

## STRIP INTER CROPPING: DOUBLE ROW AND FOUR-ROW SYSTEM

Strip cropping is an improved intercropping strategy for smallholder farmers that capitalize on a better plant arrangement (e.g., how cereal rows relate to legumes). Two types of strip cropping are common: Double-row strip cropping and four row strip cropping.

2022  
1st Edition

**Double-row strip cropping:** This system reduces the plant spacing of maize rows to open up space for legumes to grow. Maize is usually intercropped with a legume (i.e., groundnuts/soya beans/cowpeas/beans). Maize is planted into rip-lines opened in double rows (50cm inter-row x 25cm in-row) and a gap of 130cm is left in-between the maize double rows where legumes will be planted [groundnut (35cm inter-row x 30cm in-row); soya beans (35cm inter-row x 5cm in-row)]

**Four-row strip cropping:** Similar to double row strip cropping above, four rows of maize alternate with four rows of a legume. However, the inter-row spacing of maize is reduced from the usual 90 cm to 45 cm. This narrowing and reduction in size increases growing space for four rows of legumes. Maize is planted into lines spaced at 45 cm inter-row with 4 row strips of maize alternating with another 4 rows strip of soya beans/groundnuts also spaced at 45 cm between rows.



### 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

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

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

### SDGs AND SDG TARGETS

	<b>End poverty in all its forms everywhere</b>	<b>1</b>
Targets: 1.1   1.2		
	<b>End hunger, achieve food security and improved nutrition and promote sustainable agriculture</b>	<b>2</b>
Targets: 2.1		
	<b>Ensure healthy lives and promote well-being for all at all ages</b>	<b>3</b>
Targets: 3.1		
	<b>Achieve gender equality and empower all women and girls</b>	<b>5</b>
Targets: 5.b		
	<b>Ensure sustainable consumption and production patterns</b>	<b>12</b>
Targets: 12.1   12.2		
	<b>Take urgent action to combat climate change and its impacts</b>	<b>13</b>
Targets: 13.1   13.2		
	<b>Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</b>	<b>15</b>
Targets: 15.2   15.3		

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



## CGIAR INITIATIVES, PARTNERS AND GEOSCOPE

### CGIAR LEAD & CONTRIBUTING INITIATIVE

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

### CGIAR CONTRIBUTING INITIATIVE(S)

**Excellence in Agronomy for Sustainable Intensification and Climate Change Adaptation (EiA)**  
**Sustainable Intensification of Mixed Farming Systems (SI-MFS)**

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
- Regional NGO
- Public-Private Partnership
- 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://www.cgiar.org/research/publication/sustainable-intensification-practices-for-smallholder-farmers-in-zambia-a-farmers-manual/>
- <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](mailto:c.thierfelder@cgiar.org))

PLEASE REFER TO THIS INNOVATION PROFILE AS

*Thierfelder C., 2022. Strip Inter cropping: Double row and Four-row system. Innovation Packages and Scaling Readiness (IPSR) Innovation Profile. CGIAR, October 2022. <https://hdl.handle.net/10568/125516>*

#### 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/3fgn9OT](https://bit.ly/3fgn9OT)

[bit.ly/3UsixFL](https://bit.ly/3UsixFL)

[bit.ly/3SaoUvE](https://bit.ly/3SaoUvE)