SUMMARY REPORT

New Challenges for Bees: The Way Forward

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Key decision-makers and stakeholders gathered from across Europe in Brussels on 30 September and 1 October for the 4th Edition of the European Bee Week hosted by **MEP Mariya Gabriel**, to ensure that bee health is put at the top of the agenda.

Gaston Franco former MEP welcomed all the participants by making a small account of the topics stressed during the first day of the event; namely, the various factors affecting bee health and the need to adopt innovative concepts of horizontal collaboration, with the view to paving the way forward for the meaningful protection of bees and pollinators.

Bach Kim Nguyen, University of Liège (Gembloux Agro-Bio Tech), BeeOdiversity stressed that so far efforts to safeguard bee colonies have fallen short. In addition, increasing public awareness with regard to the role of bees as pollinators and their subsequent importance to ecosystem functionality is also a challenge that requires further action. Besides, pollinators' beneficial impact is not solely confined to the environment and biodiversity; human health and well being can also be affected. As it has been demonstrated by a recent study, in the event of (natural) pollination being stalled, devastating shortages in fruits and vegetables could arise, undermining global food security standards. Having ruled out practices such as the use of robots or brushes to pollinate flowers, on the grounds of being temporary and unsustainable, it was underlined that adequate solutions can only be found, provided that three main issues are carefully considered: a) the use of pesticides, b) diseases c) the lack of food for bees in the natural environment. However, what still remains the biggest problem is that up until now only sectoral-based solutions have been proposed. This is the reason why more effective 'collaborative models', aiming at bringing scientists, NGOs, decision-makers, farmers, beekeepers and the civil society together need to be adopted. Besides, promoting a holistic and integrative approach, one that would enable everyone to share their knowledge and expertise, could be the only way forward towards preventing the decline of bee populations.

Daniel Sauvaitre, President, World Apple and Pear Association highlighted that it is important for abroriculturists to learn how to live with bees. Given that the essential precondition for the pollination of apple blossoms is to make sure that trees are free of pesticides (as well as insects and parasites), 'pesticide intervention' needs to be carried out in a way that guarantees the protection of bees. Being very supportive of Dr. Nguyen's

proposal to establish a platform of cooperation among stakeholders, he also underlined an example of 'best practice' that was developed in France over 20 years ago, and is currently being implemented there. Under this technical plan, the various research suggestions are integrated and determine the circumstances under which the use of plant protection products is deemed necessary. Otherwise, 'physical practices' are more preferable. In summing up, he emphasized that the road ahead is very difficult both for beekeepers and farmers, since all parameters and distinct interests involved need to be taken into account, so as to strike the right balance.

Chris Hartfield, National Farming Union, UK gave a presentation on the importance of bees (both managed and wild) in pollinating oilseed rape crops and the way in which farmers and growers recognize that importance. It was stated that three things are clear: i) insect pollination is an important contributor to yield and market value (need for pollination varies for different rapeseed varieties), ii) oilseed rape is visited by many different insect pollinators (bees play the most prominent role), and iii) bees face a number of challenges impacting on their populations. Research shows declines in wild bee diversity in Great Britain and other northern European countries were most dramatic between the 1950s and the 1980s. However, since 1990 these declines have significantly slowed-down. More encouragingly, over the last 20 years the biodiversity of solitary bees has increased by 10% in the UK and by 7% in the Netherlands. The evidence put forward by this research seems to run counter to the 'popular and much promoted view' that the really dramatic declines in bee biodiversity are still happening. Interestingly, the dramatic declines in wild bee biodiversity occurred 15 to 45 years before neonicotinoid insecticides were introduced.Other research shows that neonicotinoids reduce farmers' use of foliar insecticide sprays, which, in principle, should be better for the environment. Furthermore, this research shows use of neonicotinoids has resulted in significant benefits to UK oilseed rape yields. Taken together, the scientific evidence highlights that a holistic approach has to be followed when making policy decisions regarding the protection of bees – an approach that protects biodiversity, crop pollination services, honey production and the production of the crop itself. All these elements need to be part of the debate. If we are to put in place wide scale measures to help pollinators, then farming has to be part of this solution. In the UK, for example, farmers work closely with beekeepers' organizations to share their knowledge and opinions on how to better protect bees. For farmers, a National Pollinator Strategy for England focusses on helping provide pollinators with the food and habitat they require, taking care when using pesticides and increasing the use of integrated pest management techniques. In the UK, 9,400 farmers, who manage 2.6 million hectares of farmland, have completed Integrated Pest Management Plans. In 2013, through the voluntary Campaign for the Farmed Environment (CFE), farmers put in place 677,000 hectares of environmental land measures that benefit pollinators. Over the last 2 years, the

CFE also provided over 70 on-farm pollinator training events, reaching around 1,500 farmers. CFE provides online resources about managing farmland for pollinators, and an online training module teaching farm advisors about pollinators. Since 2014, CFE has also helped provide enough subsidized seed to sow nearly 1,500 hectares of flower-rich resources for pollinators.

Marie Antoinette Micheli, Pollinis presented the objectives and mission of POLLINIS, a European independent non-political, non-profit citizen movement that works towards achieving sustainable forms of agriculture within the ecological limits of the environment. It is within the scope of their actions to provide high quality and scientifically sound information both to the public and to policy-makers, in order to support policies that facilitate an environmentally healthy European agriculture. POLLINIS was established to address the concerns of the European citizens, scientists and farmers affected by the increased and intensive use of pesticides during the past 50 years. It is in this context that POLLINIS works alongside farmers in projects to help explore and promote alternative approaches towards agriculture. She also went forward to express strong concerns about the high mortality rate of the endemic dark bee, which in France, for example, went up to 23% between 2013 and 2014, when normally it used to between 5-10%. To a large extent, this can be related to the presence of neonicotinoids, as well as to other factors, such as monoculture or parasites. As it was underlined, dark bee populations can be more effectively protected as long as: i) we limit the imports of other bee species, ii) we promote its benefits among beekeepers, iii) we develop dark bee conservatories, and iv) we ensure that the species is not affected by hazardous chemical substances. To this end, POLLINIS supports several European-based projects that aim at exploring ways in which dark bees can be better preserved.

Peter Campbell Chair of Pollinator Steering Team, European Crop Protection Association delivered a presentation on the role the agricultural industry can play in providing sustainable solutions for bees. First, he referred to two stewardship initiatives taken by the industry to help with pollinators: i) seed treatment (developing deflector technology to minimize dust emissions/promoting best practice and setting quality standards for seed treatment plants) and ii) foliar spray stewardship (endorsing pollinator friendly spraying and drift reduction technology/supporting the development of Dropleg technology to minimize exposure of bees to foliar sprays). With regard to habitat and forage creation for pollinators, reference was made to several projects that have been carried out in collaboration with selected stakeholders. For example, in 'Operation Pollinator' the objective has been to boost the number of pollinating insects in commercial farms. In doing so, specific Field Margins habitats have been created that were tailored to local conditions and native insects. Furthermore, in 'INSPIA' the aim has been to create a European Index for Sustainable

Productive Agriculture based on a set of verifiable indicators, such as the provision of pollinator habitat and forage and the optimised use of pesticides. It was also through this project that 'Best Management Practices' have been validated, demonstrated and communicated across 58 project farms in 4 different European countries. Lastly, in 'Farm4bio' three questions have been addressed: i) Does pro-active habitat management with advisory back up lead to higher levels of biodiversity? ii) Are there relationships between the proportion of uncropped land and levels of biodiversity, and can thresholds be identified? iii) How should this land be arranged in the landscape? Although the project is still ongoing, research undertaken so far suggests that at least a 7% increase in flower-rich habitat is needed, in order to double pollinator abundance. In addition, it was underlined that a considerable number of ECPA companies are already developing and marketing products to help eliminate the harmful impacts of the varroa mite on honey bees. Likewise, there has been a significant investment of capital in 'post-registration' activities –i.e. in monitoring, assessing and mitigating any possible damaging effects of farming products on bees. Last but not least, it was highlighted that a new platform composed of academics, beekeepers, NGOs, farmers, ECPA etc. has been established for the purposes of collecting bee health data across the EU and the world, and for providing guidance and recommendations on bee health improvement in Europe.

Etienne Bruneau Chief Executive, CARI gave an account of the main findings of the beekeepers forum. One of the main conclusions reached at this forum was that although beekeepers across the EU share some commonalities, there are many differences and specificities related to their geographical location. As far as the amount of bee hives is concerned, it is an indisputable fact that the number of colonies has slightly increased. However, the difficulties in producing honey still remain, as a direct result of the declining bee populations. What is more, the European honey market is highly uneven, and thus the production capacities vary across regions. Given also the ever changing climate conditions and their subsequent impact upon flora, beekeepers are faced with very complex and challenging problems. Nevertheless, there is very little acknowledgement of these problems, owing mainly to the lack of awareness on the real value of beekeeping for pollination and ecosystem conservation. From the beekeepers' perspective, strong concerns were expressed about several issues such as: i) the use of pesticides and chemicals with harmful impacts on bee populations, ii) monocropping and its relation to biodiversity loss, iii) the increased production costs, as a result of a destructured market that 'tolerates' massive imports of cheap, artificial honey to the detriment of more expensive, bee-produced honey, iv) labelling and the inability to trace the geographic origin of honey, v) pathogens that put huge pressure on the bee hives, resulting in many bees being killed, vi) the lack of technical platforms that could provide beekeepers with guidance and up-to-date information on the best current practices. In view of the above considerations, it is essential that a more

proactive, flexible and supportive approach vis-a-vis beekeeping is adopted. At the same time, farmer training programs need to be established, in order to make agriculturalists aware of the environmental risks some of the practices they embrace may create.

The discussion with the audience raised the issue of developing indicators with the view to appraising the status of bees across all EU member states. Although both rules and regulations on the use of pesticides have been adopted, monitoring mechanisms are lacking, and, as a consequence, unlawful practices escape punishment. This should be the motivation for setting up appropriate measurement tools, capable of assessing the accurate and real impact of pesticides on bees.

In addition, it was highlighted that the formation of meaningful, 'win-win' partnerships between beekeepers and farmers needs to be a priority goal of EU policy-making. To this end, it is important for both beekeepers and farmers to realize that they face common problems and share complementary responsibilities in terms of resolving those problems. For instance, it was stressed that there have been many cases of growers in the UK who experienced massive crop and/or stock losses, as a direct result of extreme weather conditions/the appearance of new plant diseases/the use of controversial pesticides.

It was also mentioned that seed selection, monocropping and the excessive use of pesticides inevitably lead to the elimination of natural habitats for bees and, practically, to less adequate food resources. In the same context, questions were raised regarding: i) the actions beekeepers are required to take in order to manage insects and harmful substances more effectively, ii) the need to reconcile the seemingly conflicting objectives of biodiversity and agricultural conservation and iii) the current state of research on proposing a 'way-out' of pesticides in the near future. Subsequently, emphasis was given on the need to ensure that both professional and amateur beekeepers receive sufficient and appropriate training. However, this is not an easy task to achieve, given the diversity of situations across the different EU member states. This can be reflected to the already existing 'training models'. On the one hand, there is the well structured German model of training (applied in Germany, Austria, Poland and Belgium), which is based on a network of various training centers that are closely linked to academic and research institutes. Beekeepers coming out of this system tend to be both well informed and highly knowledgeable of all possible risks associated with their profession or hobby (in the cases of amateur beekeepers). On the other hand, there is the training model currently being implemented in Spain, which is much less structured and in some cases even non-existent. In addition, it was stressed that the EU has to put in place research mechanisms, in order to come up with sustainable, long term solutions on how to mitigate the harmful impacts of pesticides and parasites (varroa mite) on bees. Developing knowledge-sharing tools was also highlighted as an issue of major concern, since this could

serve as an efficient means of cooperation and fruitful discourse both within the beekeeping community as a whole as well as among all involved stakeholders. Finally, the discussion called for the need to 'educate' consumers, in a way that they will be able to understand and value the real stakes of production, and the risks (financial and other) assumed both by beekeepers and agriculturalists, so that they are more likely to accept to pay higher prices for maybe 'less beautiful', yet high quality products.

Bach Kim Nguyen, University of Liège (Gembloux Agro-Bio Tech), BeeOdiversity stressed that one of the most positive outcomes of this meeting was that all different sectors were represented and managed to exchange views on how to find adequate solutions to better protect bees. It was also pointed out that there are still gaps that need to be filled, especially in relation to: i) finding effective treatments for diseases, ii) mitigating the impact of pesticides, iii) developing measurement tools and indicators, iv) overcoming the various financial and other market-related obstacles. However, given the general will to collaborate, expectations remain high.

Gaston Franco former MEP closed the meeting by emphasizing the need to find a way to translate all the theoretical models that have been put forward during the discussions into practice. He also reiterated the value of creating platforms of cooperation and information-sharing as well as the need to make good use of the media for the purposes of raising public awareness on the importance of pollinators to ecosystem functionality.

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