

# **Drop-in call 2: Climate session**

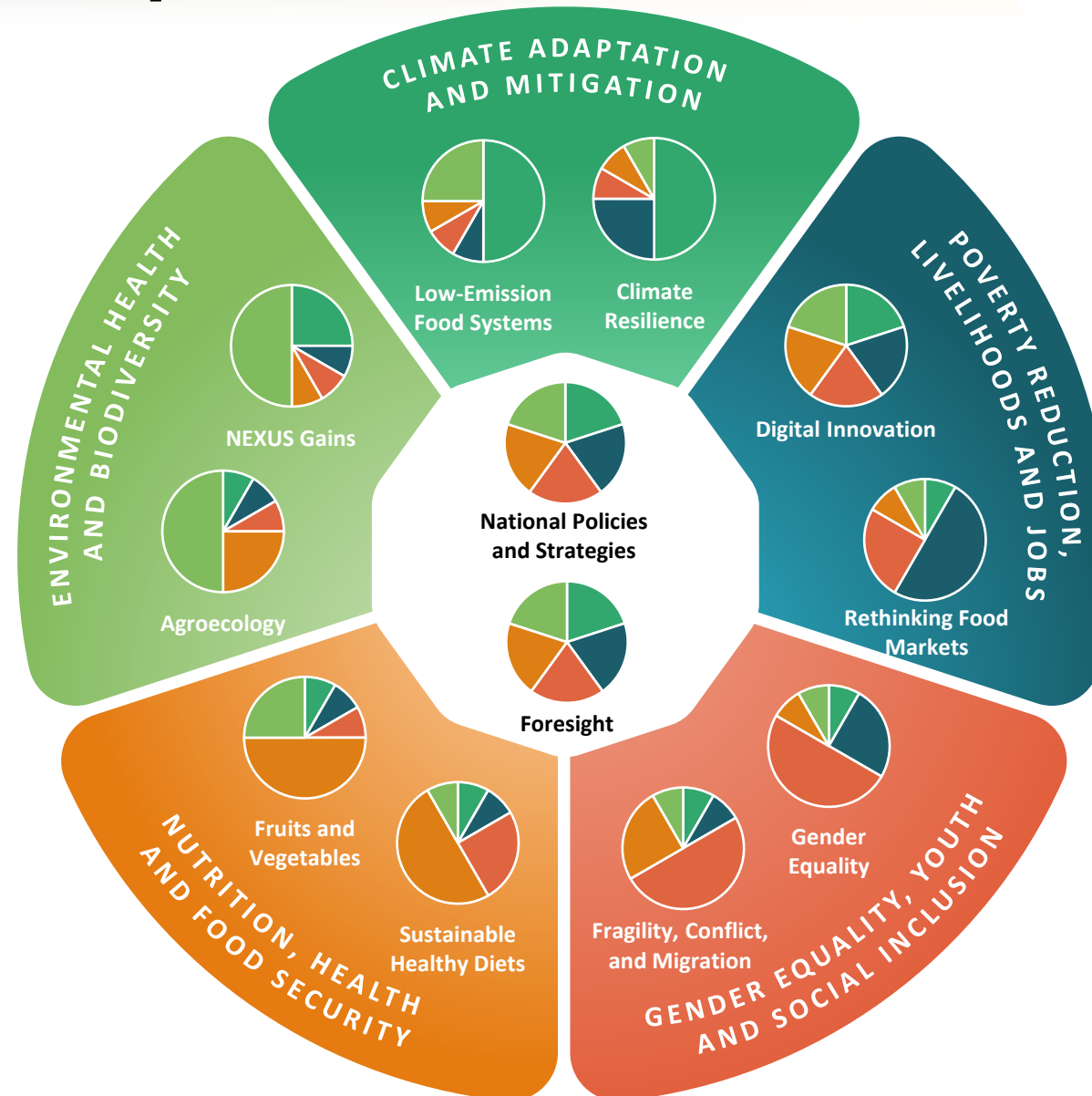
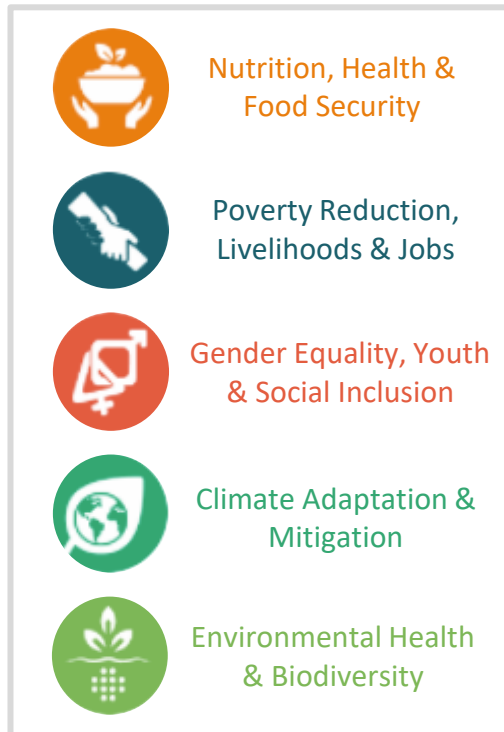
## **Highlight Climate Resilience and Low-Emission Food Systems**

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Update for the CGIAR System Council

24 April 2023

# Systems Transformation Initiatives relationships to the Impact Areas



# Schedule of upcoming Systems Transformation drop-in calls



Theme	Date	Time
<b>Climate impact area (Highlight Climate Resilience and Low Emission Food Systems)</b>	Tuesday April 25 <sup>th</sup>	10am AEST
<i>Catch-up call for other time zones</i>	Wednesday May 3 <sup>rd</sup>	8am PST / 11am EDT/ 5pm CEST / 6pm EAT
<b>Nutrition impact area (Highlight Sustainable Healthy Diets and Fruits and Vegetables)</b>	Wednesday May 17 <sup>th</sup>	8am PST / 11am EDT/ 5pm CEST / 6pm EAT
<i>Catch-up call for other time zones</i>	Thursday May 18 <sup>th</sup> (TBC)	TBC
<b>Environment impact area (Highlight NEXUS Gains and Agroecology)</b>	Wednesday May 24 <sup>th</sup>	9:30am CET / 5:30pm AEST
<i>Catch-up call for other time zones</i>	Week of May 29 <sup>th</sup>	TBC
<b>Gender impact area (Highlight Gender Equality and Fragility, Conflict, and Migration)</b>	Wednesday June 7 <sup>th</sup>	8am PST / 11am EDT / 5pm CEST / 6pm EAT
<i>Catch-up call for other time zones</i>	Week of June 12 <sup>th</sup>	TBC
<b>Poverty impact area (Highlight Digital Innovation and Rethinking Food Markets)</b>	Wednesday June 21 <sup>st</sup>	8am PST / 11am EDT / 5pm CEST / 6pm EAT
<i>Catch-up call for other time zones</i>	Week of June 26 <sup>th</sup>	TBC
<b>Drop-in call for everyone</b>	Wednesday September 6 <sup>th</sup>	9:30am CET / 5:30pm AEST
<i>Catch-up call for other time zones</i>	Week of September 11 <sup>th</sup>	TBC

# Climate Change Global Challenge



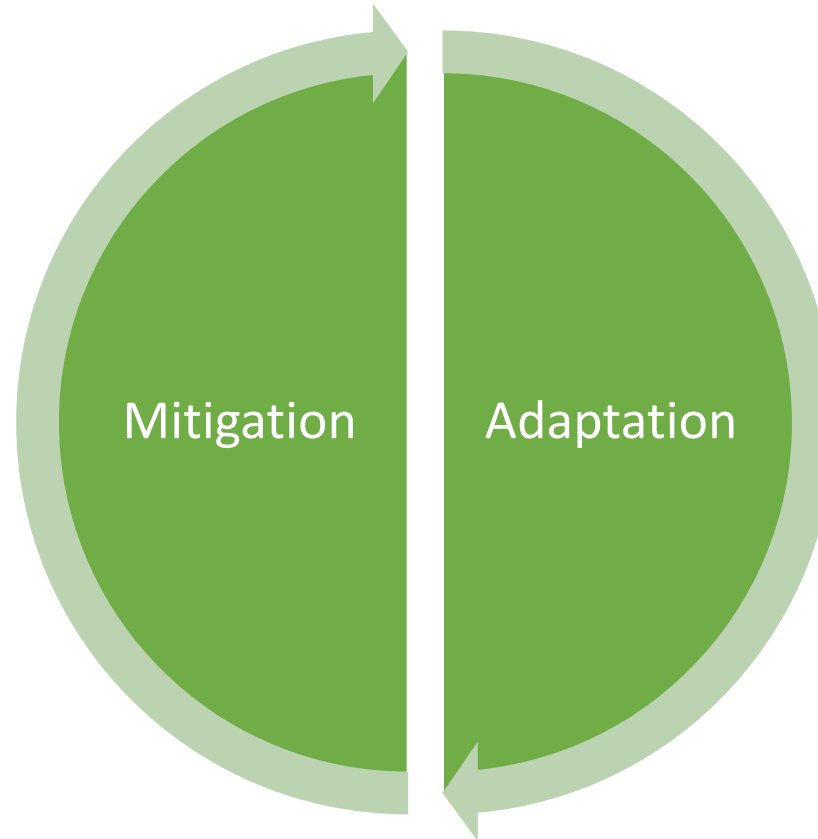
Mitigate+: Research  
for Low-Emission  
Food Systems



INITIATIVE ON  
Climate Resilience

Aims to decoupling food systems to greenhouse gases emissions

- **Tools and data** to improve country commitments and reporting
- **Enabling environments** to scale low emissions technologies
- Informing **political agenda** debates
- **Jurisdictional approaches** to low emissions food systems



Aims to transform the climate adaptation capacity of food, land, and water systems, and reduce vulnerability of farmers and disadvantage groups

- **Climate services**
- **Investments**
- **Policies** to reduce climate security risks

# Key messages

1. Operating already on a strong **partnerships** basis for delivering **scientific outputs** and **impact outcomes** that respond to a **long term vision** for climate change adaptation and mitigation
2. Linkages across the CGIAR portfolio to maximize complementarities and capacity integration
  - **With sector-specific initiatives:** e.g. Livestock sector activities implemented with the Livestock and Climate initiative
  - **With regional initiatives** to converge on common outcomes (e.g. Climber and Ukama Ustawi on climate services, LEFS with Asian Mega Deltas for rice management)
  - **With specific expertise** from initiatives (e.g. LEFS and Foresight Initiatives for food system modeling)
3. Connected to the CGIAR Climate Impact Platform
  1. Agricultural Breakthrough report for FCDO
  2. Upcoming workshop brought by the Director of the Climate Impact Platform on initiatives ToC and their contribution to the CGIAR Climate agenda





INITIATIVE ON  
Climate Resilience

# CGIAR Initiative on Climate Resilience (ClimBeR)

Systems Transformation Climate Impact Area  
drop-in call, 25 April 2023

Ana María Loboguerrero (ClimBeR Lead), [a.m.loboguerrero@cgiar.org](mailto:a.m.loboguerrero@cgiar.org)  
Jon Hellin (ClimBeR Co-Lead), [j.hellin@irri.org](mailto:j.hellin@irri.org)  
Sabrina Rose (Science Officer), [s.rose@cgiar.org](mailto:s.rose@cgiar.org)  
Lina Valencia (Senior Research Associate), [l.valencia@cgiar.org](mailto:l.valencia@cgiar.org)





# ClimBeR 3-year End of Initiative (EOI) Outcomes



INITIATIVE ON  
Climate Resilience



**BUNDLED CLIMATE SERVICES  
REACH AT LEAST 300,000  
VULNERABLE FARMERS**

At least 30% of whom are  
women, in 6 focal countries



**INTERNATIONAL AGENCIES AND  
POLICYMAKERS SHAPE AT  
LEAST NINE POLICIES  
OR INVESTMENTS**

Including at least three aimed at  
reducing agriculture-related climate  
security risk



**INITIATIVE PARTNERS  
ENABLED OR SUPPORTED TO INVEST  
US\$30M**

Focusing on disadvantaged  
groups, women, youth, and  
vulnerable smallholder farmers,  
contributing to building systemic  
resilience

# Progress on results



INITIATIVE ON  
Climate Resilience

# 185 RESULTS

Developed with

- 15 CGIAR CENTERS
- 24 CGIAR INITIATIVES
- 21 BILATERAL PROJECTS

# 150 PARTNERS

# 27 INNOVATIONS



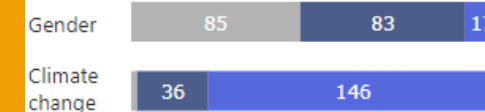
Partners by Country

## 318 trained

116 202

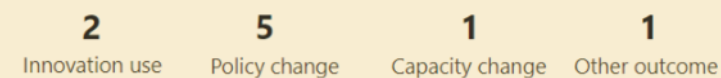
● Female ● Male

Results by gender and climate tag



● (0) Not targeted ● (1) Significant ● (2) Principal

Nine outcomes with 39 partners





# EOI Outcome 1: Bundled climate services



First national workshop for Local Technical Agroclimatic Committees (MTAs) in Guatemala (July 2022) (credit: Ministry of Agriculture)

47,000 farmers reached in Guatemala ~50% women farmers (*AgriLAC, Livestock & Climate*)

>290,000 farmers reached in Zambia ~40% women (*UU, AICCRA*)

- Developed gender-sensitive trainings to pilot risk-contingent credit in Kenya
- Hosted first national workshop with Ministry of Agriculture to enhance coordination of climate information services in Guatemala (*AgriLAC, Livestock & Climate*)
- Collaborating with six initiatives to develop farmer typologies to tailor adaptation solutions to farmers' diverse needs (*MFS, EiA, UU, Nature+, SAPLING, L&C*)

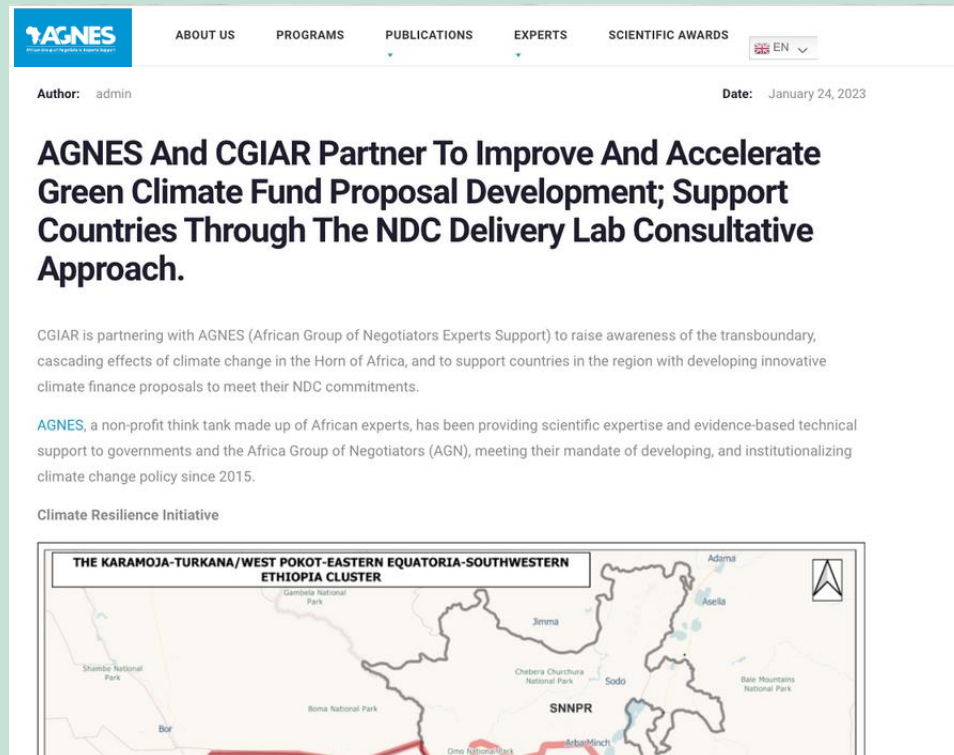
# EOI Outcome 2: Policies



## 35 policies targeted in six countries

- Kenya Climate-Smart Agriculture Multistakeholder Platform integrated climate security in their platform objectives
- Advanced integrated modelling of future policy scenarios in Morocco and Zambia with policymakers (Ukama Ustawi)
- Worked with grassroots partners to identify 50 locally-led disruptive “seeds” for mainstreaming in Guatemala
- Piloted a toolkit to make adaptation programming sensitive to climate security risks in Kenya (Livestock & Climate)

# EOI Outcome 3: Investments



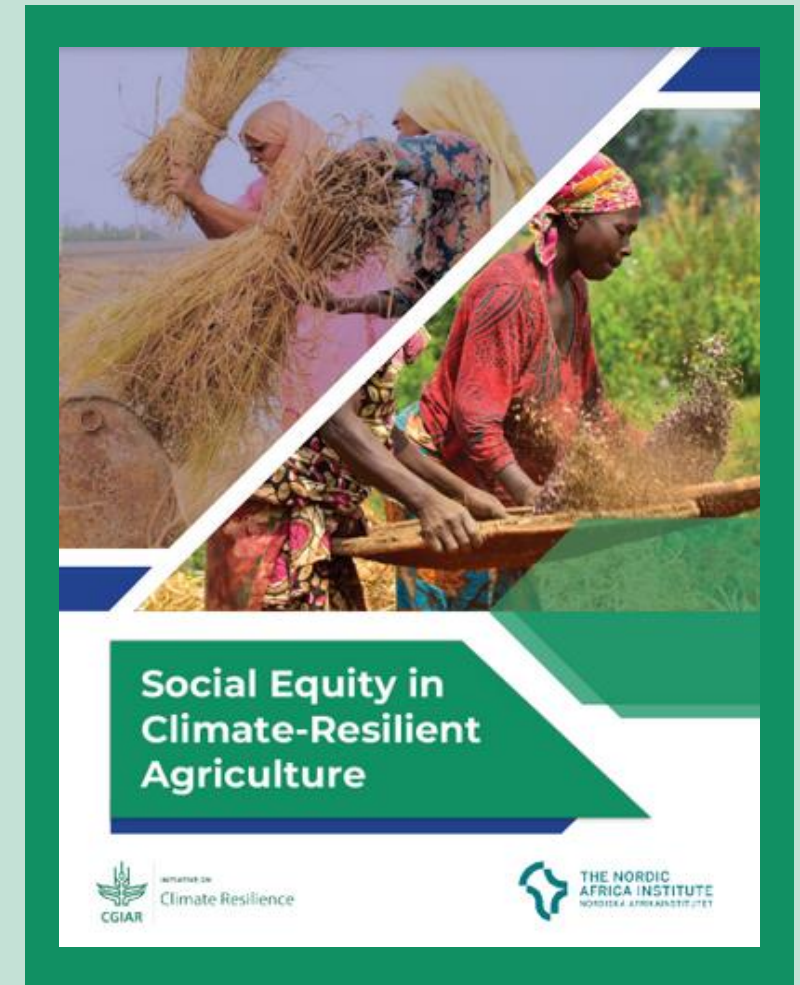
## 50 million USD concept notes to Green Climate Fund under development

- Partnered with AGNES, Global Green Growth Institute, and AICCRA to begin developing a 50 million USD proposal to the GCF through CGIAR's accreditation
- Designed a Climate Security Investment Plan methodology to prioritize investments that reduce climate-security risks and promote peace
- Developed framework for “champions of change” local adaptation grant program to scale local adaptation initiatives in Zambia



# Gender and Social Equity and EOI Outcomes

- Gender and social equity framework based on four equity types: procedural; recognitional; distributional; and intergenerational
- Work package leaders factoring in gender and social equity (especially procedural and recognitional) into their work
- Working with Monitoring, Evaluation, Learning and Impact Assessment (MELIA) to develop indicators for four equity types
- Field work in Zambia, Kenya and Philippines to identify community-level social equity indicators
- Development of social equity toolkit to guide future work in building social equity in climate-resilient agriculture



# CGIAR portfolio linkages



ClimBeR, L&C, AICCRA, and  
AVENIR map common sites in  
Senegal, July 2022



ClimBeR, L&C, AICCRA, and  
AVENIR colleagues at a  
synergies workshop in Dakar,  
July 2022

Co-hosted three synergies workshops in Kenya, Senegal, and Zambia with Livestock & Climate and Ukama Ustawi

13 CGIAR Initiatives and bilateral projects agreed on 20 joint climate outcomes

- Surveyed 300 farmers and found more than 50% applied recommendations from climate information bulletins in Guatemala (AgriLAC and Livestock & Climate)
- Identified five gaps in CIS for farmers in Senegal with Livestock & Climate (optimal sowing date, moisture, evapotranspiration, insolation, sandstorm)
- Trained 60 ministry partners in Zambia to use the Early Warning, Early Action, Early Finance (AWARE) platform with AICCRA
- Collaborated with NEXUS Gains to facilitate South-South learning to improve drought management in Zambia and India

# Scientific contributions

[Home](#) > [Sustainability Science](#) > [Article](#)

Original Article | [Open Access](#) | [Published: 27 November 2022](#)

## Disruptive seeds: a scenario approach to explore power shifts in sustainability transformations

[Lucas Rutting](#) , [Joost Vervoort](#), [Heleen Mees](#), [Laura Pereira](#), [Marieke Veeger](#), [Karlijn Muiderman](#), [Astrid Mangnus](#), [Klara Winkler](#), [Per Olsson](#), [Tanja Hichert](#), [Richard Lane](#), [Bruno Bottega Pergher](#), [Laura Christiaens](#), [Nivedita Bansal](#), [Abe Hendriks](#) & [Peter Driessen](#)

[Sustainability Science](#) (2022) | [Cite this article](#)

3576 Accesses | 38 Altmetric | [Metrics](#)





[Link](#)

ARTICLE | VOLUME 5, ISSUE 7, P756-766, JULY 15, 2022

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## Research priorities for global food security under extreme events

[Zia Mehrabi](#) <sup>56</sup>  • [Ruth Delzeit](#) • [Adriana Ignaciuk](#) • ... [Paul C. West](#) • [Hannah Wittman](#) • [Liangzhi You](#) •

[Show all authors](#) • [Show footnotes](#)

[Open Access](#) • DOI: <https://doi.org/10.1016/j.oneear.2022.06.008> • [Check for updates](#)



[Link](#)




Environmental Science & Policy

Volume 133, July 2022, Pages 115-126



## What is the importance of climate research? An innovative web-based approach to assess the influence and reach of climate research programs

[Bia Carneiro](#)<sup>a 1</sup> , [Giuliano Resce](#)<sup>b 2</sup>, [Peter Läderach](#)<sup>c 3</sup>, [Frans Schapendonk](#)<sup>c 4</sup>, [Grazia Pacillo](#)<sup>c 5</sup>



[Show more...](#)

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





ENVIRONMENTAL RESEARCH  
CLIMATE



PERSPECTIVE

OPEN ACCESS

## Transformative adaptation and implications for transdisciplinary climate change research

[Jon Hellin](#)<sup>1\*</sup> , [Giriraj Amarnath](#)<sup>2</sup> , [Andrew Challinor](#)<sup>3</sup> , [Eleanor Fisher](#)<sup>4</sup> , [Evan Girvetz](#)<sup>5</sup> , [Zhe Guo](#)<sup>6</sup> , [Janet Hodur](#)<sup>6</sup> , [Ana Maria Loboguerrero](#)<sup>6</sup> , [Grazia Pacillo](#)<sup>6</sup> , [Sabrina Rose](#)<sup>6</sup> , [Tonya Schutz](#)<sup>6</sup> , [Lina Valencia](#)<sup>6</sup> and [Liangzhi You](#)<sup>6</sup> 

<sup>1</sup> International Rice Research Institute (IRRI), Los Baños, Philippines

<sup>2</sup> International Water Management Institute (IWMI), Colombo, Sri Lanka

<sup>3</sup> University of Leeds, School of Earth & Environment, Leeds, UK

<sup>4</sup> Nordic Africa Institute, Uppsala, Sweden

<sup>5</sup> Alliance of Bioversity International and the International Center for Tropical Agriculture (CIAT), Nairobi, Kenya

<sup>6</sup> International Food Policy Research Institute (IFPRI), Washington D.C., USA

Original content from this work may be used



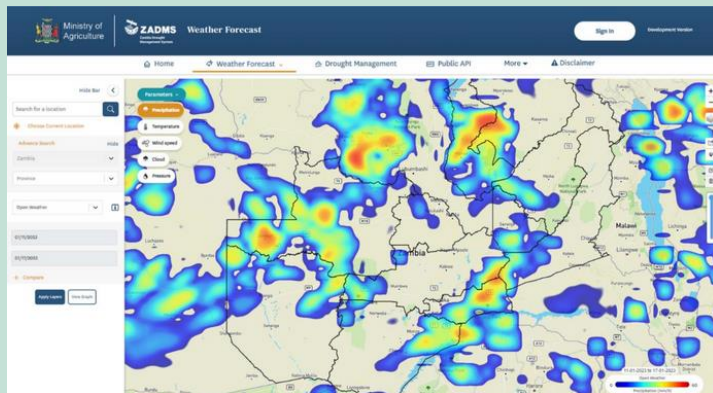
[Link](#)



# Innovation Portfolio

27

INNOVATIONS



Zambia Drought Management System developed with Zambia Ministry of Agriculture at their request

14

COLLABORATING  
INITIATIVES

4.7

AVG READINESS  
SCORE



Workshop participants discuss climate security risks in Kenya to inform the Climate Security Observatory (June 2022)

40%

POLICY-RELATED  
INNOVATIONS



# LEARNING AS WE CLIMB

- **Adjusted EOI Outcome 3 to reflect impact pathway through the Green Climate Fund**
- **Developing policy-level theories of change for each policy towards EOI Outcome 2**



# Thank you!

More information at:

<http://on.cgiar.org/ClimBeR>

<https://www.cgiar.org/research/publication/initiative-overview-climber-building-systemic-resilience-against-climate-variability-and-extremes/>



INITIATIVE ON

Climate Resilience





Mitigate+: Research  
for Low-Emission  
Food Systems

# Initiative progress: Low-emission food systems

Lead: Louis Verchot (ABC)  
Co-lead: Wei Zhang (IFPRI)





# Low Emissions Food Systems: EOI outcomes

Design tools developed  
and disseminated

5 FS emissions reduction  
strategies or initiatives  
designed and implemented

Better data

4 countries:  
Improve UNFCCC reporting  
Quantitative national FS  
commitments

Living Labs for People

4 jurisdictions design and  
implement low emissions FS  
development programs

Support enabling  
environments

5 Low emissions technologies  
scaled  
↑ GHGE targets in NDCs

Low emission FS high on  
political agenda

↑ Resources allocated to low-  
emissions FS development

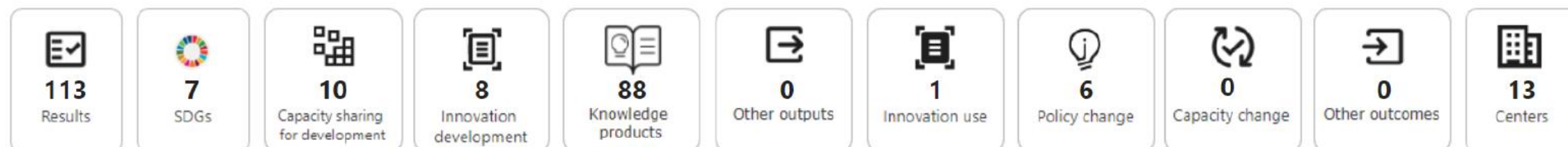
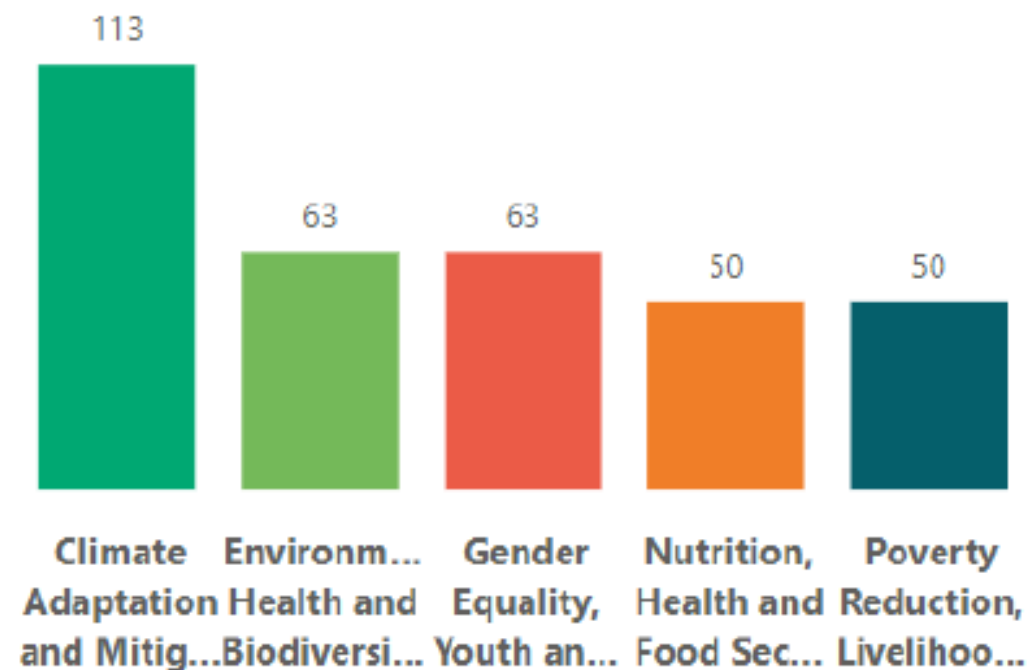
# Progress



Mitigate+: Research  
for Low-Emission  
Food Systems

WORK PACKAGE	TRAFFIC LIGHT / RATIONALE
1	<p>Although progress was achieved on all four outputs, delays in contracting with CIFOR (which hosts the WP1 Lead) prevented completion of some deliverables (including country profiles) in 2022. Team adjustments are planned in 2023 to ensure a quicker pace of delivery.</p>
2	<p>Progress was made on five outputs. The remaining output, on capacity building workshops, will be tackled once more progress has been achieved on the other outputs.</p>
3	<p>Progress was made on seven outputs. The remaining output, on lessons learned is, by nature, expected to be achieved in subsequent years.</p>
4	<p>Progress was made on all WP4 outputs.</p>
5	<p>Despite delays in bringing on board the WP5 Lead, public messaging, implementation of training programs and organization of high-profile events are on track with a view to ensuring that food system approaches to low GHG emission development are high on the world's political agenda.</p>

## Impact Area contributions





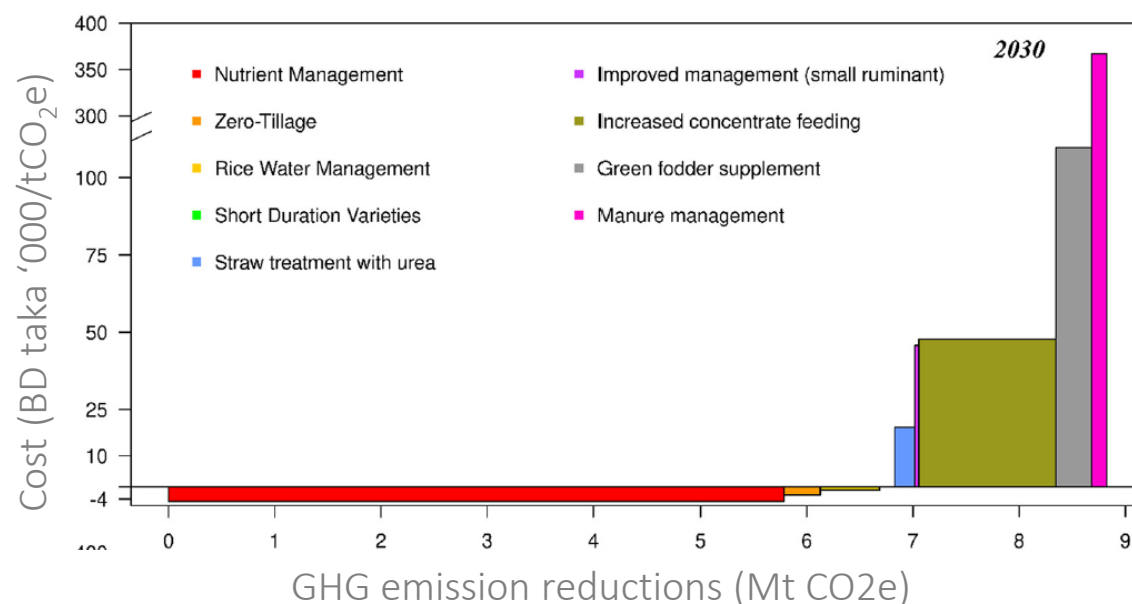
# EOI 1

## Design tools developed and disseminated



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for Low-Emission  
Food Systems

Rigorous assessment of economic mitigation potential: MACC  
Partnership with World Bank to expand this work  
Discussions with ADB  
Meeting national demand



CARBON MANAGEMENT  
2022, VOL. 13, NO. 1, 594-607  
<https://doi.org/10.1080/17583004.2022.2151939>



RESEARCH ARTICLE

OPEN ACCESS Check for updates

### Quantification of economically feasible mitigation potential from agriculture, forestry and other land uses in Mexico

Tek B. Sapkota<sup>a,\*</sup>,  
Juan Carlos Ley<sup>a</sup>,  
Eva Wollenberg<sup>1</sup>

<sup>a</sup>International Maize  
International Center  
(CIMMYT), New Delt  
Guadalajara, Mexico;  
<sup>1</sup>El Colegio de la Fr

#### ABSTRACT

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Science of the Total Environment 786 (2021) 147344

Contents lists available at ScienceDirect

Science of the Total Environment

journal homepage: [www.elsevier.com/locate/scitotenv](http://www.elsevier.com/locate/scitotenv)



### Quantifying opportunities for greenhouse gas emissions mitigation using big data from smallholder crop and livestock farmers across Bangladesh

Tek B. Sapkota<sup>a,\*</sup>, Fahmida Khanam<sup>b</sup>, Gokul Prasad Mathivanan<sup>c,d</sup>, Sylvia Vetter<sup>e</sup>, Sk. Ghulam Hussain<sup>b,f</sup>,  
Anne-Laure Pilat<sup>b</sup>, Sumona Shahrin<sup>b</sup>, Md. Khaled Hossain<sup>b</sup>, Nathu Ram Sarker<sup>g</sup>, Timothy J. Krupnik<sup>b</sup>

<sup>a</sup> International Maize and Wheat Improvement Center (CIMMYT), El Batán, Mexico

<sup>b</sup> International Maize and Wheat Improvement Center (CIMMYT), Dhaka, Bangladesh

<sup>c</sup> International Maize and Wheat Improvement Center (CIMMYT), New Delhi, India

<sup>d</sup> Thünen Institute of Climate-Smart Agriculture, Braunschweig, Germany

<sup>e</sup> Institute of Biological & Environmental Sciences, School of Biological Sciences, University of Aberdeen, Cruickshank Building, St. Machar Drive, Aberdeen AB24 3UU, UK

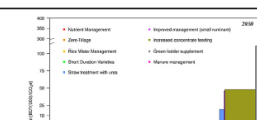
<sup>f</sup> Bangladesh Agricultural Research Council, Dhaka 1215, Bangladesh

<sup>g</sup> Bangladesh Livestock Research Institute, Savar, Dhaka 1341, Bangladesh

#### HIGHLIGHTS

- We estimated GHG emissions and quantified mitigation potential from agricultural sector of Bangladesh
- Bangladesh's agriculture sector can mitigate 9.51 and 14.21 million tonne CO<sub>2</sub>e year<sup>-1</sup> by 2030 and 2050, respectively
- Adoption of profitable mitigation options can deliver three fourth of this

#### GRAPHICAL ABSTRACT



# EOI 2

## Improved data availability

- Guidance for Measurement, Reporting, and Verification of Livestock Greenhouse Gas Emissions
  - ✓ Written by Mitigate+ collaborator Professor Hongmin Dong and her team at Institute of Environmental and Sustainable Development in Agriculture, Chinese Academy of Agricultural Sciences
  - ✓ First guide book of GHG emissions accounting for livestock GHG emission control, and low carbon agriculture development in China
- GHG emissions accounting for Livestock and dairy farms
  - ✓ Approved as agriculture industry standard in China by Ministry of Agriculture and Rural Affairs



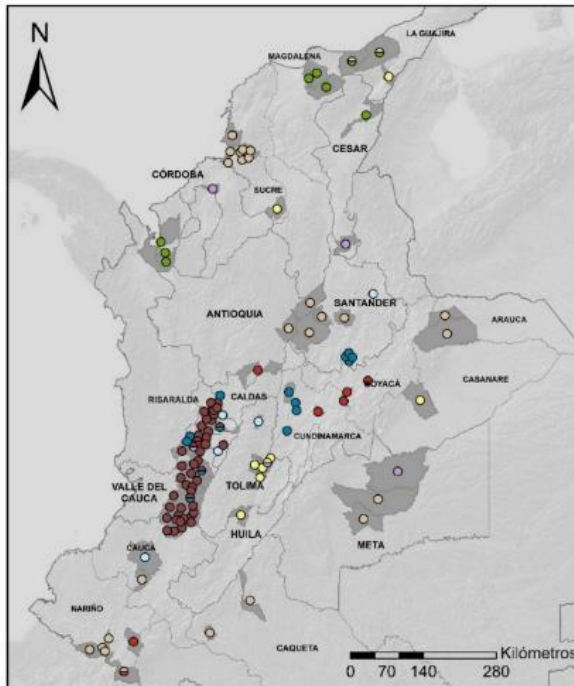
# EOI 3

## Colombia: Implementing low emissions development



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for Low-Emission  
Food Systems

GCF project - CSICAP - *Climate-Smart Initiatives for Climate Change Adaptation and Sustainability in Agricultural and Livestock Production Systems*



# 2

Genetic improvement, crop management techniques, technological options, scaling to increase resilience and **promote low-carbon agricultural development.**

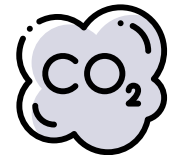
### Direct Beneficiaries:

13.168 farmers  
700 technicians  
2.740 external advisors  
46 institutions



### On farm interventions:

98,961 tn CO<sub>2</sub>eq /5 years  
**432,297 tn CO<sub>2</sub>eq /25 years**  
**8763 ha**



Training:  
8,719,7938 tn CO<sub>2</sub>eq /25 years



Mitigate+: Research  
for Low-Emission  
Food Systems

Support the design of mitigation strategies  
GHG monitoring at National level – Activity data and Local EF  
Building National Capacities  
Address intervention of 9000 ha in mitigation practices



# EOI 3

## Kenya: Implementing low emissions development

### Climate Smart Agriculture Multi-stakeholder Platform (CSA MSP)

Assess low emissions technologies

Support the Kenya national UNFCCC submission on agriculture



### Support African Group of Negotiators Expert Support (AGNES)

Provide evidence-based technical support to the African Governments and the African Group of Negotiators (AGN) that enhance effective engagement in the international and national climate change policy formulation, implementation and decision making

### Support Kenya Climate Smart Agriculture Project (KCSAP)

Data on key crop value chains (sorghum, millet and cassava) and dairy

Assess dairy BMPs - productivity and emissions

Developed MACCs for interventions

Support to M&E reporting to the World Bank

# EOI 4

## Scaling low-emissions technologies



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for Low-Emission  
Food Systems

### Support for scaling of Technologies and Innovations

#### Support for implementation of carbon credits:

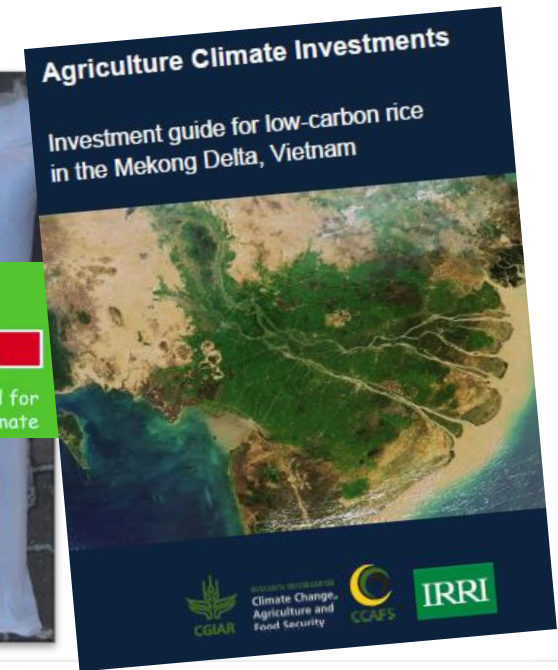
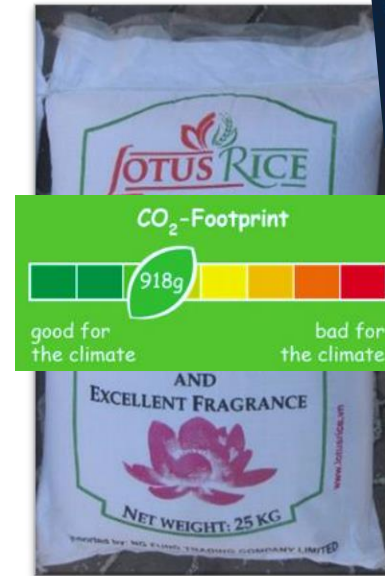
- Investment guide for low-emission rice
- Carbon footprint tracking and tracing tools
- New updated methodology for carbon accreditation in rice production
- National level round table meetings supporting development of regulatory framework

#### Support for NDC implementation:

- Roadmap to implementing NDCs for agriculture emission reduction in Vietnam
- Feasibility of the Methane Reduction Pledge within Methane Emitting Agricultural Sectors

#### Mechanization and straw markets

- Use-case scenarios for mechanized operations (e.g. LLL, straw baling, composting)
- Analysis of commercial straw market incl. business cases, straw adoption capacity mapping





# EOI 5

## Raising the profile of FS solutions



Mitigate+: Research  
for Low-Emission  
Food Systems

M+ at COP



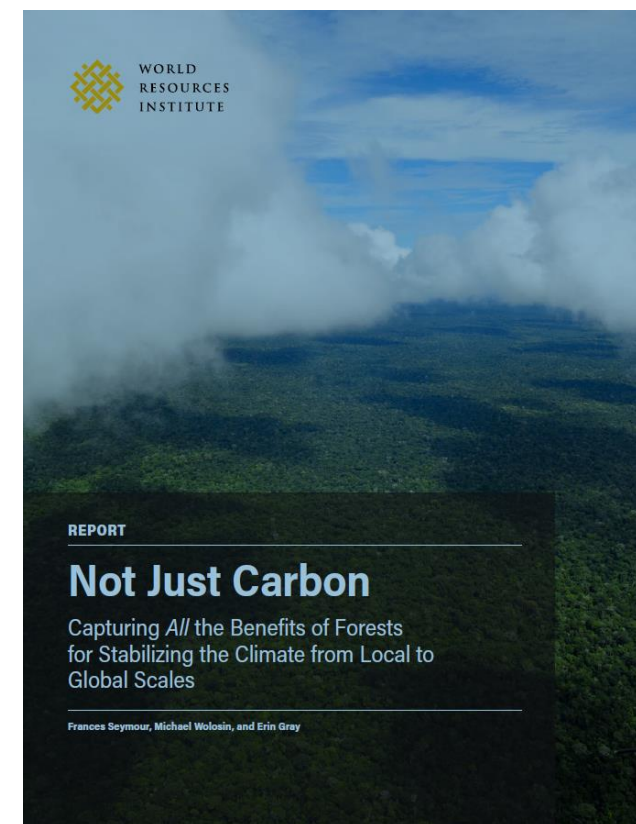
M+ at the G20



M+ in the Press



M+ research used  
by partners





# Capacity building



Mitigate+: Research  
for Low-Emission  
Food Systems

**CLIFF-GRADS:** Enhanced PhD experiences  
Career-building networks

**WP studentships:** Local universities  
Advanced research institutes

**AGNES:** African climate leadership training  
Supporting African negotiators

**Ad hoc:** Gender-up training  
Network Mapping – Kenya  
Rice business models  
Media training on FS (coming soon)



Kofi Konadu - CLIFF-GRADS fellow

# Scientific headlines



Mitigate+: Research  
for Low-Emission  
Food Systems

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Livestock: Massive adoption of product based and absolute CH<sub>4</sub> reduction strategies can meet the 1.5 °C target by 2030 but not 2050. [\(link\)](#)

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Tropical forests stabilize local climates: Biophysical cooling effect of forests amplifies the CO<sub>2</sub> effect by 20 – 30%, effects felt locally. [\(link\)](#)

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Food loss and waste: The major source of milk losses in Kenya is the seasonal imbalance between supply and demand (and the associated price fluctuations). Milk collection problems and poor infrastructure are secondary.

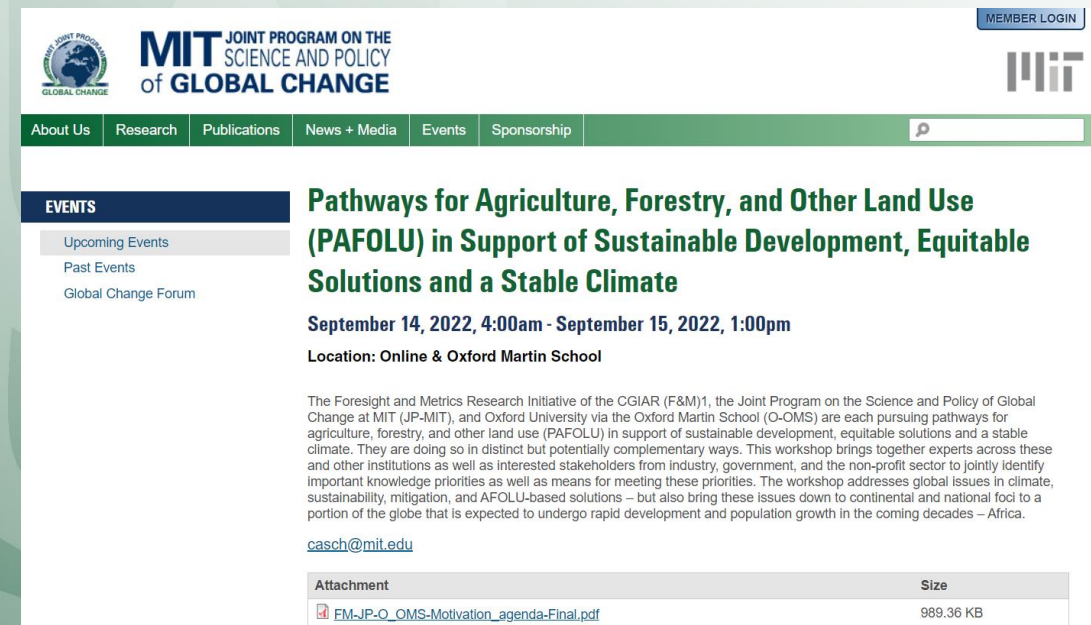
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Aquaculture: ~100 Mha of land-use could be avoided through increased fish protein consumption, instead of animal product consumption. (SSP2 pathway). More is possible.


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# Some CGIAR portfolio linkages

- Foresight: modelling for assessing LED pathways in FS development
- LCSR for improved emission factors for GHG inventory and improved pastoral production systems
- Asian Mega Deltas for improved management of rice production and aquaculture
- Excellence in Agronomy for work on soil organic matter restoration and C sequestration
- CLIMBER in support of AGNES



The screenshot displays the website for the MIT Joint Program on the Science and Policy of Global Change. The header includes the program's logo, the MIT logo, and a 'MEMBER LOGIN' button. A navigation bar contains links for 'About Us', 'Research', 'Publications', 'News + Media', 'Events', and 'Sponsorship'. The 'EVENTS' section is active, showing a list of 'Upcoming Events', 'Past Events', and 'Global Change Forum'. The main content area features a detailed announcement for a workshop titled 'Pathways for Agriculture, Forestry, and Other Land Use (PAFOLU) in Support of Sustainable Development, Equitable Solutions and a Stable Climate'. The event is scheduled for September 14, 2022, from 4:00am to September 15, 2022, at 1:00pm, and will be held online and at Oxford Martin School. A brief description of the workshop's purpose is provided, along with the contact email 'casch@mit.edu'. At the bottom, an attachment table lists a PDF file named 'FM-JP-O\_OMS-Motivation\_agenda-Final.pdf' with a size of 989.36 KB.

Attachment	Size
 FM-JP-O_OMS-Motivation_agenda-Final.pdf	989.36 KB