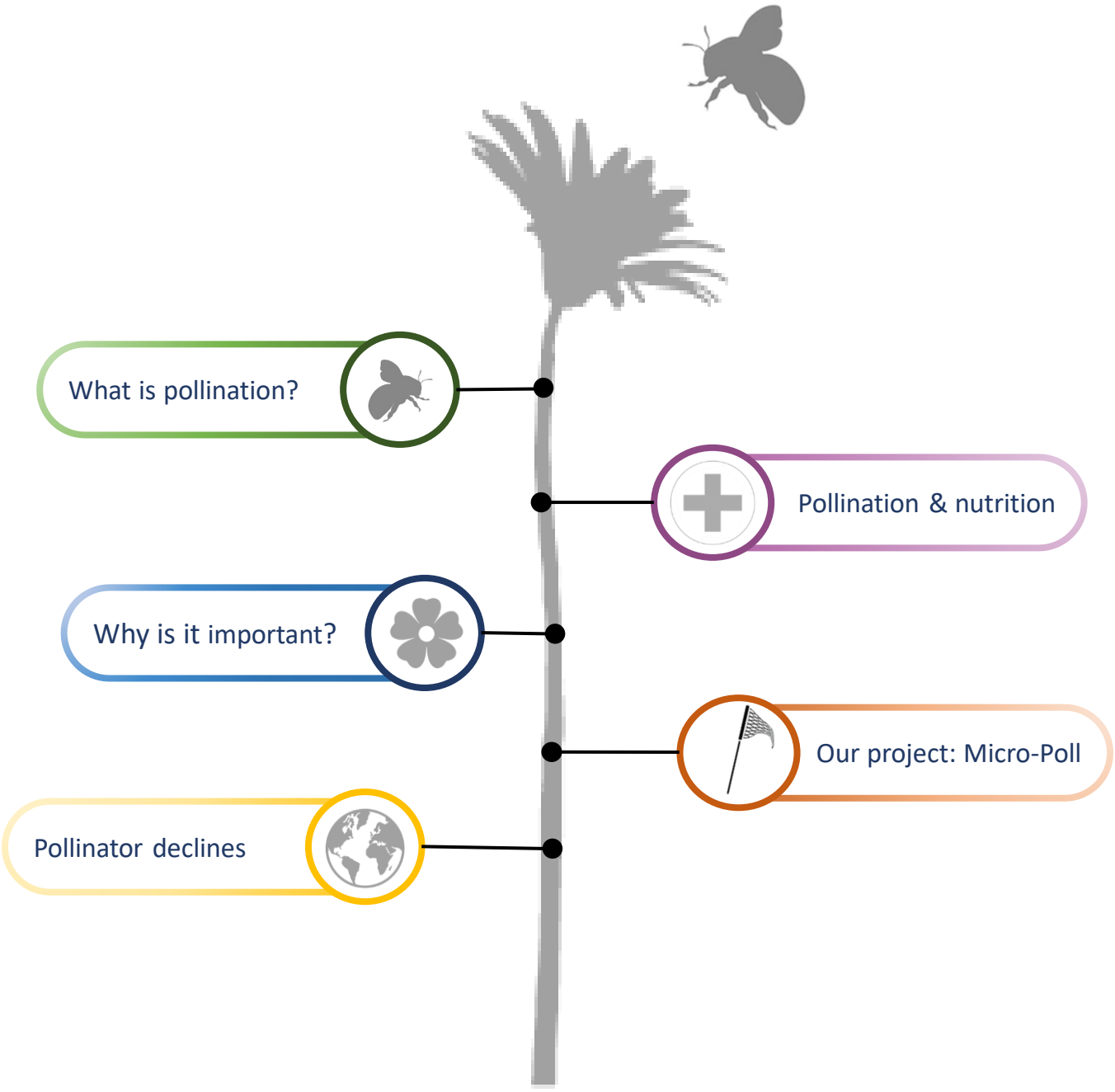
Micro-Poll Resources

OUTREACH & EDUCATION



Micro-Poll

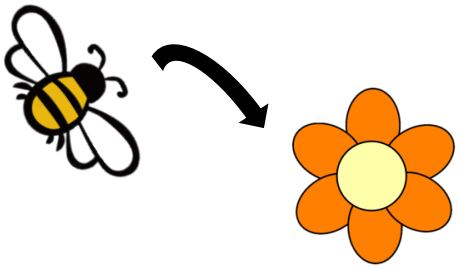
RESOURCE 1

What is pollination?

To make seeds and fruit, plants need to move pollen from one flower to another. This is difficult because plants cannot move…

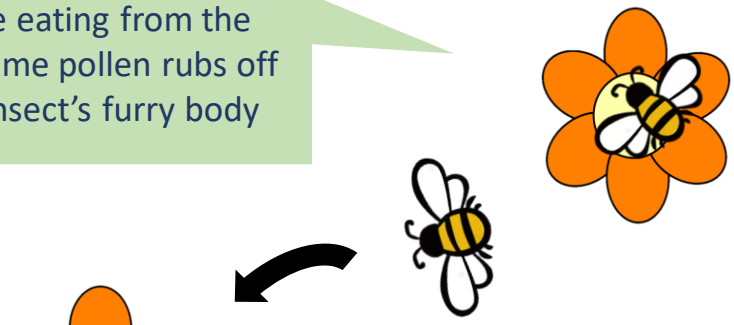
The Solution?

Plants get insects to carry pollen between flowers for them…



1. The bright colours and sweet smell of a flower attracts insects who want to feed on the sugary nectar that flowers produce

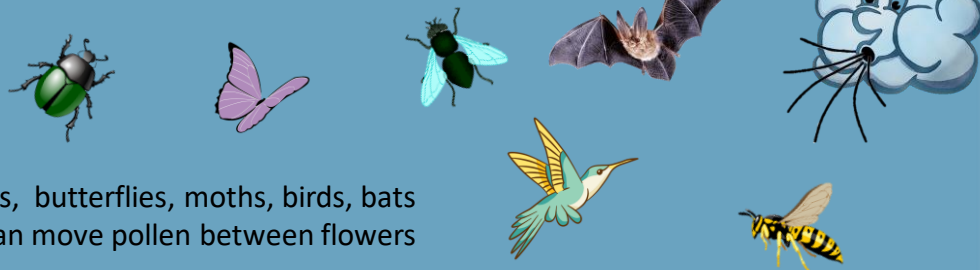
2. While eating from the flower, some pollen rubs off on the insect's furry body



3. The insect carries this pollen to the next flower which fertilises the flower, allowing it to produce seeds and fruit

Different types of pollinator

It's not just bees that pollinate flowers….



… flies, beetles, wasps, butterflies, moths, birds, bats and even the wind can move pollen between flowers

Why is it important?

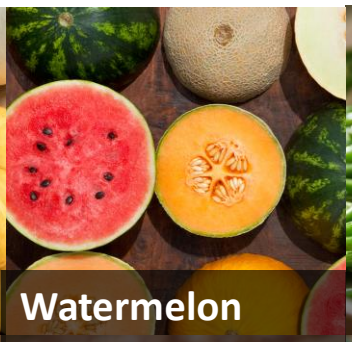
Three out of every **four** crop plants rely on pollination by animals

Nine out of **ten** wild plants rely on pollination by animals
This includes many wild fruits and medicinal plants

The value of pollination to global agriculture is **$500 billion (US)** each year

So without pollinators, farmers would be able to grow **less food**, their income would **go down**, food prices would **go up** and we would all have **less to eat…**

Some examples of insect pollinated crops:



Micro-Poll

RESOURCE 3

Pollinator declines

Pollinators are **declining** across much of the world

Why are they declining?

Habitat loss

Land cleared for farming means there is **less food** from flowers **and fewer places to nest** for pollinators

Climate change

Changing seasons **disrupt the natural lifecycles** of pollinators. Increasing temperatures force them to **move home**

Pesticides

Pesticides are **poisons** to insects - as well as killing crop pests, they also **kill pollinators**

Parasites & disease

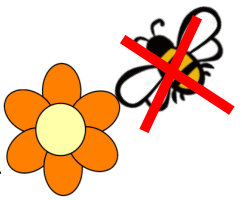
Humans have spread many **new parasites & diseases** around the world – these are affecting pollinators

Most of these threats are driven by the **expansion and intensification of agriculture…**

Pollination & nutrition

Many of our most nutritious crops like fruits, nuts, seeds and vegetables are **highly pollinator dependent**

So if we lose pollinators…



The yields of these nutritious crops will go down…

….and we'll consume less of these important nutrients

This will have negative effects on human health

Complete pollinator loss would result in:

A 20% global reduction in fruits, vegetables, nuts & seeds
An extra **71 million** people deficient in **Vitamin A**
An extra **173 million** people deficient in **folate**
An extra **1.42 million deaths** each year

Smallholder farmers in developing countries are likely to be most affected

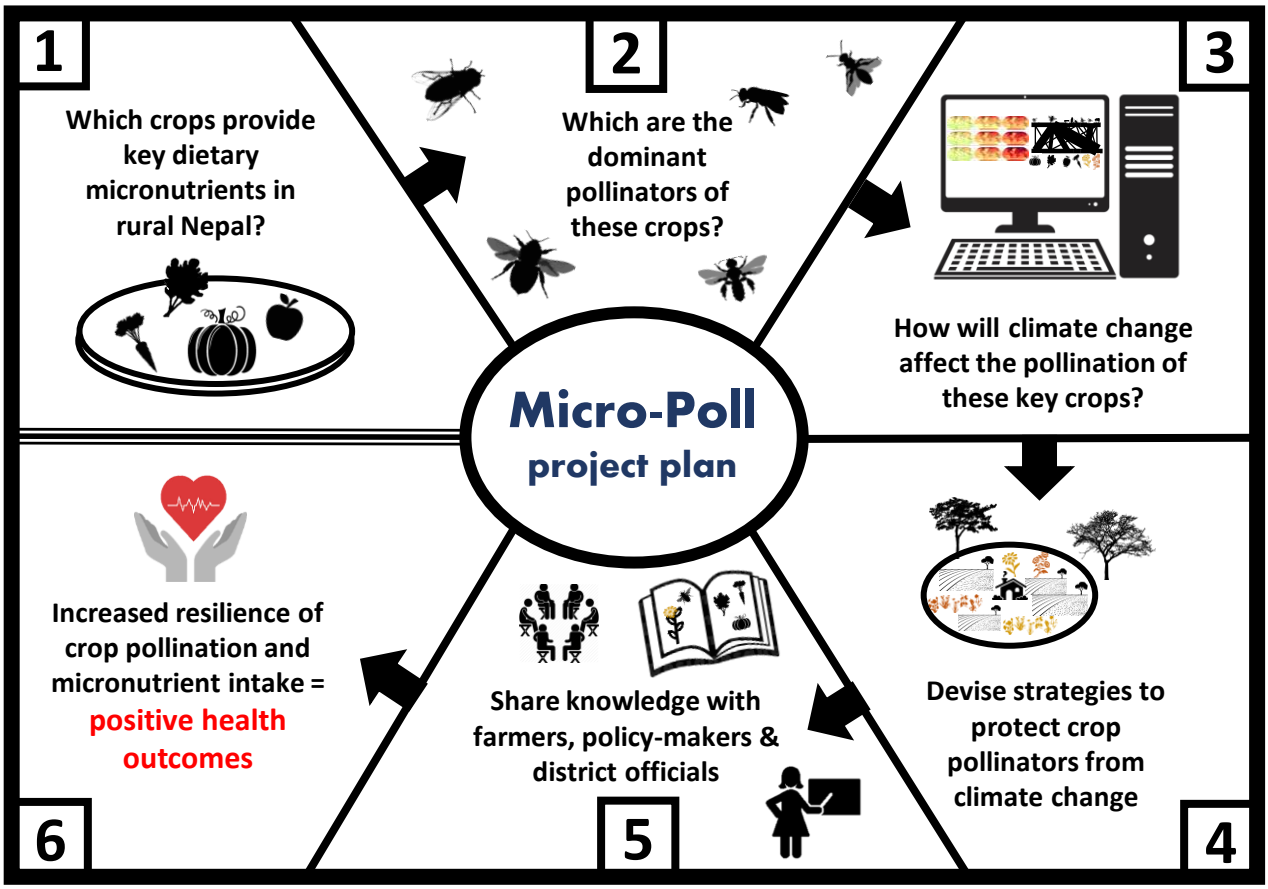
They are highly reliant on nutrients from pollinator-dependent crops…

And have very little flexibility to change farming practices or obtain food from elsewhere

Our project: Micro-Poll

We are a team of pollination ecologists, nutritionists and climate change researchers from around the world and we want to understand:

- How climate change will impact pollinators in Nepal?
- How this will affect the yields of nutritious crops?
- What impact this will have on the health of rural populations?
- What can be done to safeguard pollinators & human health?



Our field site: Jumla District

Why Jumla?

- High proportion of people rely on subsistence farming for food & income
- High rates of micro-nutrient deficiency
- Many pollinator-dependent crops (e.g. apples, pumpkins & buckwheat), so high reliance on pollinators