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ABSTRACT BOOK

converge. According to historical data, it is considered the origins of the Turkic people. The landscape of the area presents an extremely rich variety of flora and fauna. Most of the plant species growing in the area are good honeybees.

The main occupation of the local population is cattle breeding, the number of which increases every year, which affects pastures overgrazing, and highly edible plants vanishing. To restore biodiversity, program of comprehensive development of beekeeping and agrotourism with apitherapy elements is launched.

Bees were first brought to the region in the 17th century from Kyiv Province. Over the centuries, they have survived without mixing with other bee species and developed genetic set of adaptations to the harsh environment, cold long wintering, diseases, and honey collection in a short summer period. Bees collect honey with its unique pleasant taste and smell, which is highly demanded.

To expand beekeeping, we have organized supplies of bee packages for new bee farms. The state subsidizes the breeding work, assists maintaining bees breed purity with the characteristics of *Apis mellifera mellifera*. Our specialists have developed product tracking system applying digitalization and QRs. We put apicabins in recreation areas. All these give farmers more income than traditional cattle breeding. Therefore, the population reduces cattle number and switches to beekeeping and agrotourism. The new area also improves beekeepers health. Eventually, during the pandemic there was not a single case of severe Covid-19 disease among beekeepers and their families in the East Kazakhstan.

To summarize, beekeeping is multifaceted activity that contributes to the nature conservation, improving people's health, increasing the well-being of the population, especially in rural areas.

Our further plans include studying the unique characteristics of local honey quality and local bees breeding work. So we invite fellow scientists to Kazakhstan to participate in our projects.

[PP-154 \[Beekeeping for Rural Development\]](#)

Making of a 5th Gen Beek: The story of a 14-year young female beekeeper from India

[Jose Louies](#)

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The state of Kerala is beautiful state with rich flora and fauna and tropical weather condition. The state is part of the Western Ghats and the landscape is famous across the world for the spices such as black pepper, clove, pepper, coffee & tea originated from the region.

Beekeeping in the state of Kerala was declining as it was not a profitable business for many professional beekeepers. Due to the changing farming practices and plantation activities, the natural bee population also declining and there was a need to start small scale beekeeping involving youngsters and native bee species. We needed to conserve the native bee species and also ensure that the tradition of beekeeping is kept alive in the community.

As part of a Beekeeping Project "Bees for Life", we have trained a few young beekeepers during the Covid lockdown phase. They were not attending regular schools or using mobile phones as their classrooms. This case study is about Michelle, a 14-year young enterprising girl who became an expert beekeeper and also started selling pure raw honey to more than a hundred happy customers across the country.

Michelle learnt the first lessons of beekeeping from her father who kept one beehive at home as a hobby. She started with assisting her father and had her own beehive in 2019.

During the COVID lockdown (2020-21) she expanded her beehives into a dozen beehives and also helped three adults to setup apiaries at their homes.

Today she sell honey to more than hundred customers where the honey is either from her beehives and also buy from other beekeepers.

She has already attended international workshops, participated in online workshops in national and international workshops

The future of sustainable beekeeping depends on new beekeepers who will take the practice of ethical beekeeping forward where they ensure the conservation of bees and also ensure the production of honey for the people.

[PP-157 \[Beekeeping for Rural Development\]](#)

LIFE VAIA: Valuing Afforestation of damaged woods with Innovative Agroforestry

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The LIFE VAIA project (Valuing Afforestation of damaged woods with Innovative Agroforestry) stems from the need to

restore forest areas and increase the ecological, economic and social resilience of forest ecosystems damaged by extreme climate events, such as the VAIA storm that hit North East Italy in October 2018.

The objectives of the project, to be pursued in 16 pilot sites (of about 2.5 hectares each) in Italy, Spain and France, are in line with the European Union's environmental strategy aimed at protecting forests from damage caused by climate change, strengthening local ecosystems and protecting biodiversity.

With a duration of five years and a total budget of €6 million, of which €3 million has been allocated by the European Commission, the LIFE VAIA project aims to develop an innovative approach based on the application of "temporary" agroforestry measures (15/20 years). This strategy makes it possible to invest in the production of sustainable and low-impact products, increasing biodiversity and the sustainable use of resources. The main actions financed by LIFE VAIA concern the reproduction and cultivation of wild blueberries and other "wild" small fruits, food and medicinal plants in forest ecosystems, as well as the enhancement of beekeeping production in forest areas destroyed by storms and other extreme climate events. The forestry strategy pursued by the project will make it possible to limit the economic damage suffered by local communities and to develop innovative silviculture and value-added products.

[PP-158 \[Beekeeping Technology and Quality\]](#)

Apivox Varroa Eliminator. A new method of beekeeping and a new beehive, the task of which is to suppress the development of Varroa mites population

[Serjio Glebskij](#)

Research Dept. Apivox Project, Barcelona, Spain

In the frameworks of Apivox Varroa Eliminator project, the possibilities of suppressing the development of the Varroa mites population in bee colonies were studied. It is well known that it is the development of these mites and the associated viral infections that ultimately lead to the collapse of bee colonies. For today this task is of global importance!

For three years of work, we managed to find such a way of keeping bees, which made it possible to reduce the intensity of mites reproduction, which, together with simple zootechnical methods, made it possible to suppress the development of mites in experimental families. Of course, we do not completely destroy the population of mites, but every year their population is getting smaller and smaller.

Within the frameworks of the project, after analyzing dozens of works by well-known world-famous scientists, a new method of keeping bees was developed, and a new design of the hive was created for any frame standards, which allows keeping bees in accordance with the new requirements. The 2019-2021 seasons were a test season for a new method and a new hive. The results to date are promising!

Experimental colonies with initially different numbers of Varroa mites and different amounts of early brood ended the season with the number of mites, confirmed by alcohol wash, in the amount of 0.8-2 %% to the number of bees. At the same time, the control colony with a large amount of spring brood showed a result of 20.3%. At the same time, no chemicals were used.

The design of the hive is simple and can be used almost anywhere. The hive does not require additional maintenance work from beekeepers. The bees showed good performance in it, having given marketable honey a month and a half after settling in the hives in the form of standard packages with three brood frames. During the entire season, there were no manifestations of viral infections in new hives, while the same package in a standard hive developed into a family affected by Varroa mites and wing deformation viruses, etc.

[PP-159 \[Beekeeping Technology and Quality\]](#)

Apivox Smart Monitor - an unique device for quick determination of the state of bee colony without opening the hive

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Within the frameworks of the Apivox Smart Monitor project, we carried out analytical studies of more than fifty works of well-known world-famous scientists and on the basis of their work, we were able to develop the theoretical foundations of acoustic control of bees. Further, several years of practical research in an experimental apiary made it possible to gain an understanding of the true processes taking place in the hive, which are reflected in the acoustic signals of bees.

It turned out that in fact, what was previously considered to be the true signals of bees and that those who had been engaged in acoustic control before us tried to analyze and use, turned out to be only the sounds of the wings of bees engaged in various works in the hive. It was found, that it is almost impossible to analyze using FFT instruments and