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## Farming with Alternative Pollinators Creates High Incentives for Farmers for Pollinator Friendly Agriculture

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### Abstract

Currently, environmental research on pollinator decline does not trigger broad protection of pollinators in particular in agricultural landscapes. Prevailing environmental recommendations, e.g. seeding wildflower strips in and between fields, don't take farmers' interests into account. Farmers prefer income from the entire area and they regard wildflowers as weeds potentially spreading their seeds all over the field. Whereas the new agricultural Farming with Alternative Pollinators (FAP) approach uses marketable plants for habitat enhancement and avoids spread of weeds. FAP triggers farmers' motivation to enhance habitats in fields based on evidence of increased income. FAP measures the impact of enhanced habitats (25 % of the field) on the diversity of pollinators and predators and on the total net income in comparison to control fields having the main crop on 100 % of the field. Pilot projects in Uzbekistan with cucumber and sour cherry as main crops and in Morocco with cucumber as main crop proved high increase of yields of the main crop and higher income per surface based on higher diversity and abundance of pollinators and predators in FAP-fields. In total income from FAP fields was more than double in comparison to control. The incentive of large income gain makes FAP scalable. FAP obviates the need to reward farmers for pollinator-friendly practices. As insect species highly differ in Central Asia and North Africa the approach proved replicability. Trials on more crops are recommended. In case they demonstrate substantial income increases as well, FAP might have high potential to protect pollinators and simultaneously enhance food security. Currently, the increase of horticulture production is mainly based on increase of area, whereas FAP increases the productivity per ha. Thus FAP might reduce the loss of forests and rangelands for establishment of additional fields and orchards. FAP is applicable also in low income countries, which cannot afford subsidies as e.g. the European Union pays.

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