

**Assessment of the effects of chemical pollution on pollinating bats and bees -  
Strategies for maintaining ecosystem services and honey production (Junior  
Fellowship: Dr. Bruno Djossa)**

Initiative: Wissen für morgen – Kooperative Forschungsvorhaben im subsaharischen Afrika (beendet)

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Agriculture is the dominant activity for about 80% of the households in Benin. Cash crops such as cotton generate substantial income for 54% of the population. Frequently, the production of cash crops is accompanied by significant disturbances to natural ecosystems and the use of chemical fertilizers and pesticides. These substances may affect native plants as well as the pollinators and seed dispersers on which many plants depend for reproduction. Population declines of important mutualistic animals (bees and bats) may negatively impact cultivated crop plants and natural ecosystems. Our study will be carried out in two different agro-climatic zones: Pendjari Biosphere Reserve in the extreme north-western and Dogo-Kétou forest reserve in the central region of Benin. We will quantify pesticide residues in nectar, fruits, honey, and in tissues of bats and bees. Additionally we will monitor plant visitation by bats and bees and analyze pollen grain extracted from honey taken from experimental bee hives. Our study will help to preserve ecosystem services such as the crucial pollination services of both bats and bees as well as the honey production by bees. Ultimately, our project will contribute to development mitigation strategies to reduce the impact of agricultural chemicals on key ecosystem services.

**Projektbeteiligte**

**Prof. Dr. Hartmut Stützel**

Universität Hannover  
Naturwissenschaftliche Fakultät  
Institut für Gartenbauliche Produktionssysteme  
Abteilung Systemmodellierung Gemüsebau  
Hannover

**Dr. Bruno A. Djossa**

University of Abomey-Calavi  
Faculty of Agronomic Sciences  
Abomey-Calavi  
Benin



