

Farming with Alternative Pollinators (FAP) in regions with adequate rainfall



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This region has mild climate with adequate rainfall. Many smallholders produce vegetables and cereals for self consumption and urban markets nearby. The farms grow different crops, which supports wild pollinators. Hedgerows of cactus and blackberry offer safe nesting areas for pollinators.

**Enhance the diversity of crops and
attract more pollinators to your fields!**



FAP-planting schemes



Protect these effective wild pollinators



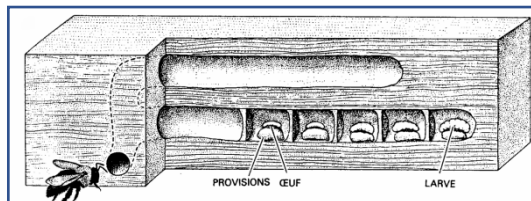
Bumblebees pollinate effectively faba bean, vegetables and fruits. They are social bees. Only the queen hibernates and builds a nest for her colony using abandoned holes of mice or under piles of wood or dead leaves. Protect these nesting areas to benefit from good pollination. service.



Protect these effective wild pollinators



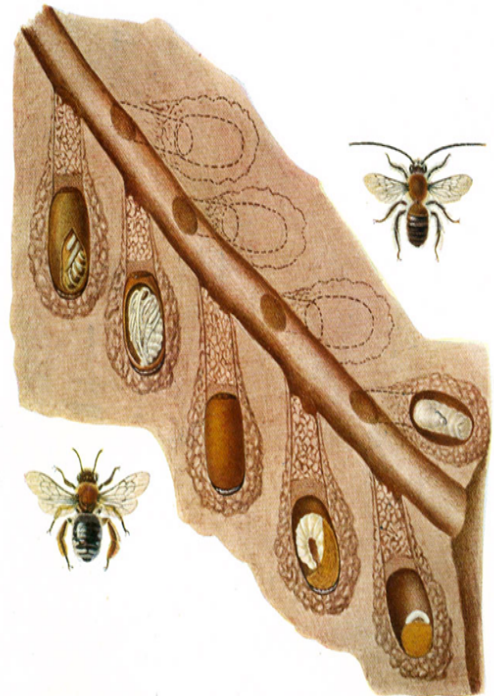
Large carpenter bees pollinate effectively tomato and eggplant using their muscles to vibrate anthers to remove pollen. This phenomenon is called “Buzz pollination”. The females drill their nests in dead wood. They make holes in died wood and put their eggs and pollen balls in many cells. Protect these bees by leaving wood logs near to your farm.



Protect these effective wild pollinators



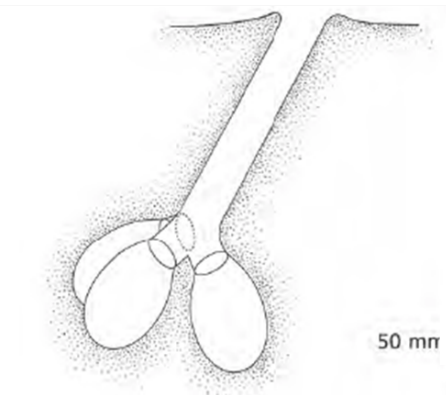
Long-horned bees are effective pollinators of faba bean and arugula. They are long tongued, ground nesting solitary bees. They burrow vertical cells at the end of a rather long lateral gallery. Create patches of bare soil and protect the offspring from tillage, harmful farming practices and chemical amendments to benefit from good pollination service.



Protect these effective wild pollinators



Flower-bees pollinate effectively faba bean and other legumes. They are solitary ground nesting bees that establish their deep burrow in vertical embankments with mixed clay and sand. Create areas of bare banks and protect these bees from tillage to benefit from good pollination service.



Protect these effective wild pollinators



Mining bees count more than hundred species in Morocco. They pollinate open crops like zucchini, pumpkin, coriander and sunflower. They are solitary and ground nesting bees.

They dig their burrow in sandy soil. Then they fill it with pollen, lay their egg and close the hole. It is important to take care of bare sandy area near to crops to allow their nesting.



Protect these effective wild pollinators

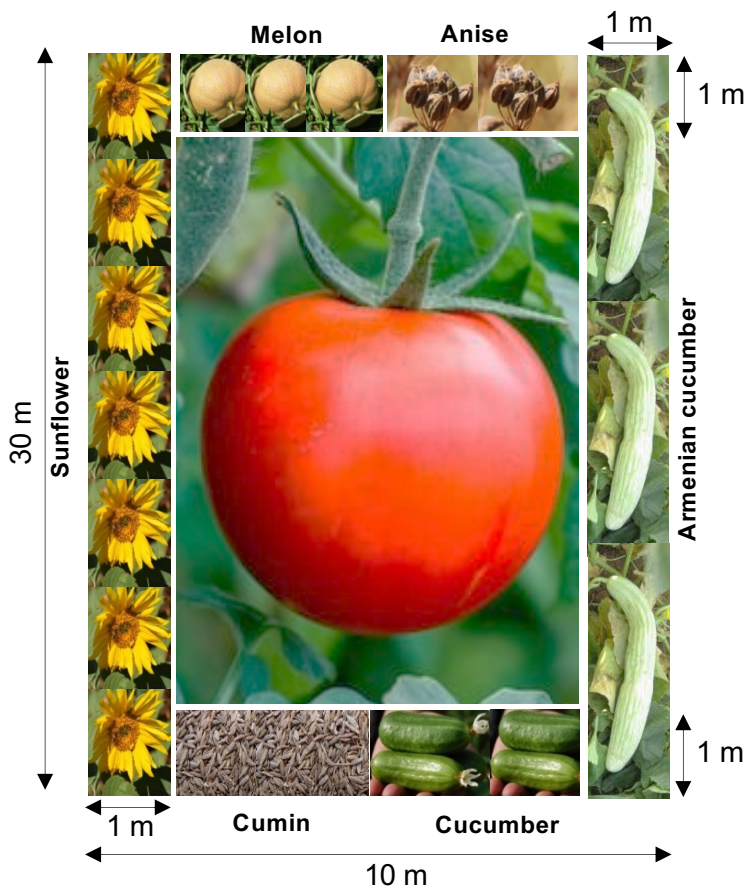


Furrow bees are effective pollinators for several crops (Zucchini, Eggplant, Pumpkin). They are solitary but some species are social. This group of bees is the most abundant and widespread throughout Morocco.

The females build their nests underground in open areas. Leaving bare soil near to the crop is important to protect these bees and benefit from their service.



Marketable habitat enhancement plants to enhance your tomato production and have higher income from the entire field



Main crop: Tomato

Best responding cultivar: Maria

Seeding times

Late March:

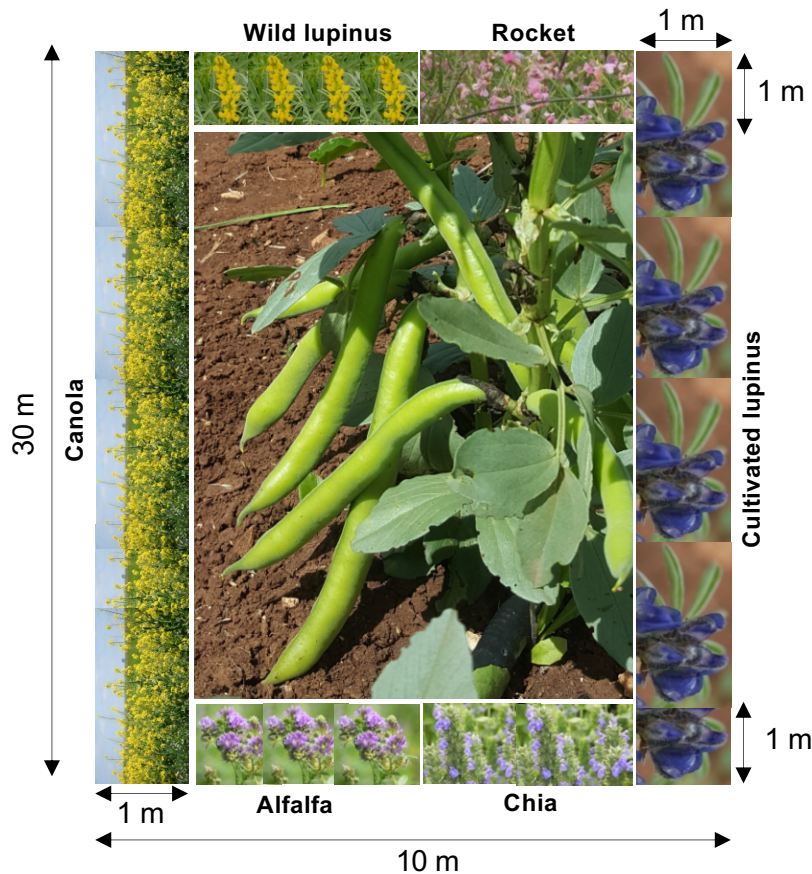
Armenian cucumber, Cucumber, Melon, Anise, Sunflower, Cumin

Planting time

Late April:

Tomato

Marketable habitat enhancement plants to enhance your faba bean production and have higher income from the entire field



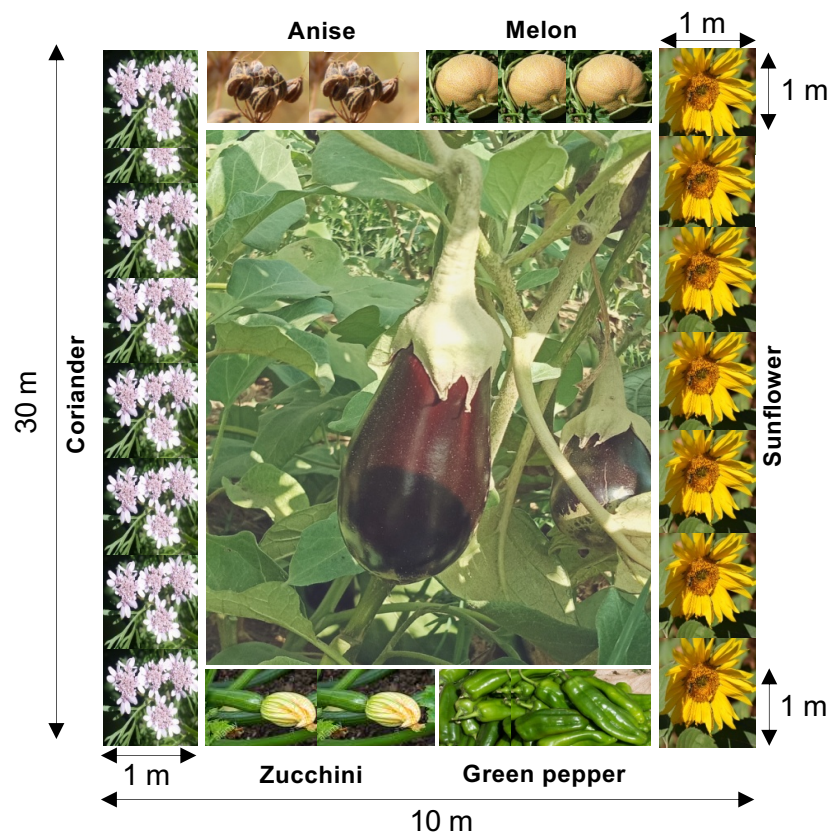
Main crop: Faba bean
Best responding cultivar: Reina mora

Seeding times
Late November:

Rocket, Chia, Canola, Wild lupinus, Cultivated lupinus, Alfalfa

Late November:
Faba bean

Marketable habitat enhancement plants to enhance your eggplant production and have higher income from the entire field



Main crop: Eggplant

Best responding cultivar: Tasca

Seeding times

Late March:

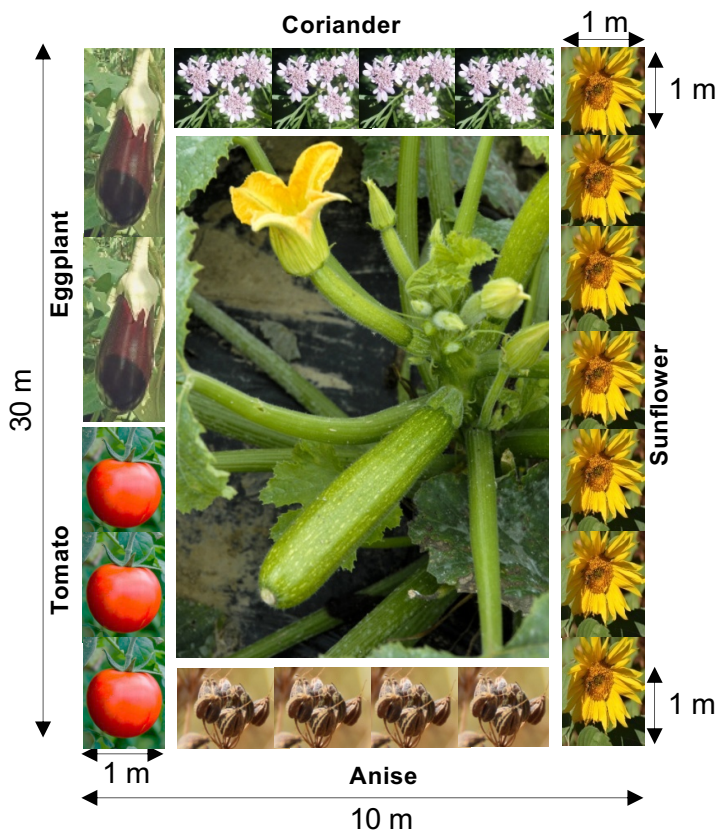
Coriander, Green pepper, Melon, Anise, Sunflower, Zucchini

Planting time

Mid May:

Eggplant

Marketable habitat enhancement plants to enhance your zucchini production and have higher income from the entire field



Main crop: Zucchini

Best responding cultivar: Fadma

Planting times

Late August:

Tomato, Eggplant

Seeding times

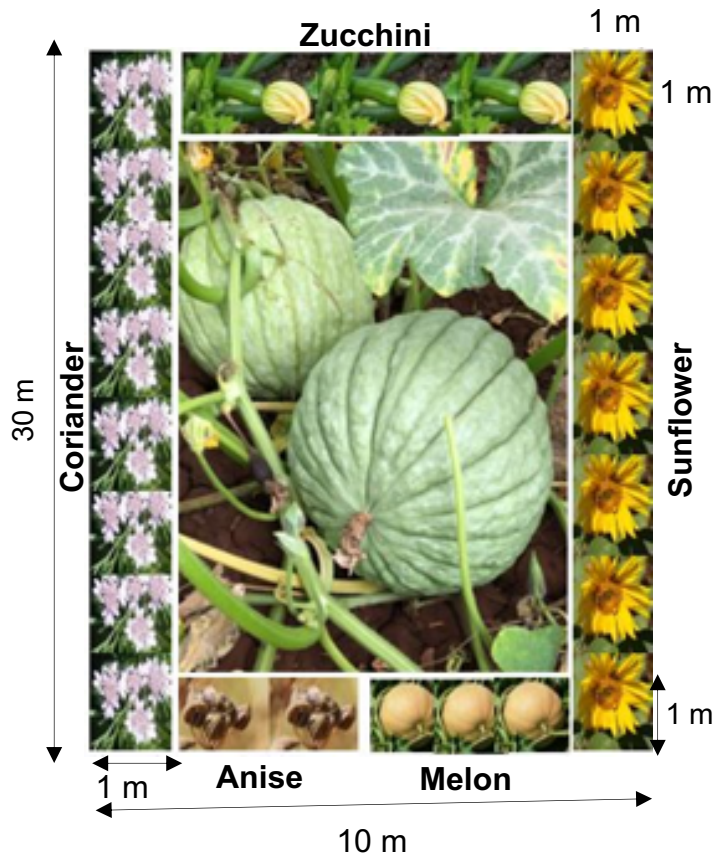
Late July:

Anise, Sunflower, Coriander

Late August:

Zucchini

Marketable habitat enhancement plants to enhance your pumpkin production and have higher income from the entire field



Main crop: Pumpkin

Best responding cultivar: Sbitya (local variety)

Seeding times

Mid May:

Coriander, Zucchini, Sunflower, Melon, Anise

Mid May:

Pumkin



In our trials with smallholder farmers in Kenitra region, FAP farmers had on average 80% higher net income per field than control farmers planting only the main crop in the entire field. FAP-farmers had a higher number of fruits and often very good quality. Pest abundance was substantially reduced.



Use FAP planting designs and protect pollinators



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