

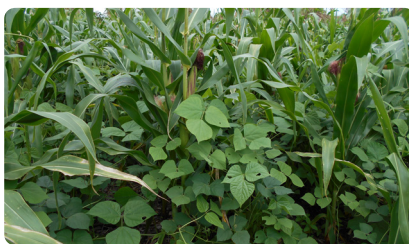
TRADITIONAL MAIZE / LEGUME INTERCROPPING

In maize-legume intercropping, two or more crops are grown simultaneously by smallholders in the same cropping season sharing the same piece of land. This practice reduces the risk of total crop failure and improves nutritional yields. Soil fertility is improved through organic matter build-up and biological nitrogen fixation by the companion leguminous crops. Soil moisture is conserved through improved in-situ soil cover.

2022
1st Edition

Intercropping is traditionally practiced by land constrained smallholder farmers sometimes living in steep and/or uneven terrain. Intercropping is the practice of growing two or more crops in the same area, at the same time.

In general, intercropping is better suited to farmers with small landholdings whereas crop rotation is more suitable for farmers with larger landholding. However, there are other factors such as household needs and farm economics that determine choice of these two practices. The land equivalent ratio (LER) is often used to measure benefits of intercropping compared to planting a single crop (sole cropping). The LER is defined as the land required for production of the same yield in the sole crops compared with the intercrop. A LER greater than 1 indicates intercropping is advantageous to sole crops.



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

	Nutrition, health & food security	1
Targets: 1.1		
	Poverty reduction, livelihoods & jobs	2
Targets: 2.1		
	Gender equality, youth & social inclusion	3
Targets: 3.1		
	Climate adaptation & greenhouse gas reduction	4
Targets: 4.1 4.2		
	Environmental health & biodiversity	5
Targets: 5.1		

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

SDGs AND SDG TARGETS

	End poverty in all its forms everywhere	1
Targets: 1.1 1.2 1.4 1.5		
	End hunger, achieve food security and improved nutrition and promote sustainable agriculture	2
Targets: 2.1 2.2 2.3 2.4 2.c		
	Ensure healthy lives and promote well-being for all at all ages	3
Targets: 3.2		
	Achieve gender equality and empower all women and girls	5
Targets: 5.b		
	Ensure sustainable consumption and production patterns	12
Targets: 12.1 12.2 12.3		
	Take urgent action to combat climate change and its impacts	13
Targets: 13.1 13.2 13.3 13.a 13.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)

Accelerated Breeding (ABI) Meeting Farmers' Needs with Nutritious, Climate-Resilient Crops
Sustainable Intensification of Mixed Farming Systems

Market Intelligence and Product Profiling
Excellence in Agronomy for Sustainable Intensification and Climate Change Adaptation (EiA)

THIS INNOVATION IS DEVELOPED, TESTED AND/OR SCALED FOR/IN THE FOLLOWING COUNTRIES



TYPE OF PARTNERS / PARTNERSHIPS

- National Government
- Local Government
- Other Public Sector
- International NGO
- National NGO
- Regional NGO
- Academic, Training and Research



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



ACKNOWLEDGEMENTS

We would like to thank all Funders who support this innovation through their contributions to the **CGIAR Trust Fund** (<https://www.cgiar.org/funders/>).



MORE INFORMATION

WEBSITES AND DOCUMENTATION

- <https://repository.cimmyt.org/bitstream/handle/10883/21206/63240.pdf?sequence=1&isAllowed=y>
- <https://repository.cimmyt.org/xmlui/handle/10883/21741>

CONTACT PERSON

For more information on this innovation please contact **Dr. Christian Lutz Thierfelder** (c.thierfelder@cgiar.org)

PLEASE REFER TO THIS INNOVATION PROFILE AS

Thierfelder C., 2022. Traditional Maize / legume intercropping. Innovation Packages and Scaling Readiness (IPSR) Innovation Profile. CGIAR, October 2022.
<https://hdl.handle.net/10568/125518>

INNOVATION READINESS JUSTIFICATION

Maize-legume Intercropping is already being practiced by many smallholders in southern Africa and has been the focus of a large body of research. There is sufficient evidence that intercropping adds value and can be scaled widely.

EVIDENCE SUPPORTING THE INNOVATION READINESS LEVEL

bit.ly/3MMFZtZ

bit.ly/3TIRJ9J

bit.ly/3eMqkhq

bit.ly/3CP2NEy