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**Aide memoire**

<i>Session</i>	Interlinkages between Biodiversity and Agriculture
<i>Title of presentation</i>	The State of Knowledge on Pollinators, Pollination and Food Production in the World
<i>Name of presenter</i>	Dino J. Martins, Executive Director, Mpala Research Centre and Chair, Insect Committee of Nature Kenya

***Abstract***

The thematic assessment of pollinators, pollination and food production carried out under the auspices of the Intergovernmental Science-Policy Platform on Biodiversity and Ecosystem Services aims to assess animal pollination as a regulating ecosystem service underpinning food production in the context of its contribution to nature's gifts to people and supporting a good quality of life. To achieve this, it focuses on the role of native and managed pollinators, the status and trends of pollinators and pollinator-plant networks and pollination, drivers of change, impacts on human well-being, food production in response to pollination declines and deficits and the effectiveness of responses.

***Key considerations***

- Animal pollination plays a vital role as a regulating ecosystem service in nature. Globally, nearly 90 per cent of wild flowering plant species depend, at least in part, on the transfer of pollen by animals. These plants are critical for the continued functioning of ecosystems as they provide food, form habitats and provide other resources for a wide range of other species.
- More than three quarters of the leading types of global food crops rely to some extent on animal pollination for yield and/or quality. Pollinator-dependent crops contribute to 35 per cent of global crop production volume.
- Given that pollinator-dependent crops rely on animal pollination to varying degrees, it is estimated that 5–8 per cent of current global crop production, with an annual market value of \$235 billion–\$577 billion (in 2015, United States dollars<sup>1</sup>) worldwide, is directly attributable to animal pollination.
- The importance of animal pollination varies substantially among crops, and therefore among regional crop economies. Many of the world's most important cash crops benefit from animal pollination in terms of yield and/or quality and are leading export products in developing countries (e.g., coffee and cocoa) and developed countries (e.g., almonds), providing employment and income for millions of people.
- Pollinator-dependent food products are important contributors to healthy human diets and nutrition. Pollinator-dependent species encompass many fruit, vegetable, seed, nut and oil crops, which supply major proportions of micronutrients, vitamins and minerals in the human diet.

- The vast majority of pollinator species are wild, including more than 20,000 species of bees, some species of flies, butterflies, moths, wasps, beetles, thrips, birds, bats and other vertebrates. A few species of bees are widely managed, including the western honey bee (*Apis mellifera*), the eastern honey bee (*Apis cerana*), some bumble bees, some stingless bees and a few solitary bees. Beekeeping provides an important source of income for many rural livelihoods. The western honey bee is the most widespread managed pollinator in the world, and globally there are about 81 million hives producing an estimated 1.6 million tonnes of honey annually.
- Both wild and managed pollinators have globally significant roles in crop pollination, although their relative contributions differ according to crop and location. Crop yield and/or quality depend on both the abundance and diversity of pollinators. A diverse community of pollinators generally provides more effective and stable crop pollination than any single species. Pollinator diversity contributes to crop pollination even when managed species (e.g., honey bees) are present in high abundance. The contribution of wild pollinators to crop production is undervalued.

#### ***Key discussion points and conclusions***

- Future directions on the state of knowledge: key for making evidence-based policy decisions: it is essential that we continue to develop assessments and tools to inform policy-makers and government decisions around biodiversity.
- Need for more flow of information in multiple directions around the development of policies and practices in sustainable agriculture: both bottom-up and top-down systems of sharing information, feed-back loops and best practices are required so as to conserve biodiversity in the future.

#### ***Key question/s that you would pose at the roundtable discussions***

- How can we better address the lack of connection between policies for biodiversity and those that are centred around development? For example, most governments support biodiversity conservation, but a lack of coordination with other sectors (infrastructure, energy, agriculture) leads to a conflict in practices on the ground, and the loss of species and habitats.
- How can we better communicate the links between biodiversity and ecosystem health as underpinning the life support systems of our planet and our livelihoods?