

GREEN MANURE/COVER CROPS FOR IMPROVED LIVESTOCK FEEDING

Green manure/cover crops are cultivated for the purpose of soil fertility improvement, grazing by livestock or preserved as silage. Forage crops assist in achieving production targets for attributes such as growth or weight gain and to make up seasonal shortfalls between feed demand and supply. The innovation is applicable for small and large-scale livestock keepers.

2022
1st Edition

Green manure/cover crops (GMCC) are plants that are grown in cropping systems not primarily for their grain but to provide groundcover, feed, and to fertilize the soil. In most cases green manures are legumes that fix nitrogen from the air and, once killed by rolling, spraying or uprooting, provide large amounts of biomass. GMCCs may be grown either as rotational crops or as intercrops with the main crop. When they are introduced as intercrops, they are commonly killed before introducing the next main crop. Cover crops may be annual or perennial and in the case of being perennial, they may be maintained into the next season without replanting. Cover crops may be either leguminous or non-leguminous crops. Leguminous cover crops are mostly preferred by resource-constrained farmers due to their residual nitrogen effect. GMCCs have different growth habits and hence give different benefits depending on their characteristics. They also may serve different purposes in the farming systems depending on their local context.



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 2.2		
	Gender equality, youth & social inclusion	3
Targets: 3.1 3.2		
	Climate adaptation & greenhouse gas reduction	4
Targets: 4.1 4.2 4.3		
	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		
	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		
	Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all	4
Targets: 4.3 4.4		
	Achieve gender equality and empower all women and girls	5
Targets: 5.5 5.a 5.b		
	Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation	9
Targets: 9.3		
	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)

Network 4 Enabling Tools, Technologies, and Shared Services (N4ETTSS)

Accelerated Breeding (ABI) Meeting Farmers' Needs with Nutritious, Climate-Resilient Crops

Sustainable Intensification of Mixed Farming Systems

Sustainable Animal Productivity for Livelihoods, Nutrition and Gender inclusion (SAPLING)

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/>). Additional bilateral investment for this innovation has been provided by ACIAR.



MORE INFORMATION

WEBSITES AND DOCUMENTATION

- <https://repository.cimmyt.org/xmlui/handle/10883/21741>

CONTACT PERSON

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PLEASE REFER TO THIS INNOVATION PROFILE AS

Thierfelder C., 2022. Green manure/cover crops for improved livestock feeding. Innovation Packages and Scaling Readiness (IPSR) Innovation Profile. CGIAR, October 2022.
<https://hdl.handle.net/10568/125401>

INNOVATION READINESS JUSTIFICATION

The innovation is ready for scaling and has been tried and tested under ZIMCliffs and other crop livestock projects.

EVIDENCE SUPPORTING THE INNOVATION READINESS LEVEL

bit.ly/3xOg1jc

bit.ly/3R6lCbI

bit.ly/3UzFvdR

bit.ly/3UxpUM0

bit.ly/3Sarn9B

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