CGIAR Innovation Packages and Scaling Readiness (IPSR)

INNOVATION PROFILE

Conservation agriculture in maize-legume farming systems in southern Africa

Conservation agriculture (CA) is a cropping systems based on three interlinked principles: minimum soil disturbance, crop residue retention and crop diversification through rotation and intercropping. CA is applicable to small-, medium-, and large-scale farmers and can be adapted to their context.

2022
1st Edition

Conservation Agriculture (CA) is based on three key principles: minimum soil disturbance, provision of permanent soil cover and the use of rotations or associations amongst other good agriculture practices. These CA principles are applicable to a wide range of crop production systems from low-yielding, rainfed conditions to high-yielding, irrigated conditions. However, the techniques used may vary from place to place depending on farm power, system management conditions and farmer circumstances. CA aims at rebuilding the soil, optimizing crop production inputs especially labour, and increasing profits. The social and economic benefits gained from combining production and protecting the environment under CA, including reduced input and labour costs, are greater than those from production alone. With CA, farming communities become providers of more healthy living environments for the wider community through reduced use of fossil fuels and through conservation of environmental integrity and services. CA in maize-legume systems addresses major production challenges in farming areas of Eastern and Southern Africa where both cereals and legumes are commonly grown.

INNOVATION TYPOLOGY

This innovation is characterized as

Technological Innovation

Innovations of technical/material nature, including varieties/breeds; crop and livestock management practices; machines; processing technologies; big data and information systems.

The nature of this innovation is

Incremental Innovation

Innovations that already exist and undergo constant, steady progress and improvement.

THIS INNOVATION IS EXPECTED TO CONTRIBUTE TO THE FOLLOWING IMPACTS

CGIAR Impact Areas and Collective Global Targets

- **1** Nutrition, health & food security — Targets: **1.1**
- **2** Poverty reduction, livelihoods & jobs — Targets: **2.1**
- **3** Gender equality, youth & social inclusion — Targets: **3.1**
- **4** Climate adaptation & greenhouse gas reduction — Targets: **4.2 | 4.3**
- **5** Environmental health & biodiversity — Targets: **5.1**

Learn more: https://www.cgiar.org/how-we-work/strategy

SDGs and SDG Targets

- **2** End hunger,achieve food security and improved nutrition and promote sustainable agriculture — Targets: **2.1 | 2.2 | 2.3 | 2.4**
- **5** Achieve gender equality and empower all women and girls — Targets: **5.1 | 5.5**
- **13** Take urgent action to combat climate change and its impacts — Targets: **13.1 | 13.2 | 13.3 | 13.b**
- **15** Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss — Targets: **15.2 | 15.3 | 15.b**

Learn more: https://sdgs.un.org/goals

CGIAR INITIATIVES, PARTNERS AND GEOSCOPE

CGIAR Lead Initiative

Ukama Ustawi: Diversification for resilient agribusiness ecosystems in East and Southern Africa (ESA)

CGIAR Contributing Initiative(s)

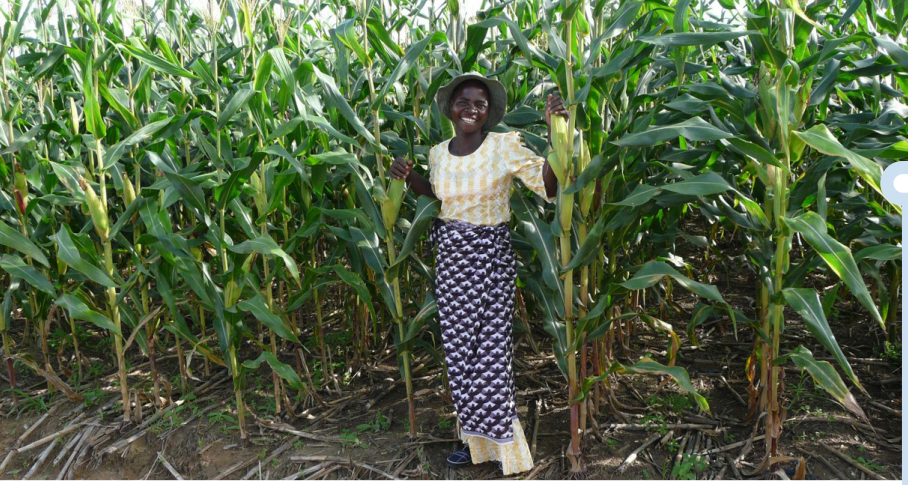
Sustainable Intensification of Mixed Farming Systems

This innovation is developed, tested and/or scaled for/in the following countries

Partners involved

Type of partners / Partnerships

National Government
Local Government
National NGO
Regional NGO



ACKNOWLEDGEMENTS

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MORE INFORMATION

Websites and Documentation

- https://ccafs.cgiar.org/resources/publications/conservation-agriculture-implementation-guidance-policymakers-and
- https://repository.cimmyt.org/handle/10883/4250?locale-attribute=en

Contact Person

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Please refer to this Innovation Profile as

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https://hdl.handle.net/10568/121978

CURRENT INNOVATION READINESS

9 — PROVEN INNOVATION
The innovation is validated for its ability to achieve a specific impact under uncontrolled conditions

8 — UNCONTROLLED TESTING
The innovation is being tested for its ability to achieve a specific impact under uncontrolled conditions

7 — PROTOTYPE
The innovation is validated for its ability to achieve a specific impact under semi-controlled conditions

6 — SEMI-CONTROLLED TESTING
The innovation is being tested for its ability to achieve a specific impact under semi-controlled conditions

5 — MODEL/EARLY PROTOTYPE
The innovation is validated for its ability to achieve a specific impact under fully-controlled conditions

4 — CONTROLLED TESTING
The innovation is being tested for its ability to achieve a specific impact under fully-controlled conditions

3 — PROOF OF CONCEPT
The innovation's key concepts have been validated for their ability to achieve a specific impact

2 — FORMULATION
The innovation's key concepts are being formulated or designed

1 — BASIC RESEARCH
The innovation's basic principles are being researched for their ability to achieve a specific impact

0 — IDEA
The innovation is at idea stage

Innovation Readiness Justification

Conservation agriculture (CA) has been tried and tested in southern Africa since 1992 and has generated a wealth of knowledge and research results. In Malawi it was released in 2017 as an improved technology. In 1999 it was officially gazetted by the Zambian Government as a technology to be used by smallholder farmers to address soil fertility decline and low productivity. In Zimbabwe it is currently targeted by the Ministry of Agriculture to 3.2M smallholders showing a strong proof of concept and benefits for farmers and the society. CA has been at the centre for research and development activities by international research centers and NGOs ever since.

Evidence supporting the Innovation Readiness Level

bit.ly/3DIydyx

bit.ly/3BCDODW