Economic impacts of Farming with Alternative Pollinators (FAP) in Morocco

*first results of the IKI project on pollinator protection (2017-2022)*

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Youssef Bencharki, Ahlam Sentil, Patrick Lhomme, Moulay Shrif Smaili, Insafe El Abdouni, Laila Hamroud, Oumayma Ihsane
Farming with Alternative Pollinators (FAP) based on TEEB


http://repo.mel.cgiar.org/handle/20.500.11766/8332

And various brochures for farmers

icarda.org
Current approaches to protect wild pollinators are not scalable as Low and Middle Income Countries cannot afford
- rewards for wildflower strips
- sponsored events to provide information and convince stakeholders
Shift from pollinator-friendly agriculture to farmer-friendly pollinator protection

**FAP field**
- Main crop in 75% of the field
- Habitat enhancement in 25% of the field
  * Three-season-forage buffets by *MARKETABLE* plants
  * Shelter (wind, shadow) by crops
  * Nesting support out of local materials
  * Water

**Control field**
Main crop in 100% of the field
We assess the impact of habitat enhancement:

- Insect **diversity** and abundance (pollinators, native enemies, pests)
- Total net income per surface

**Farmers**
- decide on inputs (→ low inputs)
- contribute to selection of habitat enhancement plants
2018 Settat pumpkin field sketch

<table>
<thead>
<tr>
<th>Zucchini</th>
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<tbody>
<tr>
<td>Sunflower</td>
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<tr>
<td>Coriander</td>
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<td>Pumpkin</td>
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<td>Cumin</td>
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- **low investment** for farmers
- **high pay-off** already in the first year
- easy to communicate by **ICT**
Main FAP impacts:

Higher pollinator and predator diversity and abundance

→ More flowers develop a fruit
→ Better quality
→ Less pests/chemicals needed

The 25% zone of FAP fields provides substantial net income as well.

→ Net income per surface much higher, but depending on crop and ecosystem
Based on FAP trials 2013-2014 in Uzbekistan and 2015-2018 in Morocco:

**FAP is scalable across continents**

**Net income increases FAP versus control fields are very high**
(trials in 4 ecological zones of Morocco with different crops)

- Usually more than 50% higher
- Often more than 100% higher
- In trials surrounded by large monocultures of cereals, crops with „essential“ (Klein et al. 2007) pollinator dependency in Morocco income increase can reach up to some hundred percent income increase (trials 2018, replication planned for 2019)

→ **Farmers understand the value of pollinators and native enemies**
The increase is different due to

- The conditions in the respective ecological zone for pollinators
- The pollinator dependency of the respective crop
- The abundance of honeybees during flowering

The higher net income is based on
- Higher productivity of the main crop in FAP fields
- In some cases: better quality or size of the main crop
- The net income from the 25% zone in FAP often exceeds the income from the 25% zone in control, in particular, if the main crop is heavily affected by pests
Full FAP-projects like this IKI-project have 4 steps

*build a scalable model for pollinator protection in Morocco*

- Demonstrate the higher income by FAP by on-farm-trials comparing FAP and control fields to **trigger intrinsic motivation** of farmers for pollinator protection in fields and orchards.

- Planting **pollinator corridors** (wild fruit tree species, berries, medicinal plants) between enhanced agricultural and natural sites in cooperation with farming communities having already positively experienced step 1.

- Nation wide assessments of the value of pollination services and of regions with pollinator lack to **stimulate cooperation of political stakeholders** across sectors.

- **Mainstreaming** pollinator protection by national governments **across sectors**.
We can do it!

Coalition of the Willing on Pollinators COP since CBD 2016
24 member states = ca. 12.5% of all countries worldwide

High awareness of pollinator decline globally

IPBES report spring 2016

FAO next COPs CBD

MEA

IKI project 2017-22 → scalable self-sustaining pollinator protection

Hallmann et al. 2017
Pollinator protection should be feasible in all countries

Let’s do it!

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