PROTECTING SOIL THROUGH CONSERVATION AGRICULTURE

OBJECTIVE

Protect the soil from erosion and degradation, improve soil quality and biodiversity, preserve the natural resources and increase their use efficiency, while optimizing crop yields.

DESCRIPTION

Conservation agriculture is *"a farming system that promotes maintenance of a permanent soil cover, minimum soil disturbance, and diversification of plant species. It enhances biodiversity and natural biological processes above and below the ground surface, which contribute to increased water and nutrient use efficiency and to improved and sustained crop production"* (FAO).
Minimum soil disturbance is characterized by reduced tillage practices (such as ploughing, harrowing, and all the tillage operations ordinarily applied to prepare the soil for seed germination, seedling establishment and crop growth and production) through direct seeding and/or direct fertilizer placement. It helps to improve soil properties, preserve and increase soil organic matter, and hence reduce soil erosion.
Crop diversification is the practice of cultivating more than one species in a given agricultural area, in the form of crop rotation and/or association. The diversification in cultivated species increases the adaptation capacity of agricultural systems to climate change by improving soil fertility and structure, soil water holding capacity and water and nutrients distribution through the soil profile, helping to prevent pests and diseases, and increasing yield stability.
Permanent soil organic cover with crop residues and/or cover crops (e.g. legumes, cereals, or other crops planted between the main crops, primarily for the benefit of the soil rather than the crop yield) enables climate change adaptation by reducing soil erosion and degradation which can be exacerbated by the impact of extreme weather events (e.g. extreme precipitations, droughts and periods of soil saturation, extreme heat, strong wind events) and improving the stability of the conservation agriculture system.

EXPECTED RESULTS

It helps to protect the environment and to reduce both the impacts of climate change on agricultural systems (adaptation) and the contribution of agricultural practices to greenhouse gases (GHG) emissions (mitigation) through sustainable land management.

RESULT INDICATORS

Number of ecosystem services provided

INVOLVED ACTORS

Farmers, farm advisory services, researchers, policy makers.

EXPECTED TIMELINE FOR ACTION

- Short term (1-4 years)

BEST PRACTICES

- Montpellier
- Alenteyo
- Segovia – Spain
- Heilbronn – Germany
- Italy
- Friuli Venezia Giulia Autonomous Region – Italy
- Marche Region - Italy
- Apulia Region - Italy
- Dubrovačko-Neretvanska County – Croatia

CRITICALITIES

There are limiting factors for small farm dimensions, for the implementation of practices that require investments in machinery. Other limiting factors include the inadequate dissemination of knowledge and good practices, the insufficient collaboration between researchers and farm advisory services and the lack of support to farmers.

SCOPE OF THE ACTION

- Adaptation
- Mitigation

TYPE OF PROPOSED ACTIONS

- Green

SECTOR OF ACTION

- Agriculture / Forests / Land use
- Biodiversity / Conservation of ecosystems
- Water resource management

CLIMATE IMPACTS

- Drought
- Other

IMPLEMENTATION SCALE

- Municipality
- Region / Country

SOURCE

https://climate-adapt.eea.europa.eu/help/share-your-info/general/conservation-agriculture