# Inspirational ideas

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## Multifunctional buffer zones

### An innovative method to protect the environment and boost production

**"Multifunctional buffer zones" are areas of land surrounding fields on which carefully combined strips of different herbs and grasses are planted. They contribute to the farm and the environment in many ways: minimising the risk of leaching of unwanted substances from arable land, increasing biodiversity by attracting pollinators and 'natural enemies', acting as field roads for farming vehicles to avoid soil compaction, and more. A Swedish Operational Group is testing this concept.**

Two farmers in Odling I Balans, Mats Engquist & Pontus Olsson, inspect their SamZone full of buzzing bumblebees

This Swedish Operational Group, which started in 2017, is led by Odling I Balans ("Farming In Balance") an association started by farmers 1991. The goal of the project is to produce and disseminate a complete cultivation and management concept for multifunctional buffer zones using the "SamZone" method. In order to develop this system, the partners will use scientific data, run tests on pilot farms and use input from farmers, advisers, industry and authorities. The Operational Group involves farmers, agricultural industry representatives, researchers, advisers and an environmental organisation.

### SamZones

The method is based on ideas and experiences from farmers involved in Farming in Balance, combined with results from a survey of existing knowledge of protection/buffer zones on agricultural land in Sweden. In and around arable fields, different mixtures of seeds are planted in strips, and the combination and placement of these strips is carefully considered. It is this specific combination which means that the zones can provide multiple benefits.

### The many benefits

"SamZones have many practical uses for farmers and of course they are also highly beneficial for biodiversity, which brings with it many other advantages for the farm." Says Håkan Wahlstedt, the chairman of Odling I Balance.

Just some of the benefits:
**Reducing leaching**. Acting as a natural barrier, and preventing losses of phosphorus or pesticides from farmland into water bodies.
**Avoiding soil compaction**. Use as field "roads" for farmers to avoid driving heavy machinery on the field itself and therefore protecting the soil from compaction.
**Attracting pollinators**. Providing habitats for pollinators throughout the year. This can improve yields for many types of crops, and can also specifically benefit honey producers.
**Promote natural enemies**. Providing habitats for 'natural enemies' of pests, enabling the farmer to reduce synthetic crop protection products.
**Attract field wildlife.** Providing food and shelter for other wildlife which has environmental benefits.

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## The mixtures and strip combinations

The Operational Group is testing about 20 different seed mixtures on 20 farms, working with a total of about 70 test areas in Sweden. Both perennial and annual seed mixtures are being tested. Several of the combinations contain legumes as they are inexpensive, grow easily and are a good source of pollen and nectar. "According to many sources, the reason why our most precious bumble bees have decreased in number is the fact that flowering red clover is increasingly rare in open-field landscapes." Says Petter Haldén, an adviser from the Swedish Advisory service "Hushållningssällskapet".

"Some of the perennial mixtures include grass to fill holes when the poppy plants die off. We are testing several mixtures. One example is the mixture of honeydew, persian clown, buckwheat, and common vetch, which is cheap and produces very good pollen and nectar. The project is currently testing which of these mixtures is the most suitable" Says the project leader Helena Elmquist.

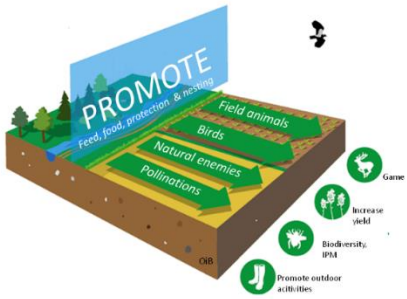
"This is the most fun thing I am doing as a farmer..." says Håkan Wahlstedt, farmer and president of Odling In Balance, when he looks at his lush flowering multifunctional buffer zones filled with bumble bees and wild bees.

## Economic impact

The project examines some of the practical problems associated with cultivating these buffer strips. Being able to sow a mix with different large seeds is one such issue and being able to keep the weeds away is another. For crops where pollination is important for harvesting, profit can be made by growing herbs that support pollinators. But generally, establishing these buffer strips requires additional work from the farmer, and so the cost of this needs to be covered in some way (for instance through the community, or through additional payment in an environmental certification).

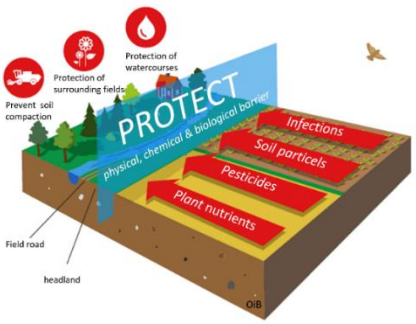
## Dissemination

All experience and knowledge from the farmers testing the Multifunctional buffer zones are documented and compiled into a knowledge base which will be disseminated to others. Various seed drills and soil cultivators are also being tested. "Actually planting the seeds is a bit of a challenge as you need a tool which can handle a mixture of seeds of very different sizes" Says Martin Andersson, one of the farmers in Odling I Balans.




## Project partners

Odling I Balans, Farming In Balance
SLU, Swedish University of Agriculture
Farmers in the Farming In Balance project
Advisory services: Hushållningssällskapet, VäxtRåd, HIR Skåne
Lantmännen, Yara, Svenskt Växtskydd
WWF

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More information on the EIP-AGRI website
More information on the Operational Group webpage
http://eviem.se/en/projects/buffer-strips/

This Operational Group presented their project at the EIP-AGRI workshop Water & Agriculture which took place in 2018 in Almeria. You can read about more of the projects present here.

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