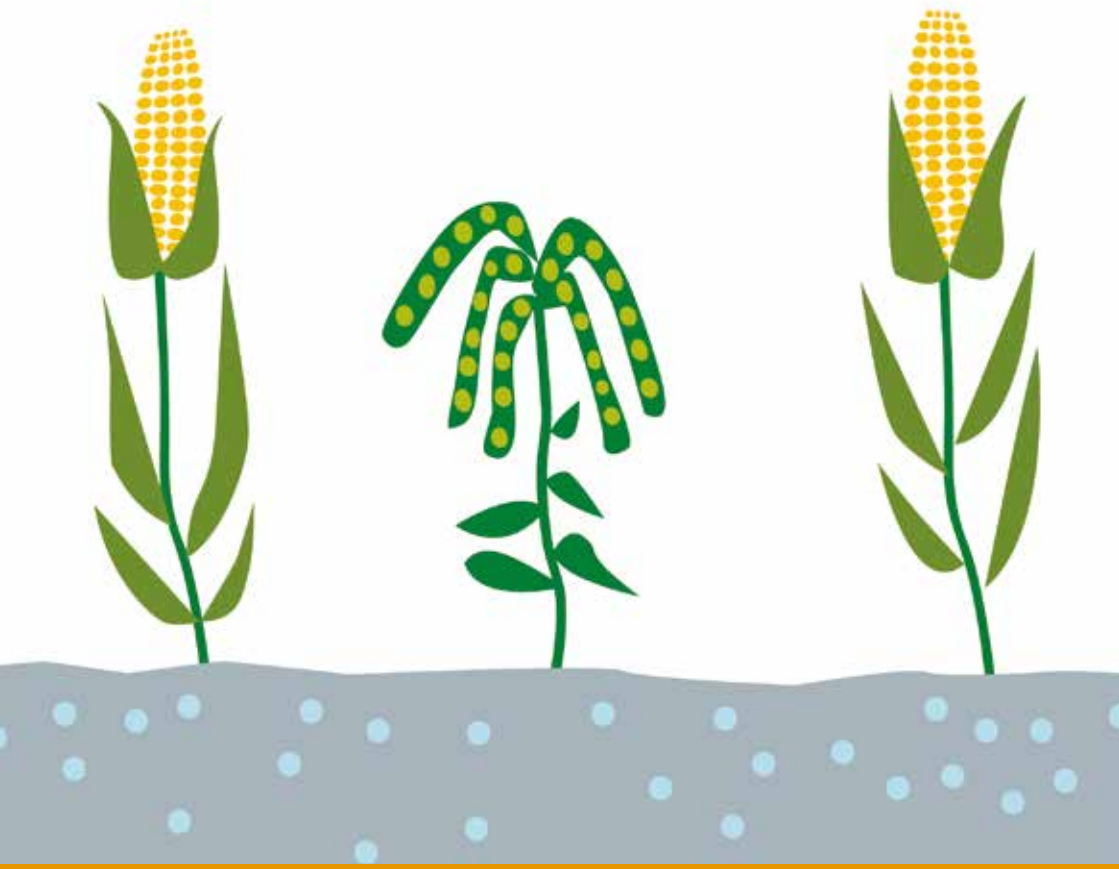
Cowpea then Maize

Increasing yields through innovative intercropping



Top 20 Innovations that Benefit Smallholder Farmers

An innovative approach to intercropping

Intercropping is an indigenous system in which farmers grow two or more crops in the same field. The smallholder farmer is then assured of a diversified food supply and income. Cowpea (*Vigna unguiculata*) is often intercropped with the staple crop, maize (*Zea mays*) with relatively good yields.

But do you know that you can get higher yields by changing the sequence of planting the two crops?

Maize yields can be increased and fertiliser costs reduced by planting cowpea 10 days before maize.

Importance of changing the sequence

- The maize benefits from nitrogen fixed in the soil by the established cowpea crop at the time when the nutrient is needed for optimum growth.
- Cowpea offers a cheap source of protein for the household.

Method

1. Plant cowpea 10 days before maize in alternate rows. Cowpea – 80 cm by 20 cm; maize – 80 cm by 40 cm. Note: Plant erect and semi-erect cowpea varieties.
2. Apply NPK fertiliser to maize in poor soils. Cowpea may also benefit from fertiliser. However no top dressing with nitrogen fertiliser is required for maize.
3. Control insect pests in cowpeas at 10-day intervals starting from 30 days after planting. First insecticide spray may also control stem borers in maize.
4. Timely weeding is required. Remember, it is cheaper to control weeds at an early stage!
5. To maintain a healthy cropping system, rotate the maize/cowpea intercrop with cassava, vegetables and/or fallow.

Benefits

- Innovation ensures household food and nutrition security in the face of land scarcity and threat of weather failure for resource-poor farmers.
- Increased crop productivity.
- Healthy soils.
- Harvesting periods well-spaced out enabling farmers to properly dry each crop before further processing.
- No additional labour required.
- No nitrogen top dressing is required, which reduces cost of production.

Recommendations

- Extension officers should conduct demonstrations, use farmer field schools and other approaches to disseminate the innovation.
- Research to conduct further studies on pest and disease control, spacing, social impact and other relevant aspects of the intercropping innovation.

Case study

Kwabena Mensah and his wife Mary Gyanwaa love to grow cowpeas. They live in Patimpa village near Akokoaso in the Akyemansa district, Eastern Region of Ghana where they cultivate cocoa and citrus. Scarcity of land compelled them to intercrop cowpeas with maize. The Mensahs originally adopted the traditional extension message of growing maize first and then planting cowpea once the maize had grown tassels.

The couple experienced near total crop failures in two consecutive years – 2000 and 2001 – when the rains ceased during the growing season. The Mensahs then reasoned that if they had planted cowpea first they would have obtained optimum harvests before the rains ceased.

They experimented with the sequencing by sowing cowpea first, then maize 10 days later. With the new practice Kwabena and Mary could obtain an increase in maize yield of 11% and earn additional income from the sale of cowpeas, equal to around €320 per year from their 0.4 ha (1 acre) farm.

Some of their farm produce is now being used in the school community feeding programme and many other farming families have adopted the innovation and are planting cowpea before maize.

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