



**Coordinator(s) :** *ES Jensen, IR Chongtham, P Jonsson*  
**Institutes :** *SLU and VÄXA*  
**Location :** *Halland and Lönnstorp, Sweden*  
**Climate :** *Atlantic, annual rainfall (Halland) = 739 mm*  
**Practices :** *Organic livestock farming systems (beef and dairy)*  
**Date of 1st implementation:** *winter 2017*



MAP workshop Jan 2018



Halland and Lönnstorp

## 1. The MAP context:

**Current system:** *Low diversity, risks of nutrient leaching, reduction in soil organic matter, prone to weeds and diseases, dependence on external protein feed, poor feed quality*

**Targets with new crop mixture systems:** *Improved plant nutrient utilisation, self-sufficiency in protein feed, more crop diversity, improve feed quality, develop crop mixtures system that suits to local conditions*

**Socioeconomic context:** *lack of practical knowledge on intercropping systems, expenditure on protein feed*

- Swedish MAP will be linked to WP2 and WP6

## 2. Partners in co-designing

### Main actors involved :

- Farmers, advisors, researchers
- Aims to produce food and feed sustainably taking into account the existing social, economical, ecological and technological conditions
- Research on and advisory services on producing diverse crops

### Farmers :

- 10 organic livestock farmers with interest in diversifying crops and crop mixtures
- Expects to increase quantity and quality of feed, cash income and improve environment
- Involved in designing and field trials
- Some already growing crop mixtures for feed

### Other stakeholders :

County administrative board (Länsstyrelsen), food processing and distribution company in the MAP region

- Several of the farmers knew each other, and advisors from VÄXA (regional advisory Company) have been working together with these farmers
- Researchers from SLU participates in workshop and discussion with other stakeholders in developing cropping systems based on species mixtures

## 3. The crops mixtures in the MAP

- Farmers and advisors identified various issues and ideas on crop mixtures in the workshop held in January 2018
- Farmers are interested in growing cereals together with grain legumes for feed, as well as cash income
- Major challenges identified: maturity time of crop mixtures, sorting of grains, sowing of seeds (mixtures)
- Several farmers expressed willingness to do trials of crop mixtures in their fields
- Using the ideas of different crop mixtures from workshop, few intercropping systems are identified
- Knowledge on competition/facilitation, sowing, harvesting, sorting techniques and marketing are needed

### Crop mixture : Faba bean intercropped with spring wheat

- Possibility to use the crops for cash income as well as feed. Farmers and advisors proposed the mixture
- This mixture is not new but farmers have not grown it yet
- The crop mixture may improve utilisation of nutrients, feed quality, yield and suppress weeds

April: Sowing faba bean at 67% + spring wheat at 33 % on the same day

Sole crops vs. Crop mixtures in relation to different sowing density, sowing dates and use of undersown crops

Red : Modality adapted for mixing species

Black: Modality same as in sole cropping.

Blue : experimental treatments for comparison

November and March: Soil preparation

Requirements for weeding and fertilisation to be determined together with farmers

September: combine harvesting of both crops



Wheat + faba bean



Farming landscape in Halland

**4. Next steps:** *Decide crop mixtures to start mother and satellite trials in spring 2018, share experiences and plan for next years' trials, and identify locally feasible crop mixture systems. Involve value chain actors in the process.*

