



SDC A+FS Network

# Thoughts for Food

A series of light & informal events on food-systems related news



# WELCOME !

01.03.2023

# What's being offered today?

1. Introduction
2. Harnessing the potential of the 10 Elements of Agroecology to facilitate agrifood systems transformation – E. Barrios, FAO
3. Network space
4. News & updates
5. Push-pull agricultural management technique – A. Tamiru, icipe



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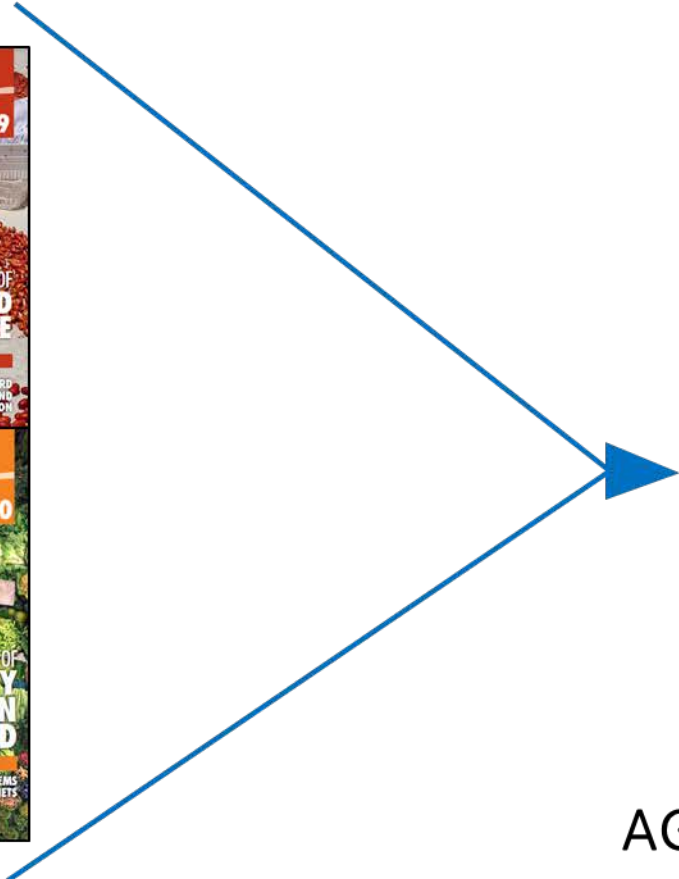
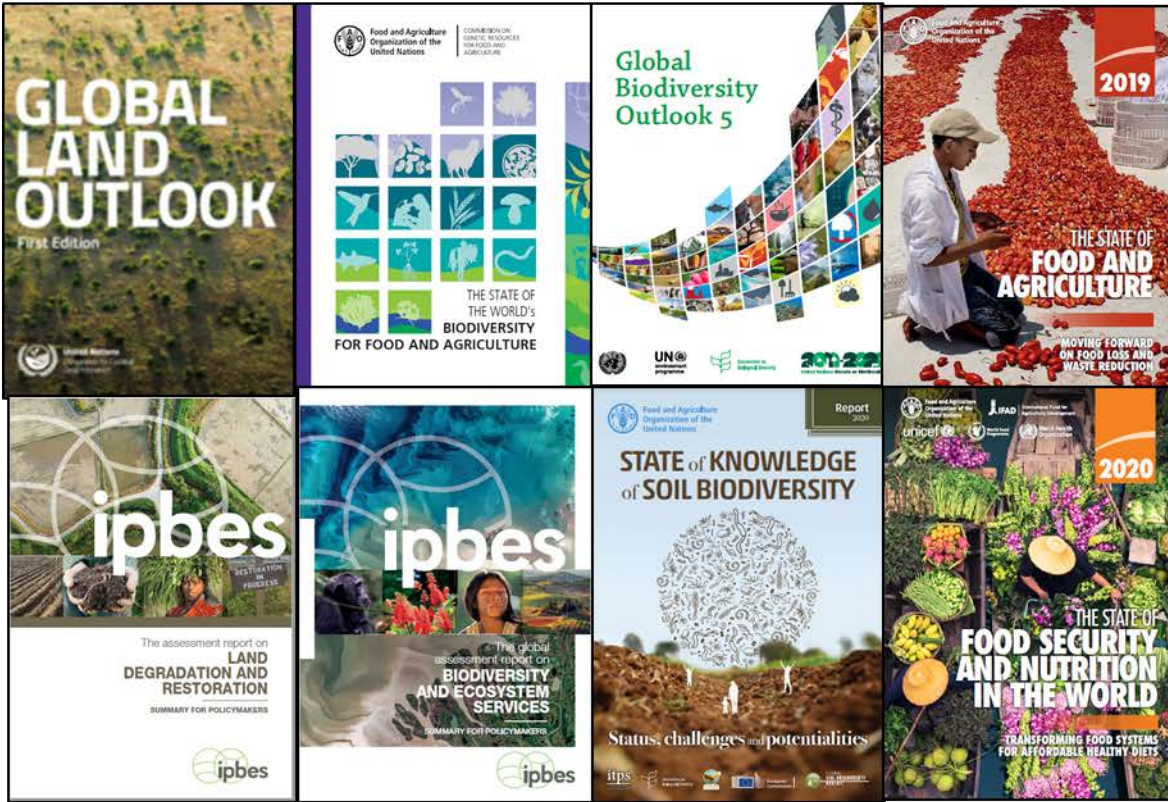
# Harnessing the potential of the 10 Elements of Agroecology to facilitate agri-food systems transformation

Edmundo Barrios  
Agricultural Officer, FAO



# The global context and agriculture

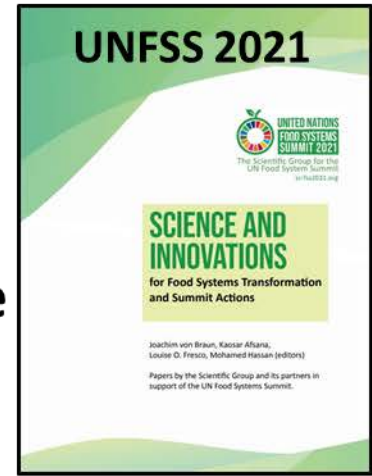
## CONSENSUS CALL FOR TRANSFORMATIVE CHANGE



**Global Convergence**



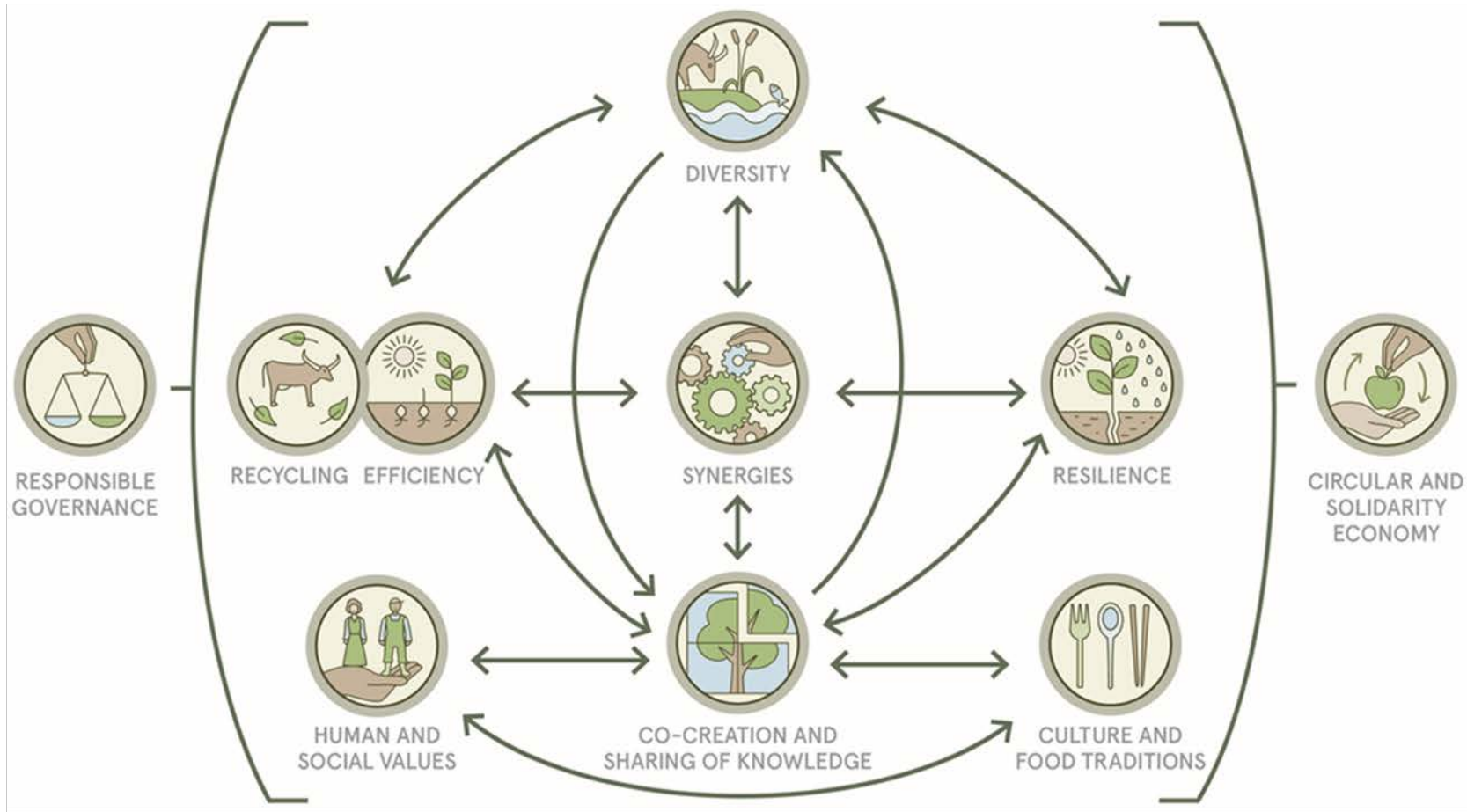
**AGRICULTURE AND FOOD SYSTEMS**





# Facilitating sustainability transitions

## THE 10 ELEMENTS OF AGROECOLOGY



Wholeness, interconnectedness and interdependence

FAO, 2018



# OPERATIONALIZING THE 10 ELEMENTS OF AGROECOLOGY FRAMEWORK

ECOSYSTEMS AND PEOPLE  
2020, VOL. 16, NO. 1, 230-247  
<https://doi.org/10.1080/26395916.2020.1808705>



REVIEW

OPEN ACCESS

## The 10 Elements of Agroecology: enabling transitions towards sustainable agriculture and food systems through visual narratives

Edmundo Barrios <sup>a</sup>, Barbara Gemmill-Herren <sup>b,c</sup>, Abram Bicksler<sup>a</sup>, Emma Siliprandi <sup>a</sup>, Ronnie Brathwaite<sup>a</sup>, Soren Moller<sup>a,d</sup>, Caterina Batello<sup>e</sup> and Pablo Tittone <sup>f,g,h</sup>

<sup>a</sup>Plant Production and Protection Division (NSP), Food and Agriculture Organization of the United Nations (FAO) Viale delle Terme di Caracalla, Rome, Italy; <sup>b</sup>Resilient Livelihoods Systems, World Agroforestry Centre, Nairobi, Kenya; <sup>c</sup>Sustainable Food Systems Program, Prescott College, Prescott, AZ, USA; <sup>d</sup>Ecosystems Consultants, Dunedin, New Zealand; <sup>e</sup>Agroecology Europe ([www.agroecology-europe.org](http://www.agroecology-europe.org)); <sup>f</sup>Agroecology, Environment and Systems Group, Instituto de Investigaciones Forestales y Agropecuarias de Bariloche (IFAB), INTA-CONICET, San Carlos de Bariloche, Argentina; <sup>g</sup>Agroécologie et Intensification Durable (Aïda), Centre de Coopération Internationale en Recherche Agronomique Pour le Développement (CIRAD), Université de Montpellier, Montpellier, France; <sup>h</sup>Groningen Institute of Evolutionary Life Sciences, University of Groningen, Groningen, The Netherlands

### ABSTRACT

The magnitude and urgency of the challenges facing agriculture and food systems demand profound modifications in different aspects of human activity to achieve real transformative change and sustainability. Recognizing that the inherent complexity of achieving sustainability is commonly seen as a deterrent to decision-making, the Food and Agriculture Organization of the United Nations (FAO) has approved the 10 Elements of Agroecology as an analytical framework to support the design of differentiated paths for agriculture and food systems transformation, hence facilitating improved decision-making by policymakers, practitioners and other stakeholders in differing contexts at a range of levels on a number of scales. Biodiversity, consumers, education and governance are identified as promising entry points to build a structured process using visual narratives that rely on the 10 Elements of Agroecology to graphically dissect prospective social-ecological transition trajectories. We illustrate such applications with examples from agroforestry worldwide, public food procurement in Brazil and the United States of America, and agroecology education vis-à-vis secure access to land in Senegal. Nexus approaches are used to highlight and examine salient interactions among different sectors and entry points, and to develop visual narratives describing plausible theories of transformative change towards sustainable agriculture and food systems.

### ARTICLE HISTORY

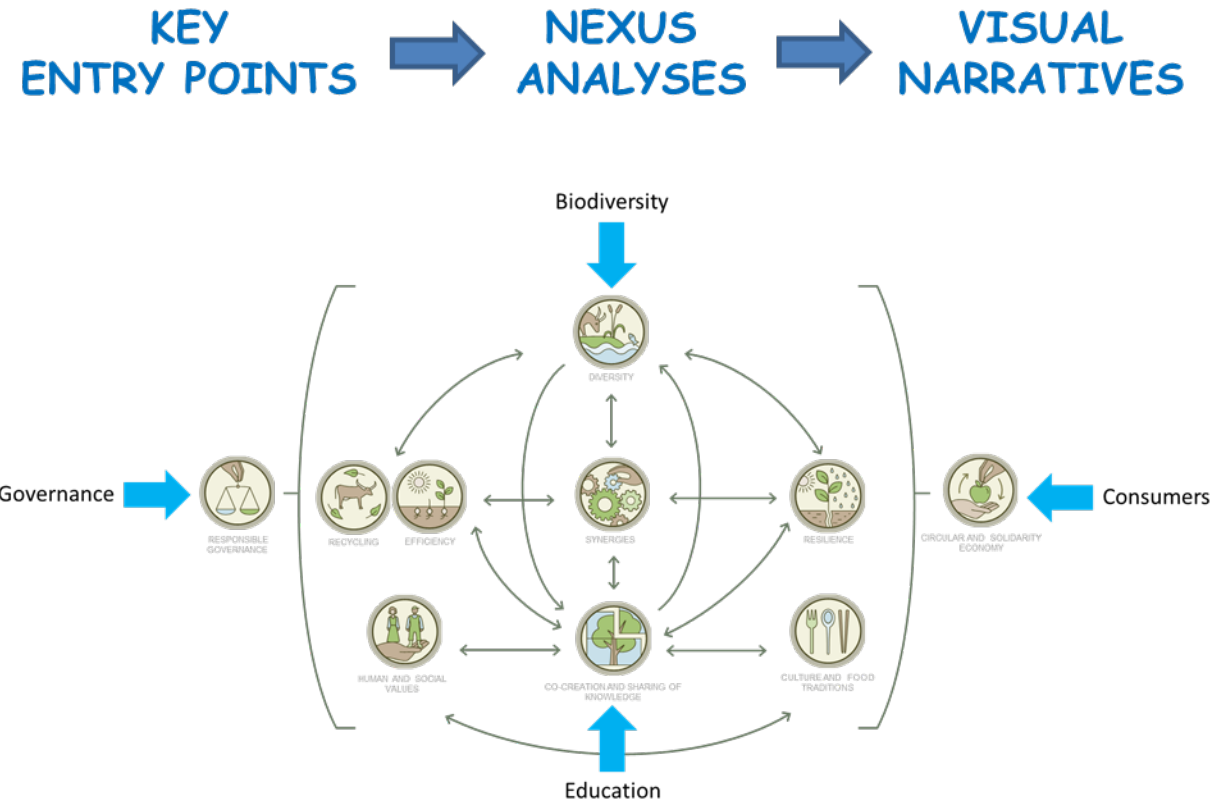
Received 17 June 2020  
Accepted 6 August 2020

### EDITED BY

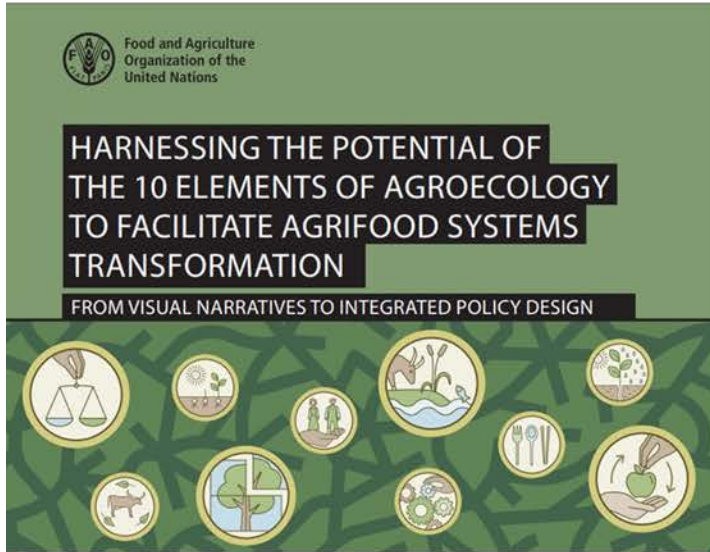
Alexander van Oudenhoven

### KEYWORDS

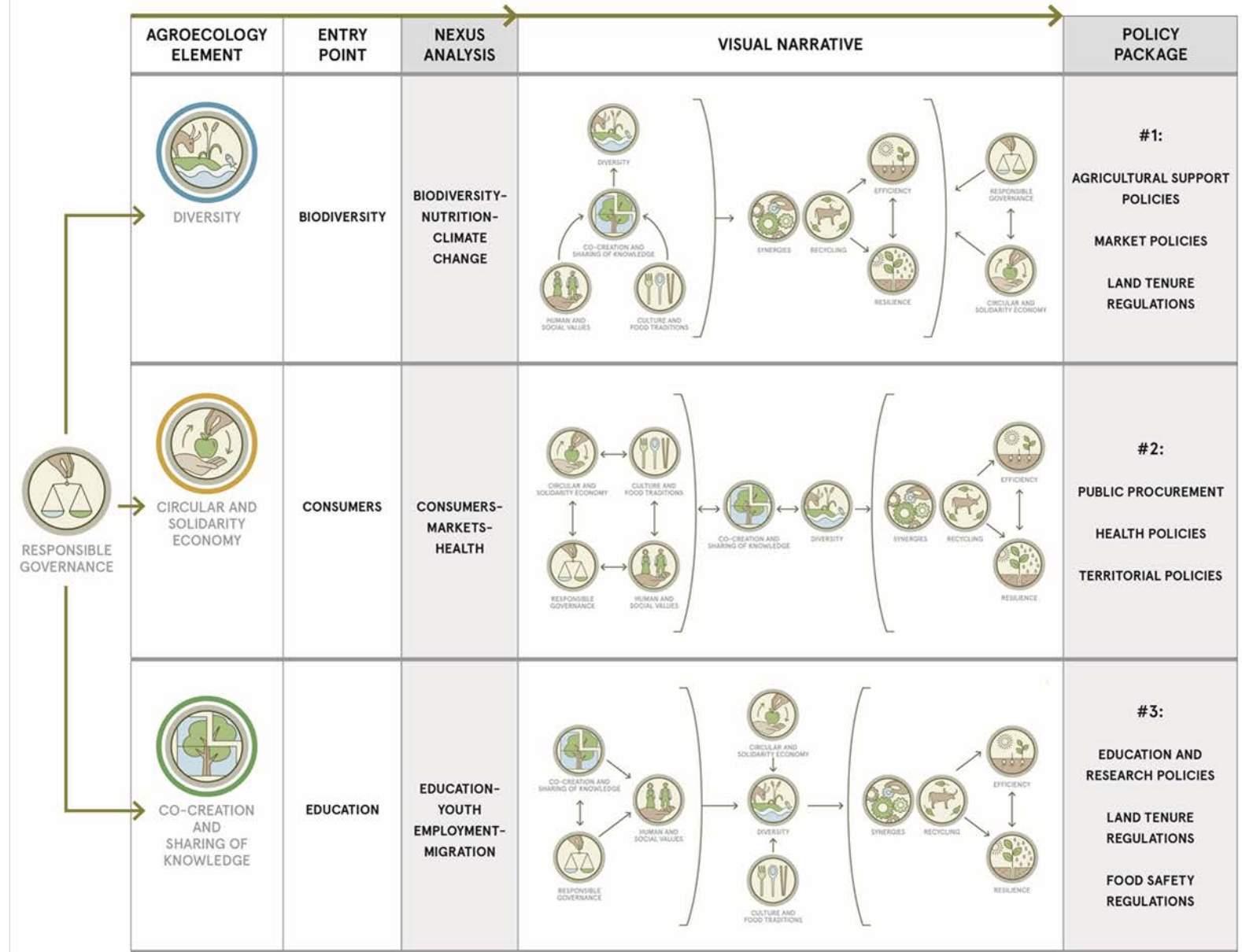
Agroecological transitions; co-creation of knowledge; nexus approaches; sustainable agriculture and food systems; transformative change; visual narratives



<https://doi.org/10.1080/26395916.2020.1808705>

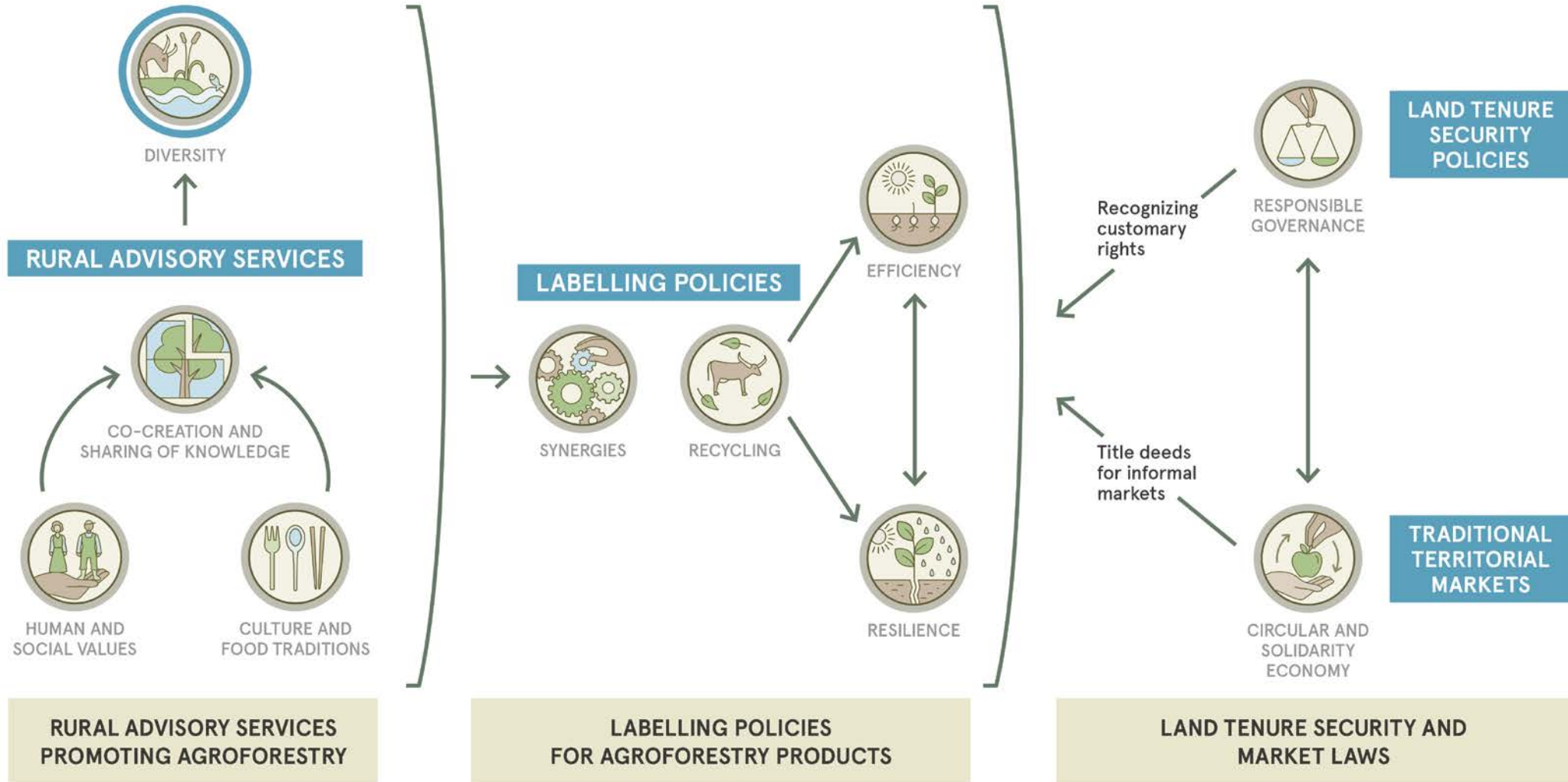


FAO, 2023



# A VISUAL NARRATIVE - BIODIVERSITY ENTRY POINT

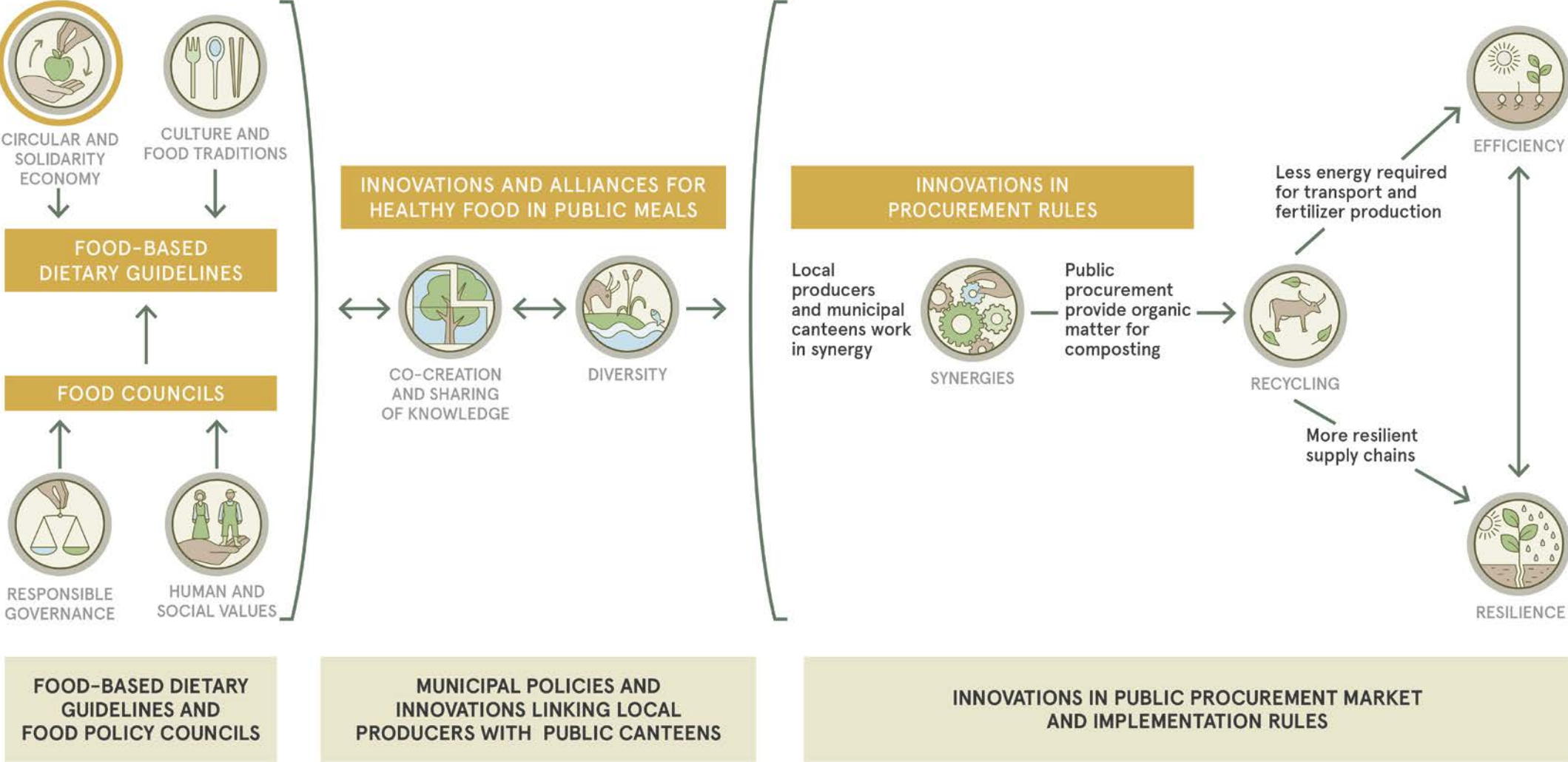
## *Biodiversity-Nutrition-Climate Change Nexus*





# A VISUAL NARRATIVE - CONSUMERS ENTRY POINT

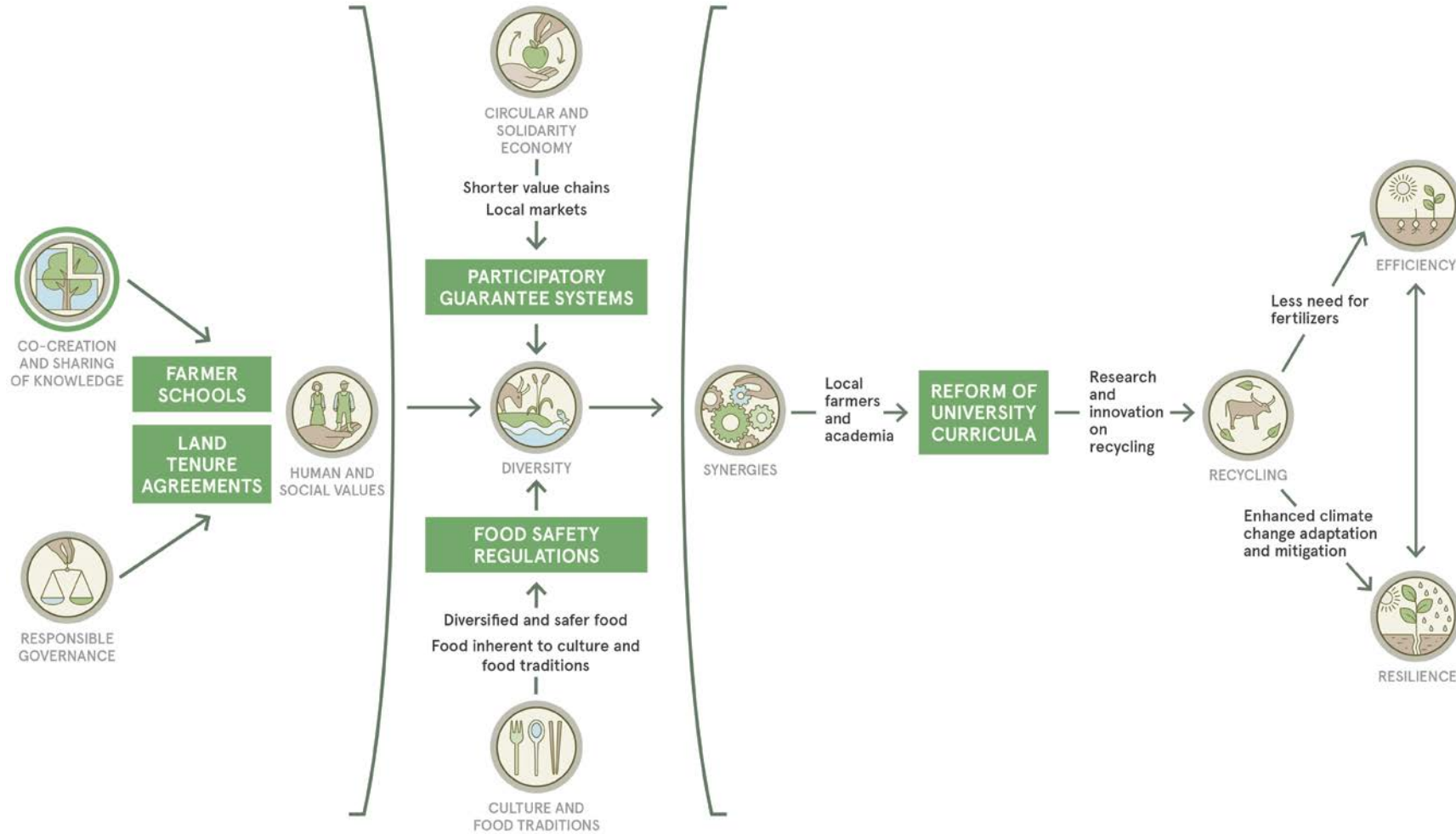
## Consumers-Markets-Health Nexus





# A VISUAL NARRATIVE - EDUCATION ENTRY POINT

## *Education-Youth Employment-Migration Nexus*



FARMER SCHOOLS AND ENHANCED YOUTH ACCESS TO LAND

FOOD SAFETY REGULATIONS AND PARTICIPATORY GUARANTEE SYSTEMS FOR LOCAL PRODUCTS

INNOVATIONS IN UNIVERSITY CURRICULA LINKING FARMERS WITH ACADEMIA



Food and Agriculture Organization  
of the United Nations



Food and Agriculture  
Organization of the  
United Nations

# HARNESSING THE POTENTIAL OF THE 10 ELEMENTS OF AGROECOLOGY TO FACILITATE AGRIFOOD SYSTEMS TRANSFORMATION

FROM VISUAL NARRATIVES TO INTEGRATED POLICY DESIGN



FAO. 2023



# SAY HI!

## Let's quickly reconnect

You'll be randomly assigned to a small group.

In the group, simply take a minute to say hi and introduce yourself.



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# WHAT'S NEW?

The actions are placed in five groups based on the domain they aim to affect:

- Actions to reorient land use in agriculture (#1 to #7).
- Actions to improve the environmental impact of agriculture & farming (#8 to #22).
- Actions to improve the sustainability of wild fisheries and aquaculture (#23 to #28).
- Actions to reduce food loss and waste (#29 to #36).
- Actions to reorient diets and overall food demand (#37 to #45).

# 45 Actions to orient Food Systems towards environmental sustainability

## Co-Benefits and Trade-Offs Research Brief

Action	Environmental dimension(s)	What potential trade-offs could this action generate?
<b>1</b> Provide subsidies to farmers and landholders for restoring degraded or unproductive croplands and grazing lands to natural habitats and ecosystems, such as through set-asides, by rewilding forests and grasslands, or by re-wetting peatlands	GHG emissions	<ul style="list-style-type: none"> <li>• Increased food prices, as land is removed from food production for restoration efforts (Searchinger et al., 2019)</li> <li>• Reduced access to resources - such as timber, wild honey, etc. - and lands for local and indigenous populations (Bossio et al., 2021)</li> <li>• Increased inequality, if subsidies mostly reward land-owning elites while inadequately compensating other members of the local communities (Chomba et al., 2016)</li> </ul>

Action	Environmental dimension(s)	What potential trade-offs could this action generate?
<b>8</b> Pay farmers for delivering public environmental goods such as increasing soil carbon sequestration or using watershed protection strategies to reduce pollution from fertilizers and manure	Chemical pollution Soil health GHG emissions	<ul style="list-style-type: none"> <li>• Increased competition for water and other resources with crops, if farmers introduce non-native trees as monocultures with the aim of providing ecosystem services (Bossio et al., 2021)</li> </ul>
<b>9</b> Integrate low-carbon and renewable energy sources into all new government-led agriculture investment programmes, promoting technologies such as zero-energy cooling chambers, manure digesters, and solar- and wind-powered irrigation systems or water pumps, to reduce direct on-farm GHG emissions	GHG emissions	<ul style="list-style-type: none"> <li>• Increased risk of job losses in fossil fuel and related industries (International Council for Science, (ICSU), 2017)</li> </ul>



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# Seed systems in conflict-affected areas

## Context Analysis Tool

[Learn more](#)



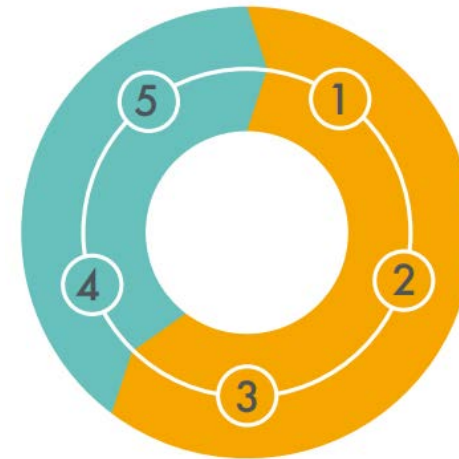
### Phase 1 Assess the context

- 1 Patterns of the conflict
- 2 Effects of conflict on seed systems
- 3 Current status of seed system



### Phase 2 Analyze and identify opportunities to improve seed system functioning

- 4 Decision-making framework for working on seed systems in a given conflict context
- 5 Programming interventions – identify specific programming opportunities to improve seed system functioning



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Strengthening  
smallholder farmer  
seed systems





Food and Agriculture Organization of the United Nations



# Agroecology products: - AE Dialogue Series - Consumer Guide on AE

Entry points for the upscaling of agroecology and the protection of consumer rights



[Dialogue Series](#)

[Consumer Guide](#)



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# 1<sup>st</sup> Eastern African Agroecology Conference

Transforming Food Systems for  
Responsible Production,  
Consumption and Social Wellbeing

[Sign Up](#)

## When:

21-24th March, 2023

Registration until 17th March

## Where:

Nairobi, Kenya

Safari Park Hotel



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ECOLOGICAL ORGANIC  
AGRICULTURE

**Growing Sustainably**



# Avian Influenza Updates

Possible Impacts on Food Systems

**Situation Reports:**

[WHO](#)

[CDC](#)

[EC Food Safety](#)

**Media Coverage:**

[The Conversation](#)

[The Badger Herald](#)

**Scientific Research:**

[The Ohio State University](#)

[Alders et al. \(2014\)](#)



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# Push-pull agricultural management technique

Amanuel Tamiru

Scientist, Behavioural and Chemical Ecology Unit, icipe, Nairobi



# Developmental challenges – Sub-Saharan Africa and beyond

## ❖ Poverty

## ❖ Food and nutrition insecurity

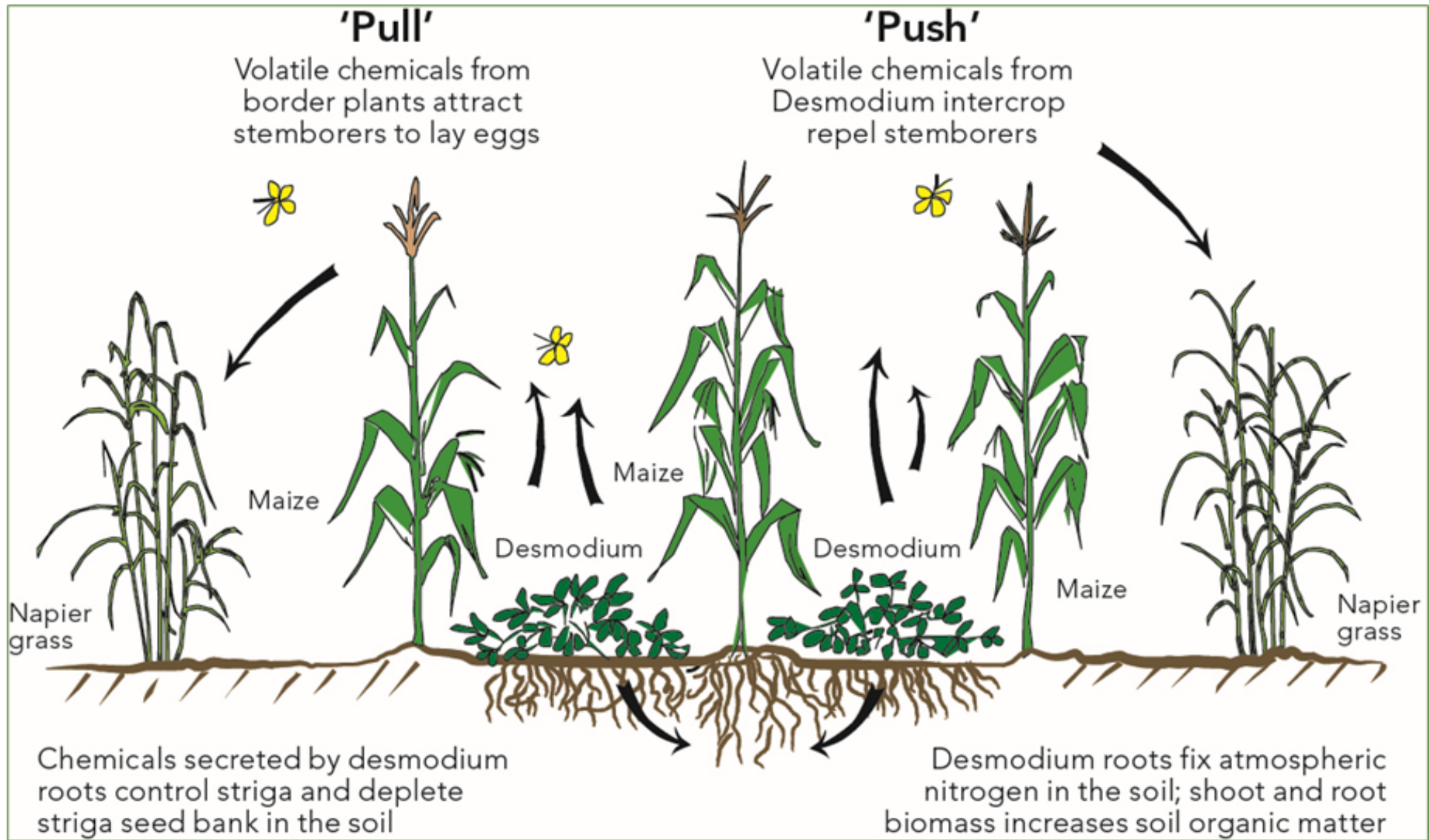
## ❖ Low crop production and productive

- Cereal & vegetable crop pests
- Parasitic striga weed
- Low soil fertility
- Land degradation

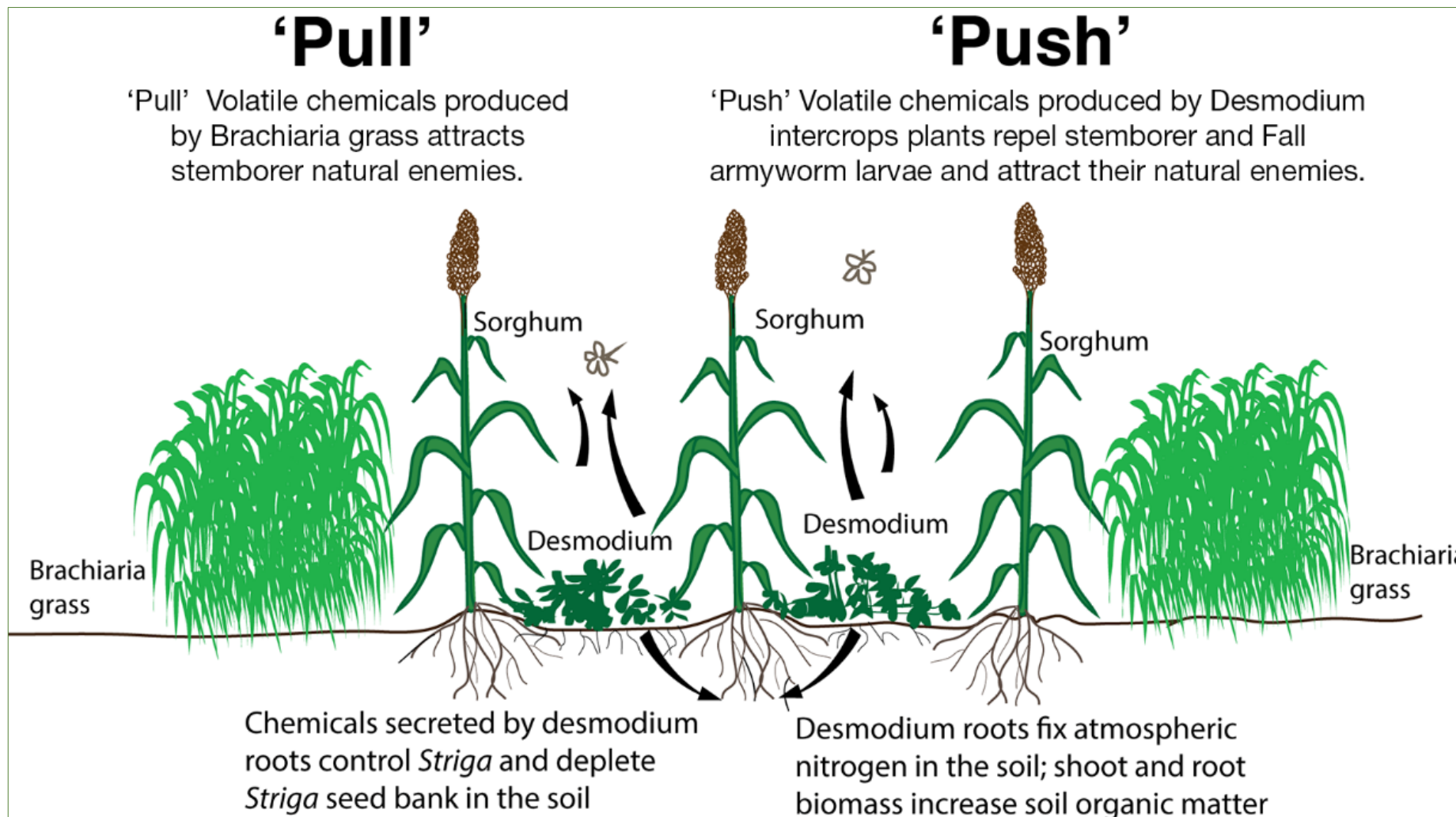
## ❖ Widespread practices

- Synthetic pesticides (cost and adverse impact on the health of people, animals and environment)
- Inorganic soil fertilizers (expensive and negative ecological impact)
- Overgrazing

# Conventional Push-Pull



# Climate-Smart Push-Pull



# Bioactive Volatiles From Push-Pull Companion Crops Repel Fall Armyworm and Attract Its Parasitoids

5,621

total views

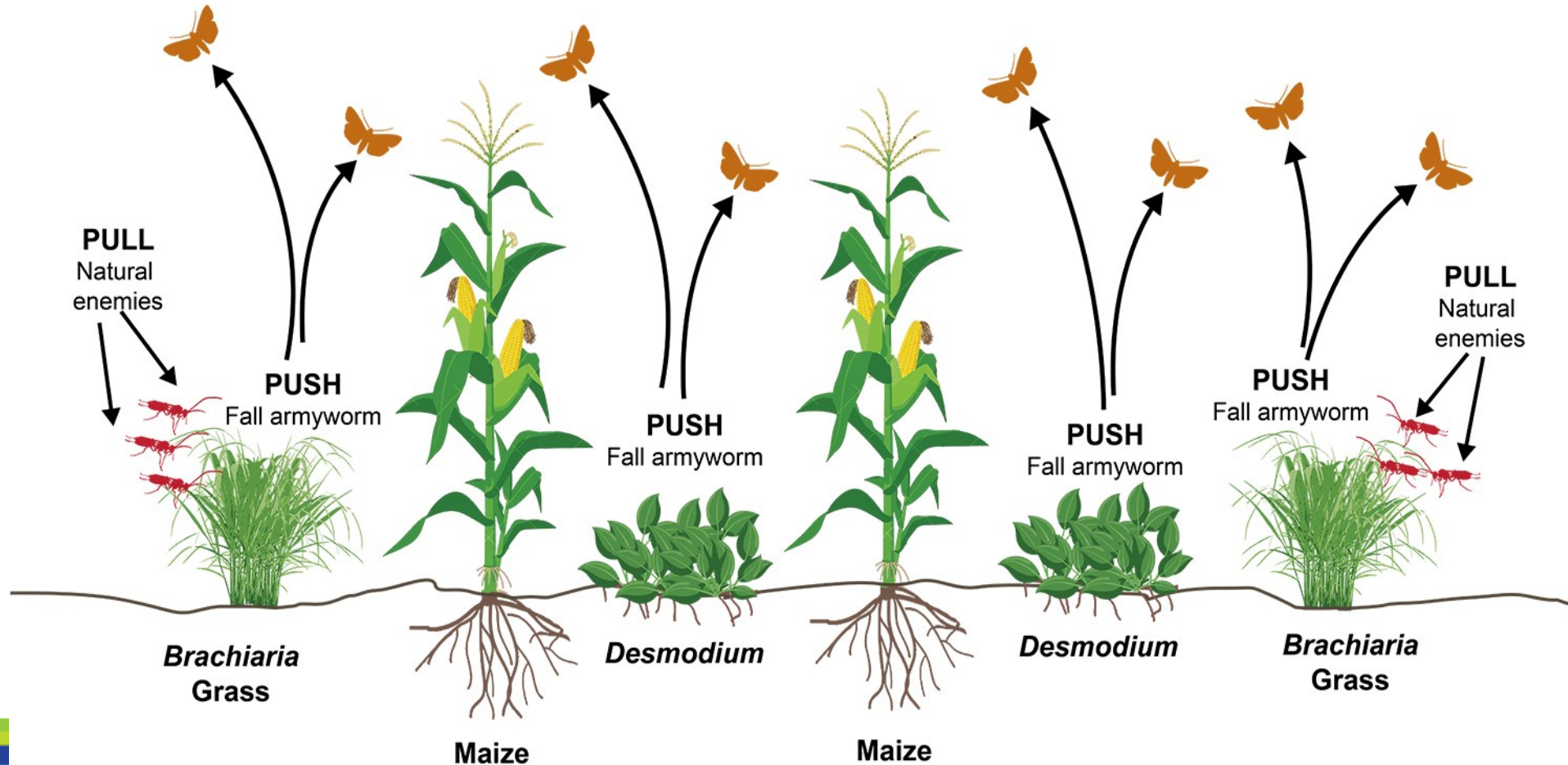


[View Article Impact](#)

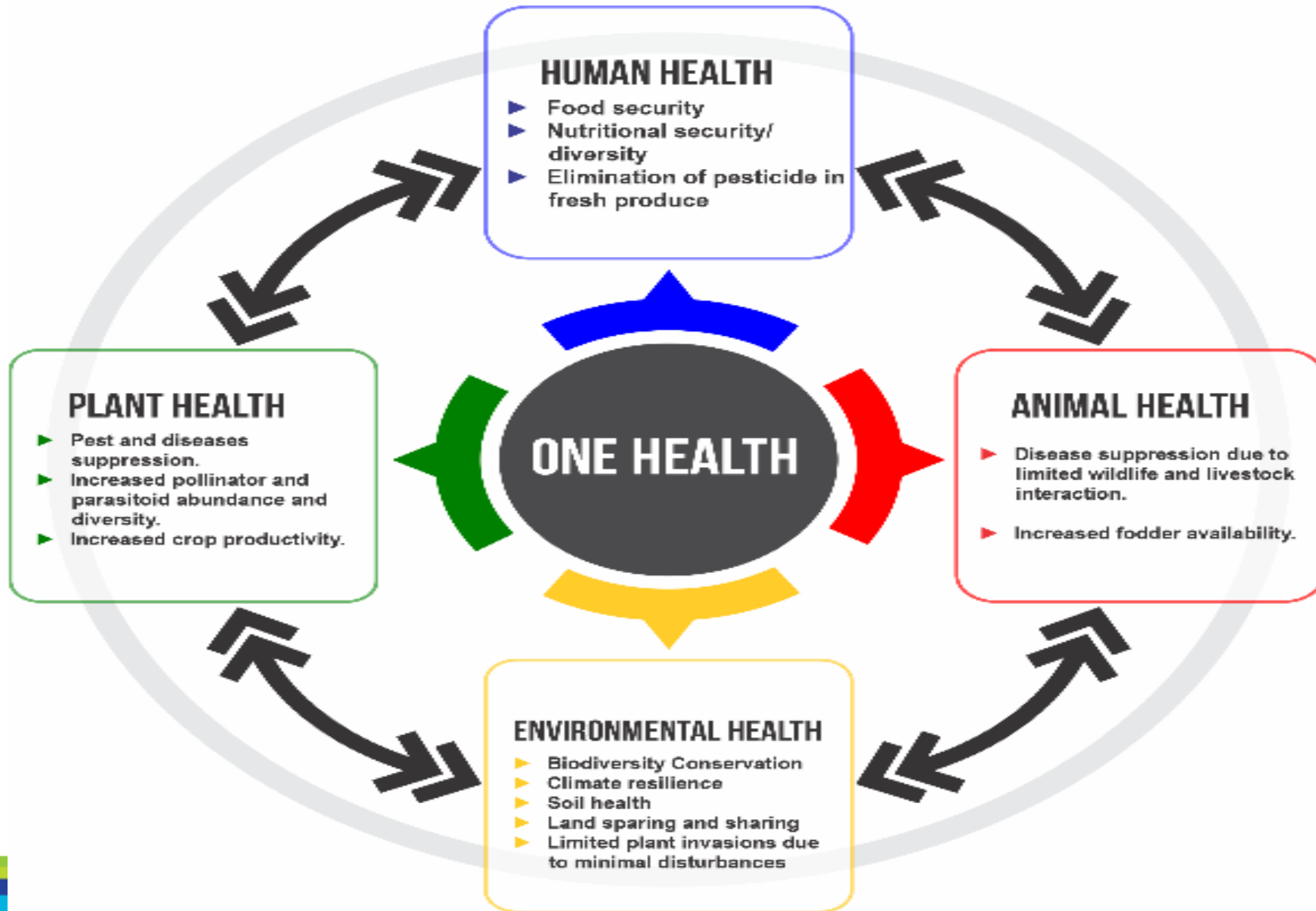
Islam S. Sobhy<sup>1,2\*</sup>, Amanuel Tamiru<sup>3\*\*</sup>, Xavier Chiriboga Morales<sup>3</sup>, Dickens Nyagol<sup>3</sup>, Duncan Cheruiyot<sup>3</sup>, Frank Chidawanyika<sup>3,4</sup>, Sevgan Subramanian<sup>3</sup>, Charles A. O. Midega<sup>3,5</sup>, Toby J. A. Bruce<sup>1\*</sup> and Zeyaur R. Khan<sup>3</sup>

Edited by

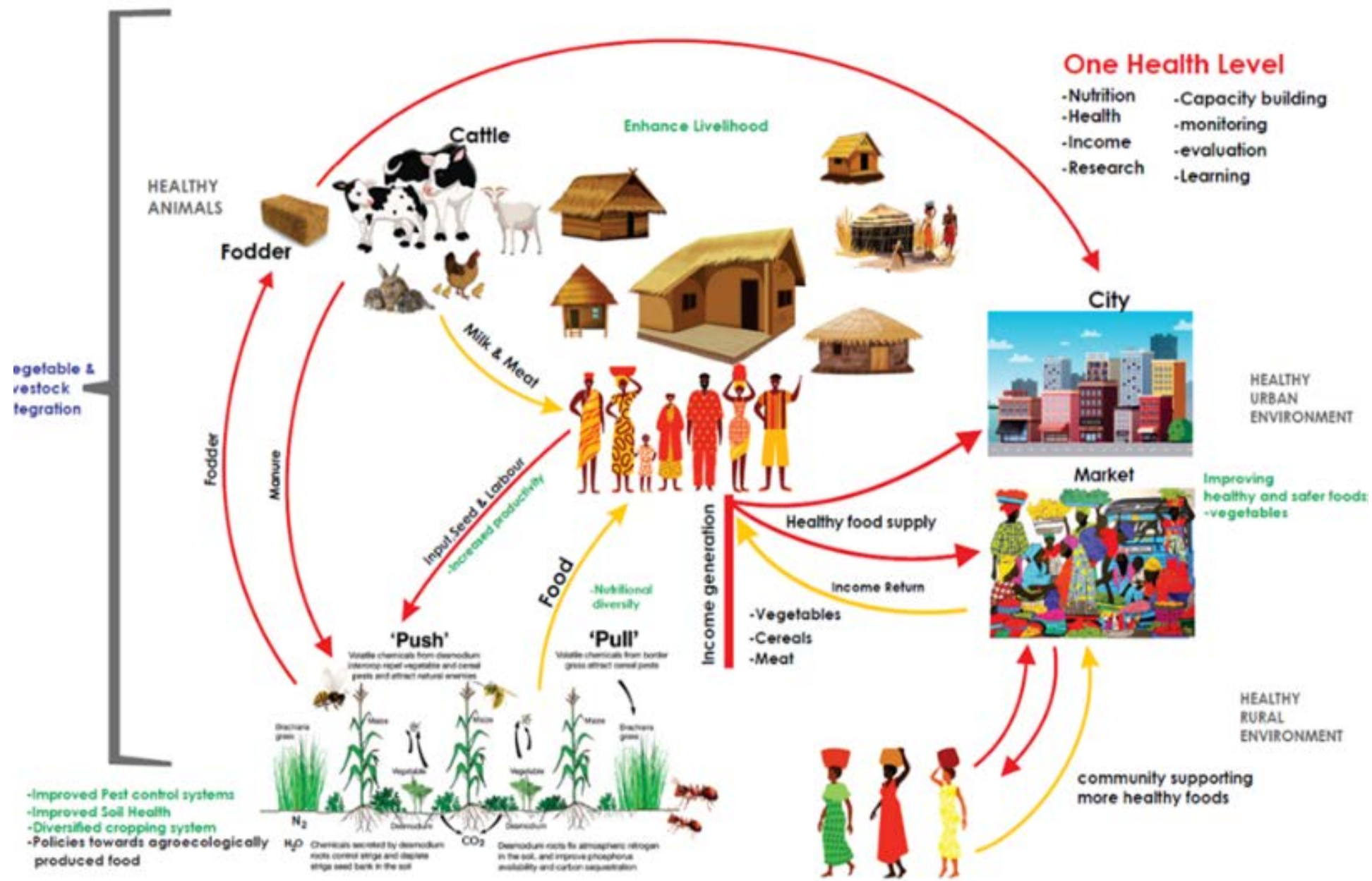
Maria C. Blassioli Moraes  
Brazilian Agricultural Research Corporation (EMBRAPA), Brazil



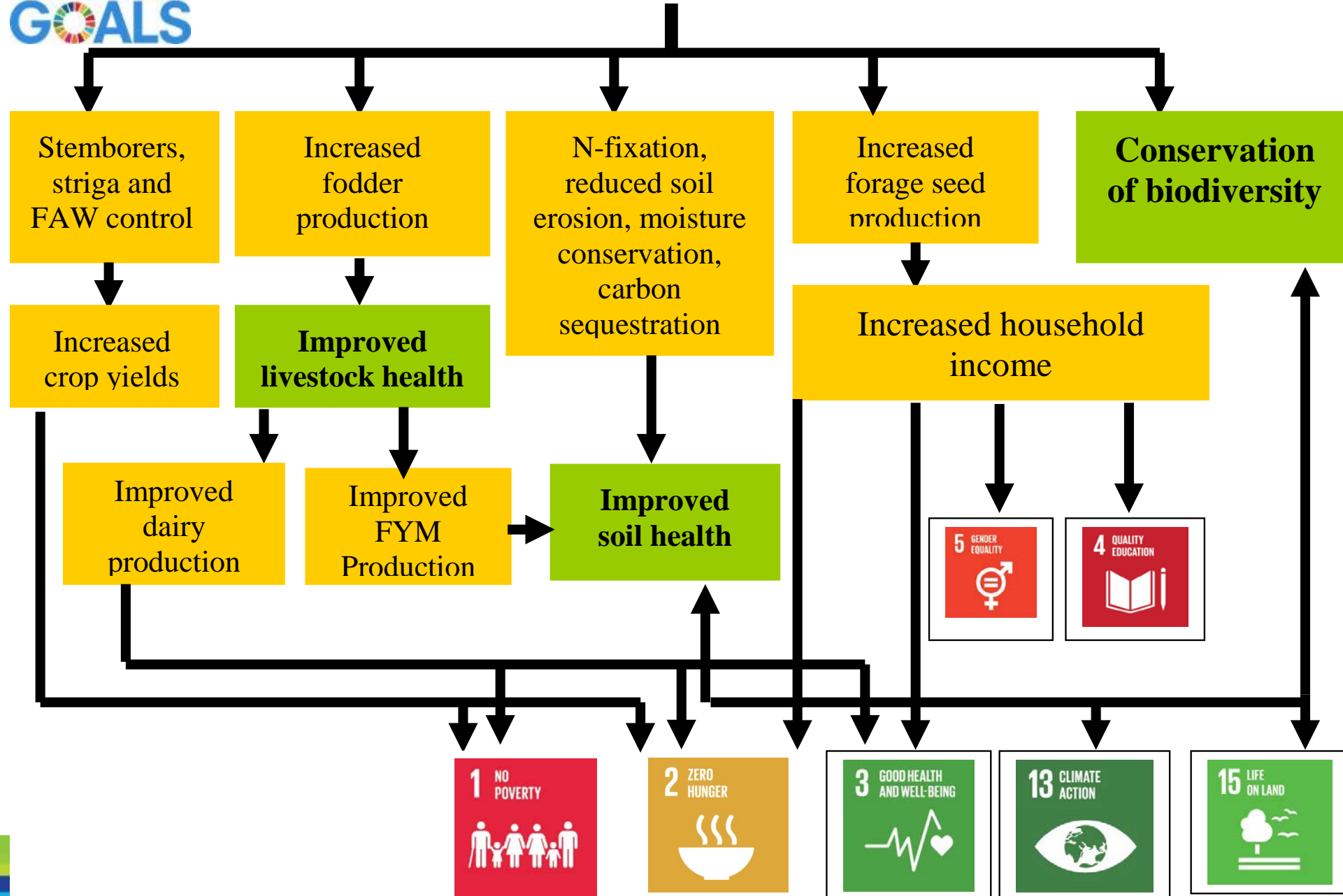
# Attributes of push-pull ensuring optimal one health outcomes







# Push-Pull & UN Sustainable Development Goals



# ACKNOWLEDGEMENT

## Donors directly providing financial support to *icipe*



# Thank you



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# NEXT STEPS & A+FS ANNOUNCEMENTS

- The presentations from today will be available on the Shareweb at:  
<https://www.shareweb.ch/site/Agriculture-and-Food-Security/CUG/Pages/thoughts-for-food.aspx>
- We'll be back with more Thoughts for Food on 3<sup>rd</sup> May
- Share news, topics and ideas with us

# Food Systems Learning Journey

Region Nr.4 : Asia | Focus DRR

5<sup>th</sup> April | 9:00-10:30 CET | online

Region Nr.5 : Latin America | MSD

4<sup>th</sup> May | 16:00-17:00 CET | online



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Before you leave...

**What do you think about this meeting?**

**<https://forms.office.com/r/k1UaAgznCb>**



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**Thank you!**  
**Stay well, stay safe and stay connected!**