Practice Abstract #18

TRansition paths to sUstainable legume-based systems in Europe

Re-diversifying agri-food systems: growing soybean in Scotland

Agri-food system diversity decreased from the early 20th century as mechanisation of food production and processing considerably reduced the range of crops grown. Nitrogen fertilizer dependent small-grains (i.e. cereals mainly) became favoured on a large-scale for common baked- (e.g. bread), fermented- (e.g. beer and neutral spirit) and animal-products (e.g. dairy and meat).

Consequently, legume-based agri-food systems in Europe declined despite the capacity of legumes for biological nitrogen fixation, high-nutritional quality and -crop rotation values. So, while legume supported agri-food systems are sustainable, and Europe is heavily legume-reliant, these legumes (mainly soybean) are imported to meet 80 % of demand - and so the potential environmental and societal benefits are forfeited. Even where legumes are grown, only a small number of species (e.g. peas and beans) are cultivated.

To help develop diversity of agri-food systems in cooler regions of Europe, scientists in Scotland experimented with early maturing (000 genotypes) of soybean. Good grain and whole-crop forage (animal) feed yields were achieved (up to 1.2 and 12 t/ha, respectively). However, this success was only possible where seed for sowing was pre-inoculated with the highest quality ('Rizoliq TOP') rhizobia.

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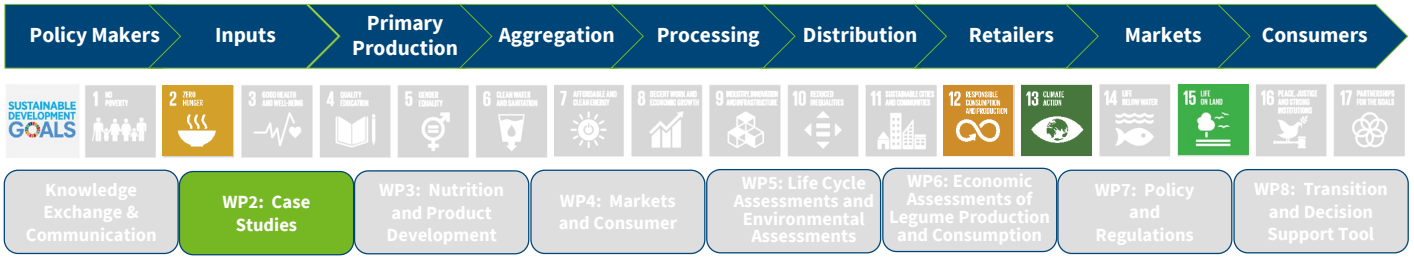

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Good rhizobial seed inoculum is essential to optimise soybean yields. Rhizobia is the common name for soil bacteria that form a symbiosis with legumes to enable natural biological nitrogen fixation.

Various legumes and pulses .

About TRUE

The EU funded project "TRansition paths to sUstainable legume based systems in Europe" (TRUE) is a balanced practice-research partnership of 24 institutions, which aims to identify the best routes, or "transition paths" to **increase sustainable legume cultivation and consumption across Europe** and includes the entire legume feed and food value chains.

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