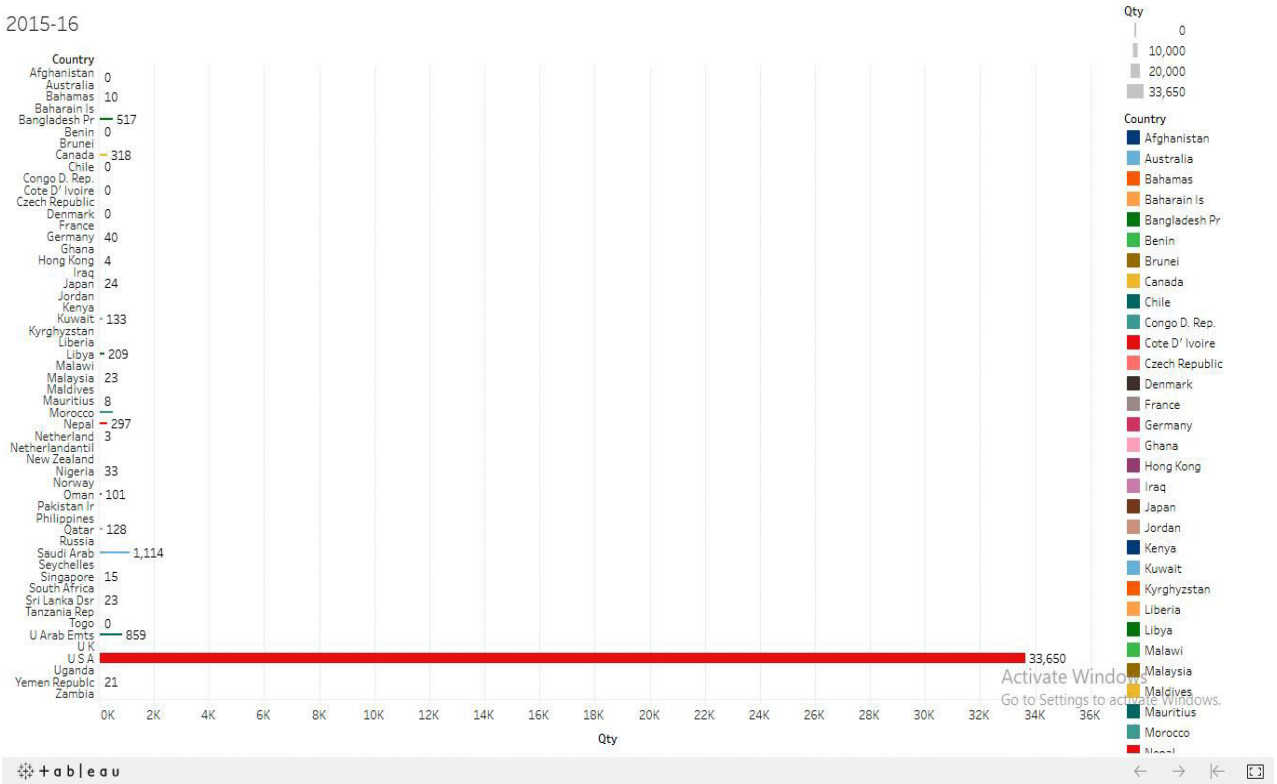
India is one of the largest honey producing and exporting countries in the world. Honey exports from India to the world worth USD 80.52 million during the year 2017. In export import business, honey is mainly classified under HS Code 04090000. In India natural honey is regulated under the Prevention of Food Adulteration Rules, 1955, the voluntary Bureau of Indian Standards for ISI mark, and Honey Grading and Marking Rules, 2008, under the Agricultural Produce (Grading and Marking) Act, 1937, also known as AGMARK. All three define honey as a natural product and lay down standards for its composition and quality. The country has been exporting honey since 1991-1992. The quantity exported used to be small, being a total of around 8,000 metric tonnes until 1998. It has increased substantially, reaching 51547 metric tonnes on 2017-2018. India exports honey to approximately 72 countries, major destinations included United States, Saudi Arabia, United Arab Emirates, Bangladesh, Canada etc. Mustard honey, eucalyptus honey, lychee honey, sunflower honey, pongamea honey, multi-flora Himalayan honey, acacia honey and wild flora honey are some of the major varieties of Natural honey produced in India. In this report comparatively I analysed the India's export quantity for the period of 5 years namely 2013 to 2018. I chosed the quantity in terms of metric tonnes(MT) instead of export value, because the value of a currency depends on factors that affect the economy such as imports and exports, inflation, employment, interest rates, growth rate, trade deficit, performance of equity markets, foreign exchange reserves, macroeconomic policies, foreign investment inflows, banking capital, commodity prices and geopolitical conditions of the respective countries. Let we see the analysed report for India's export of natural honey for several countries in graphical visual format by the help of "Tableau" data visualization tool.

For the period of 2013-14

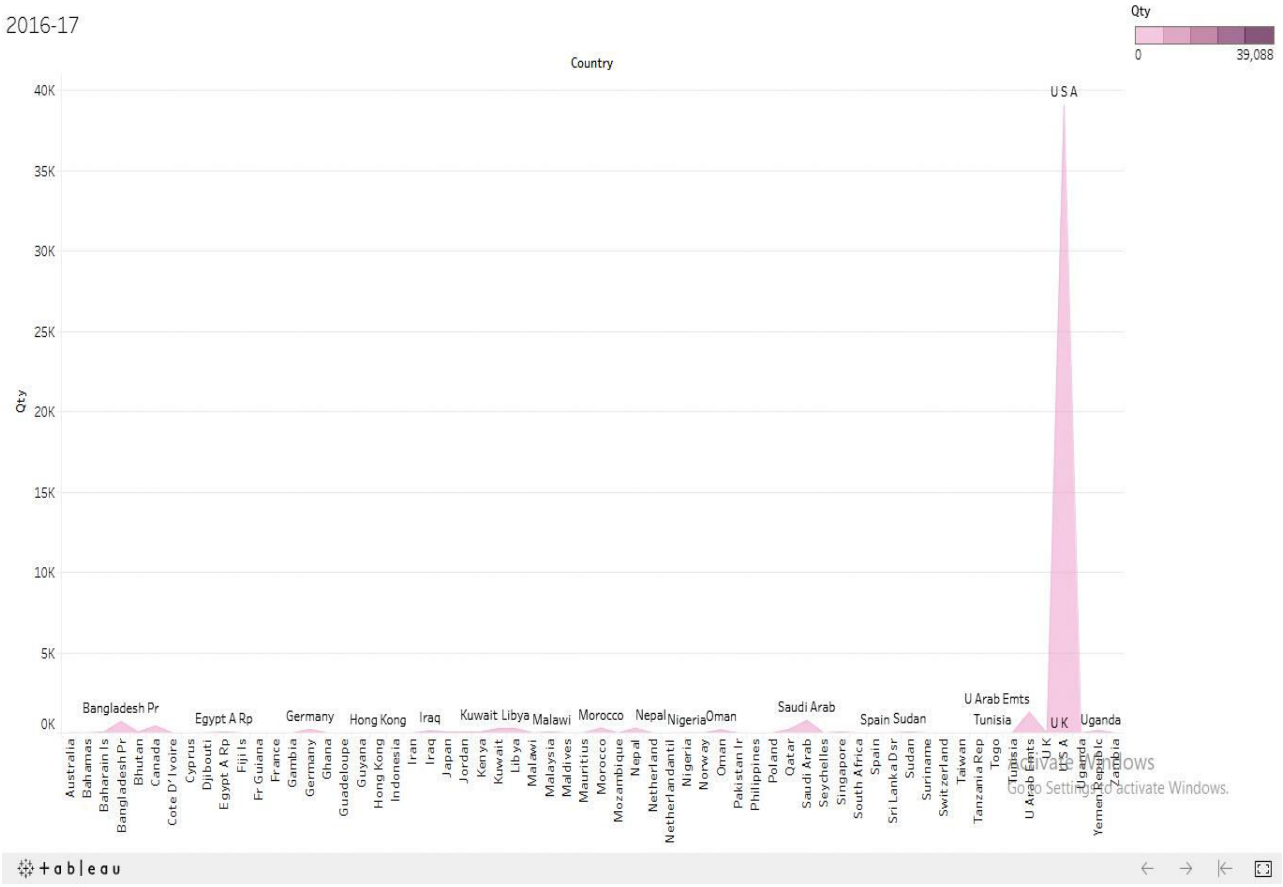
For the period of 2014-15



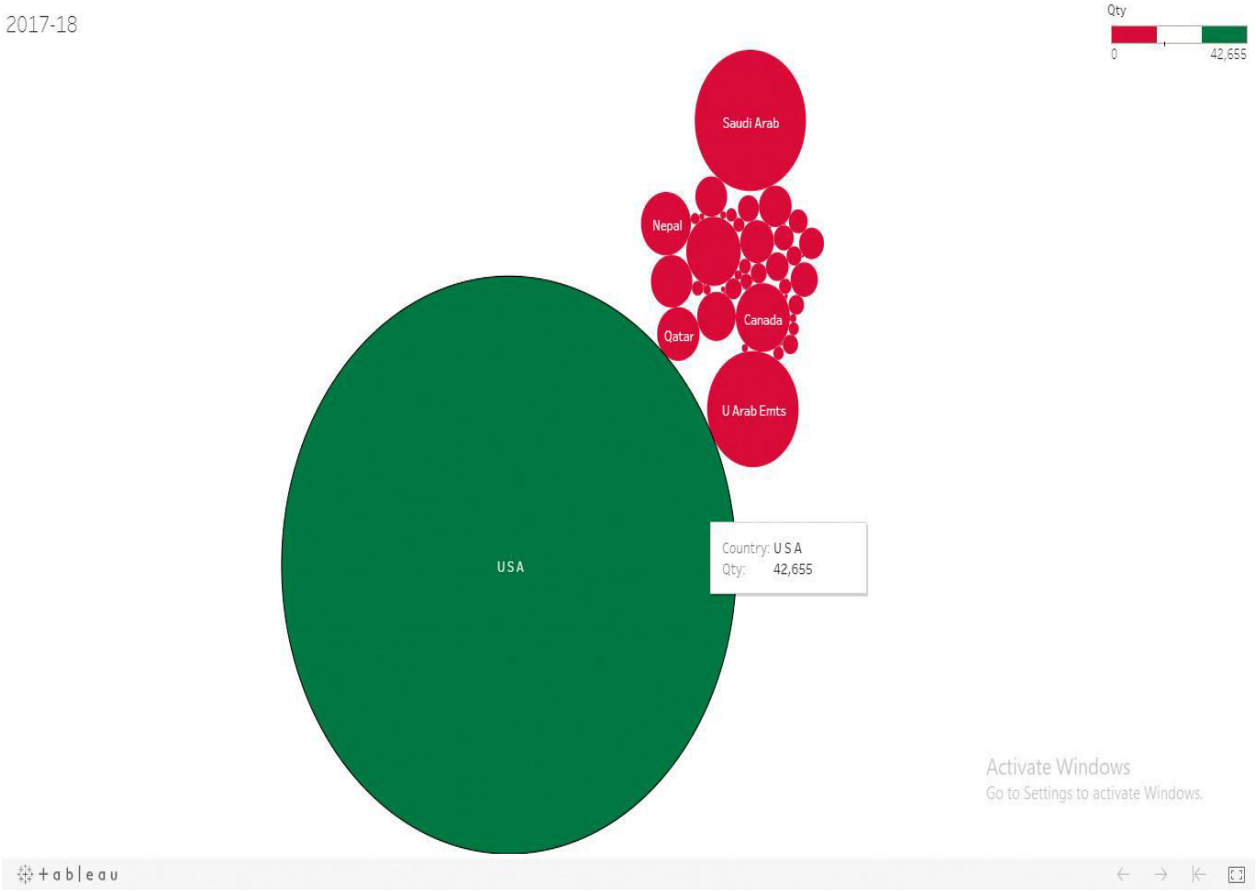
For the period of 2015-16



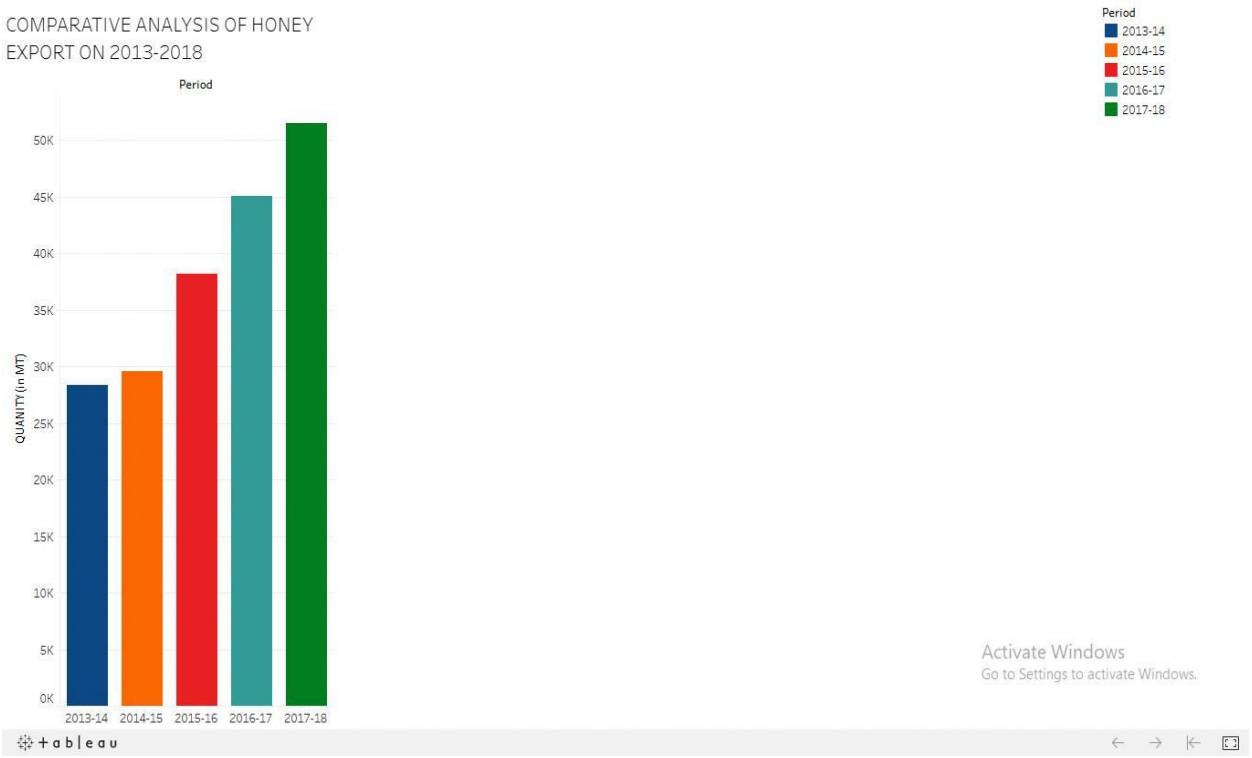
For the period of 2016-17



For the period of 2017-18



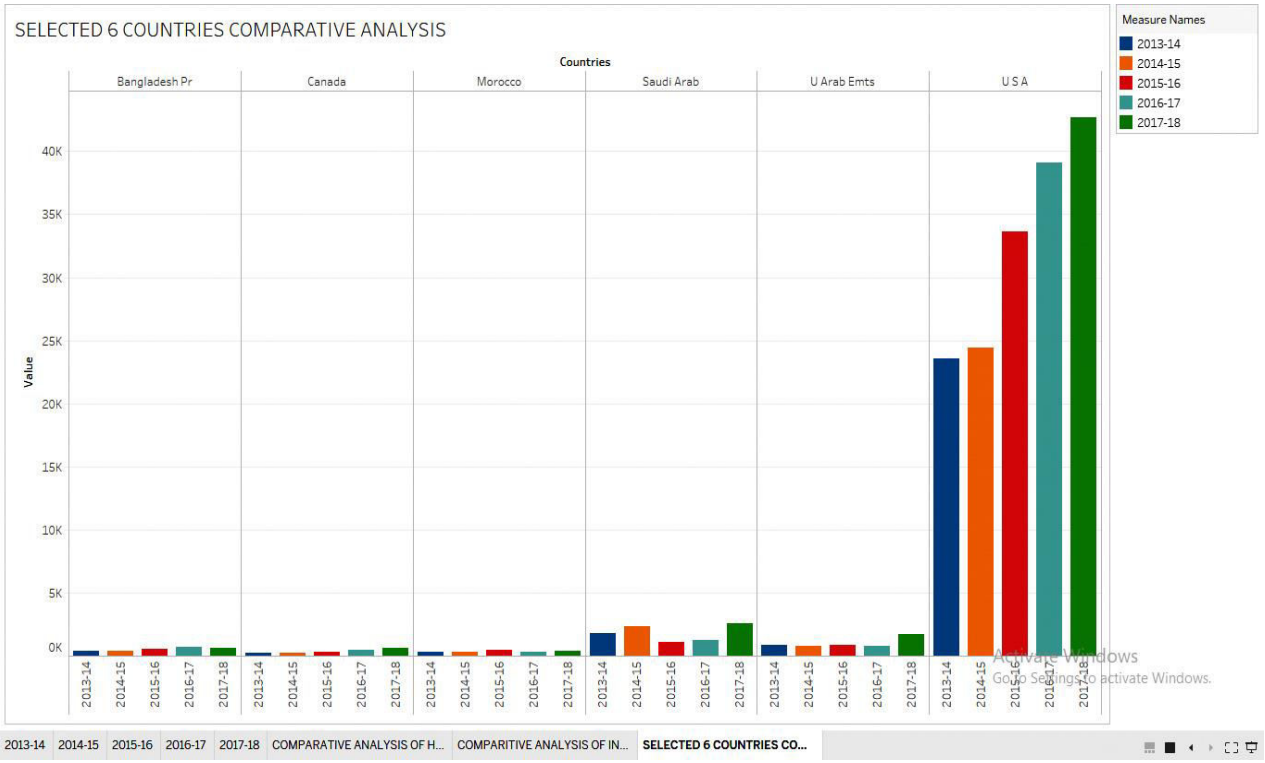
For the total period of 2013-2018



For each period of export I picked different types of chart in Tableau tool, world map, horizontal line chart, horizontal bar chart, continous area chart, packed bubbles chart, vertical bar chart respectively. On these charts we can understand the wide reach of India's natural honey export to the several countries among the world in terms of MT. There is an gradual growth on every year of export quantity of natural honey from India. There are no lags and downs among the period of sampling 2013-2018, 28378MT to the maximum of 51547MT respectively.

From the analyses we can also observe that USA is the major receiver of natural honey from India in terms of quantity 23599MT to the maximum of 42655MT on overall other countries.

Next to USA, few more countries took the place of top list on major regular receivers such as Bangladesh, Canada, Moracco, Saudi Arabia and United Arab Emirates.



On comparing to these regular major receiving countries, USA stays top on the list in the basis of gradual growth of import without any lags and downs.

Factors Affecting India's Natural Honey Export

India has a large acreage of bee flora, comparatively cheap labour, and a large domestic market for honey. In India there is a good number of beekeeping scientists working in different fields of apiculture research and development. Beekeeping research is organised under the All India Coordinated Project on Honeybees and Pollinators, whose centres are spread all over the country under different agroclimatic zones. These centres conduct research into different aspects of beekeeping, providing a strong impetus for the promotion of sustainable apiculture and helping to increase honey production, besides creating awareness of scientific beekeeping among beekeepers. India experiences seasonal variation in honey production. Transportation and packing material costs are very high. There is poor domestic awareness about the use of honey. In spite of these weaknesses, there is a great potential for honey to be exported to the world market, which is evident from increasing honey exports during recent years.

IOT based solutions to improve the export quantity

IOT – "Internet of things" is one of the latest technology of Industry 4.0 development era, among Data Science, Machine Learning and Artificial Intelligence tech roots of 4.0. To improve the export quantity of natural honey, we need to solve the factors affecting the apiculture in India. Hence we need to develop the quality of apiculture, by introducing the IOT technology in it. On comparing to other countries among the world, several countries had started imposing IOT in apiculture such as USA, Germany, China etc.,

What IOT do the needful in apiculture ?

We can observe the humidity, temperature, and audio readings on bee development boxes as well as giving you access to environmental factors like the external temperature, humidity, and wind direction by the help of electronic sensors integrated with cloud data storage. By these datas we can analyse the factors which affects the growth of bees and the quality of honey yields.

There are several other creative ideas also available to improve the apiculture profit such as gluing tiny RFID devices to bees in a quest to track generational impacts of pesticide exposure and genetically modified pollen, also by using cameras to track individual bee movements optically. Using an approach similar to image recognition (or computer vision) systems, it develops day-to-day signatures of bee activities from which changes in hive conditions can be detected early while it's still possible to remedy the problem.

Conclusion

So far we seen the comparative analysis of natural honey export of India from the period of 2013 – 2018, factors affecting the quantity and quality of natural honey collection and how to improve it by introducing the IOT technology. On comparing to global countries we need to further improve the export quantity and also we need to start adopt the new technologies as soon as possible to meet the global competitors on world natural honey market.

Source Data Set

http://agriexchange.apeda.gov.in/product_profile/exp_f_india.aspx?categorycode=0408