# The Pollination of Nepal's Micronutrient-rich Crops in a Changing Climate (Micro-Poll)

Three quarters of crop species depend on pollinators, but the service they provide is under increasing threat from climate change. Declines in pollinators are predicted to have negative impacts on human health as key dietary micronutrients in insect pollinated crops such as vitamin A and folate are lost from the diet. This "hidden hunger" is predicted to cause significant global health burdens. Climate change is already affecting pollinators, for example, the geographic range of bumblebees is shrinking as their southern range moves northwards, the synchrony between flowering plants and their pollinators is being disrupted and climate change is predicted to decrease bee species richness by 8-18% in some areas.

Pollinator loss disproportionately harms developing countries, as they are both less resilient to yield drops and more reliant on the micronutrients found in small-scale pollinator-dependent crops. Providing population-wide vitamin supplementation is neither practical nor sustainable in remote parts of the world; instead, diversifying the diet by increasing access to micronutrient-rich fruits, vegetables and legumes could provide a solution.

Fortunately, pollinator declines can be reversed, at least locally. Moreover, if the effect of climate change on pollinators is understood, habitat management can be used to mitigate against its effects. There is evidence of climate change, pollinator declines and micronutrient deficiency in our focal country Nepal and our research vision has four components: 1) to predict the effect of climate change on crop pollinators in Nepal; 2) to predict the ensuing impact on crop production and micronutrient intake; 3) run a field experiment to test the resilience of insect pollinated crops to climate change; 4) develop a policy and education package to mitigate the effects of climate change on crop pollination and micronutrient intake.

Working with health professionals in Nepal, our international team of natural scientists and health scientists will provide information and innovative solutions for an understudied impact of climate change on human health.

**More information:**

Finnish project leader: Tomas Roslin, University of Helsinki (tomas.roslin@helsinki.fi)

Consortium Leader: Jane Memmott, University of Bristol, UK