Agricultural Innovation Systems: basic concepts and potential pathways

María Boa-Alvarado

PhD student

Cornell University

Content

- Historical background
- Key concepts: AIS
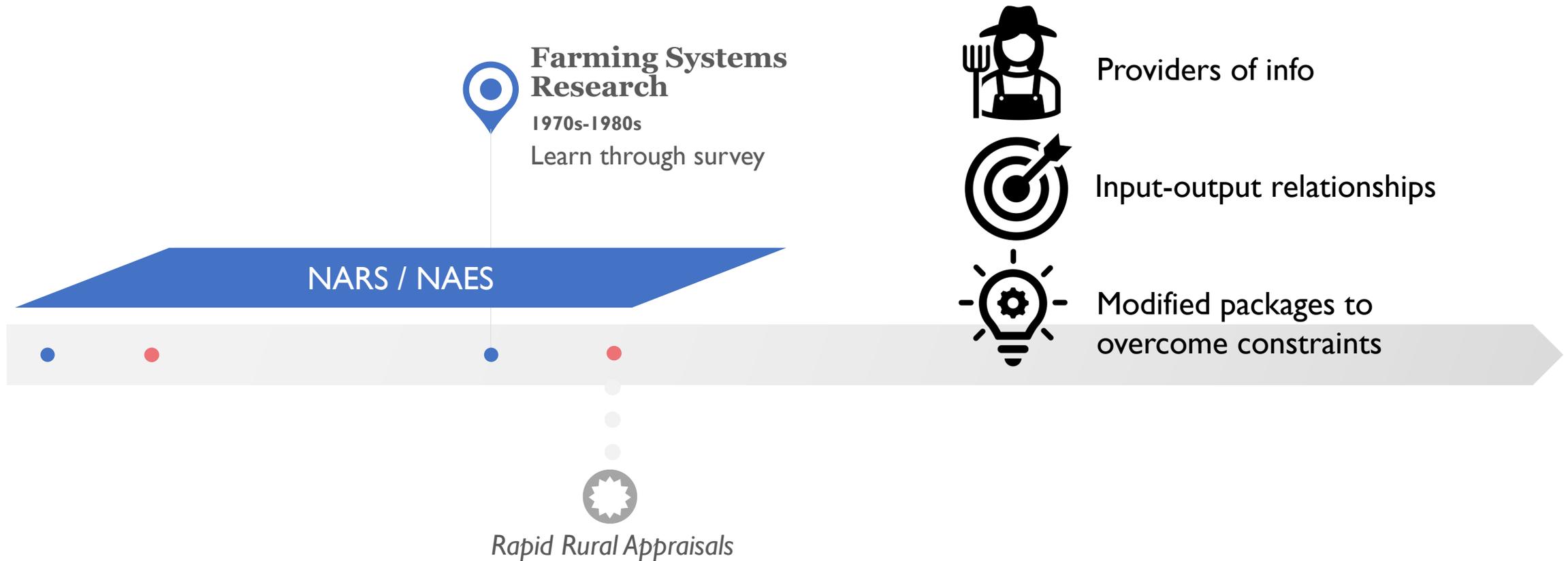- AIS for whom?
- Opportunities for the future

Historical background

Paradigms of agricultural innovation

Transfer of technology
1960s

Supply through pipeline

NARS

Learn, adopt, conform

Productivity

Technology packages

Paradigms of agricultural innovation

Farming Systems Research

1970s-1980s

Learn through survey

NARS / NAES

Providers of info

Input-output relationships

Modified packages to overcome constraints

Rapid Rural Appraisals

Paradigms of agricultural innovation

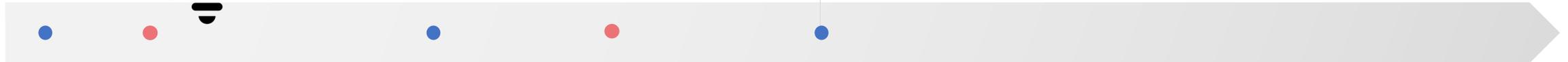Diagnose, experiment, test, adapt

Farm-based

Joint production of knowledge

Farmer First / Participatory Research

1990s

Collaborate in research

AKIS

Paradigms of agricultural innovation

Co-generate knowledge, processes and innovation

Beyond the farm

Enhace capacities to innovate

Learning for change / Innovation Systems
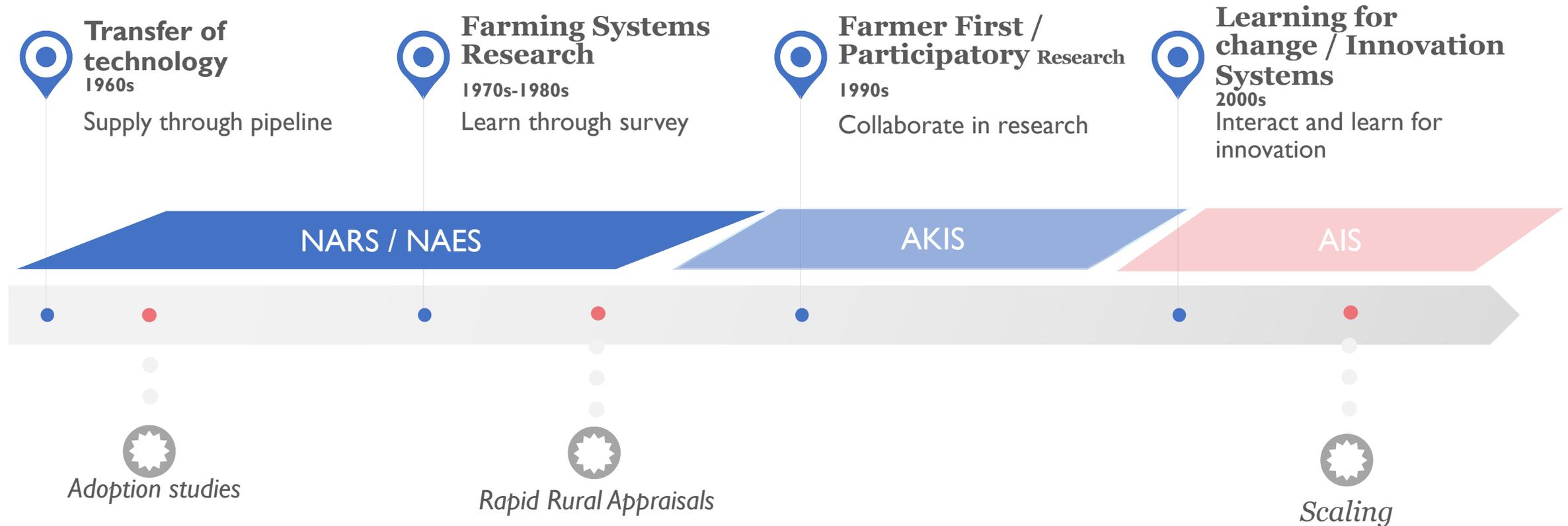**2000s**
Interact and learn for innovation

AIS

Scaling

Sources: Hall, 2007

Paradigms of agricultural innovation

Transfer of technology
1960s
Supply through pipeline

Farming Systems Research
1970s-1980s
Learn through survey

Farmer First / Participatory Research
1990s
Collaborate in research

Learning for change / Innovation Systems
2000s
Interact and learn for innovation

NARS / NAES

AKIS

AIS

Adoption studies

Rapid Rural Appraisals

Scaling

Sources: Hall, 2007

Paradigms of agricultural innovation

Transfer of technology
1960s
Supply through pipeline

Farming Systems Research
1970s-1980s
Learn through survey

Farmer First / Participatory Research
1990s
Collaborate in research

Learning for change / Innovation Systems
2000s
Interact and learn for innovation

NARS / NAES

AKIS

AIS

Orchestrated Systems "push"

Opportunity-driven systems "Pull"
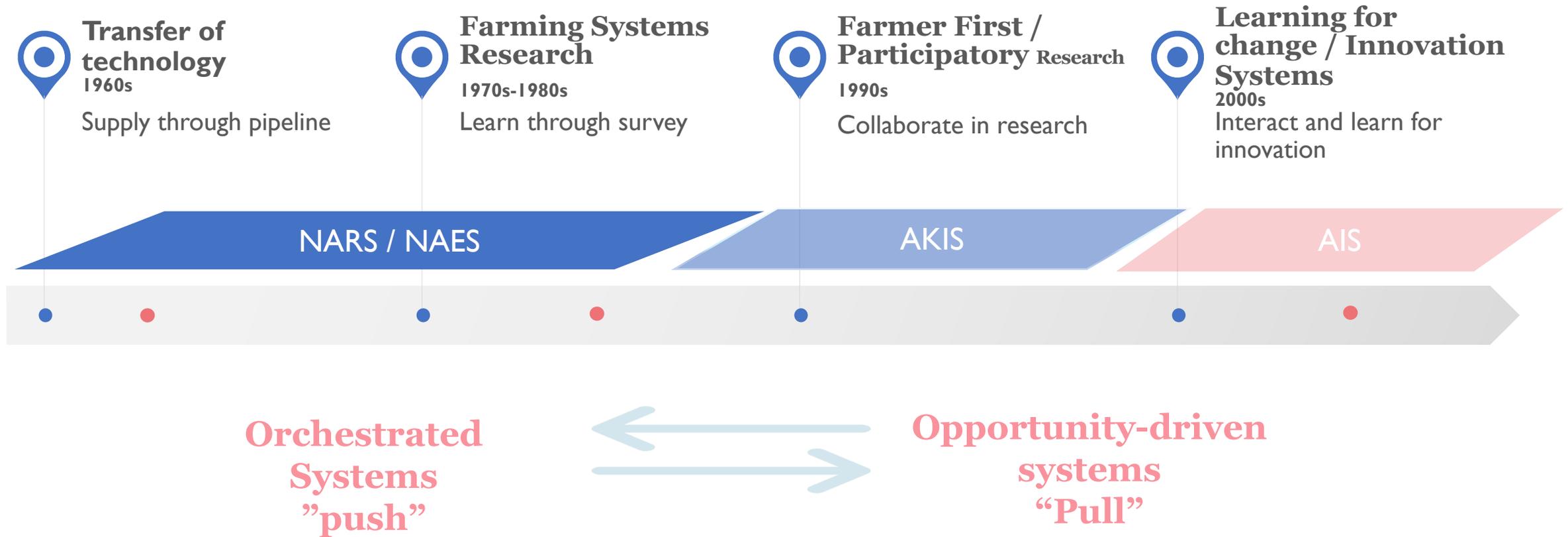
Sources: Hall, 2007

Agricultural Innovation Systems (AIS)

- A network of actors - individuals or organizations – which together with supporting institutions and policies in the agricultural and related sectors, bring existing or new products, processes, and forms of organization into social and economic use (FAO).
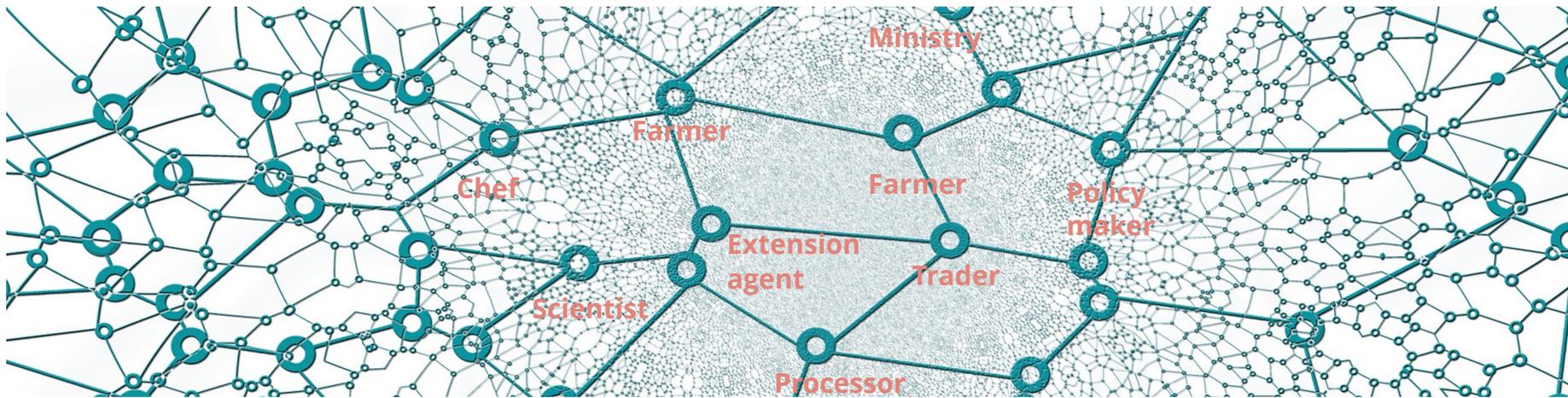
Conventional Aim

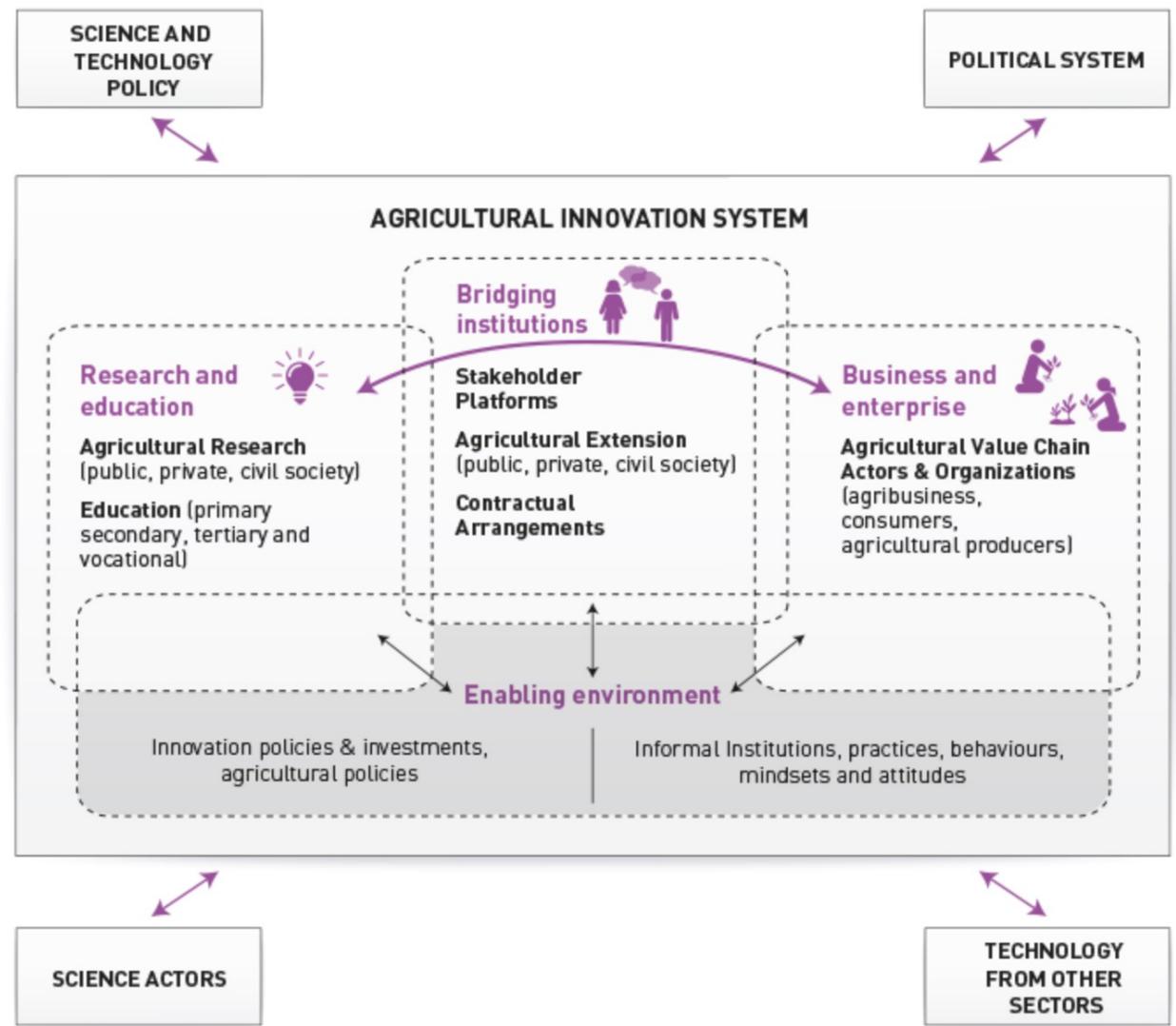| Productivity	Profitability	Sustainability

Agricultural Innovation Systems (AIS)

- A network of actors - individuals or organizations – which together with supporting institutions and policies in the agricultural and related sectors, bring existing or new products, processes, and forms of organization into social and economic use (FAO).

Agricultural Innovation Systems (AIS)

- A network of actors - individuals or organizations – which together with supporting institutions and policies in the agricultural and related sectors, bring existing or new products, processes, and forms of organization into social and economic use (FAO).

SCIENCE AND TECHNOLOGY POLICY

POLITICAL SYSTEM

🔗 Collaboration

🧩 Multi-disciplinary

⌐ Knowledge sharing

AGRICULTURAL INNOVATION SYSTEM

Bridging institutions

Research and education

Agricultural Research (public, private, civil society)

Education (primary secondary, tertiary and vocational)

Stakeholder Platforms

Agricultural Extension (public, private, civil society)

Contractual Arrangements

Business and enterprise

Agricultural Value Chain Actors & Organizations (agribusiness, consumers, agricultural producers)

Enabling environment

Innovation policies & investments, agricultural policies

Informal Institutions, practices, behaviours, mindsets and attitudes

👥 Market orientation

⚖ Policy support

SCIENCE ACTORS

TECHNOLOGY FROM OTHER SECTORS

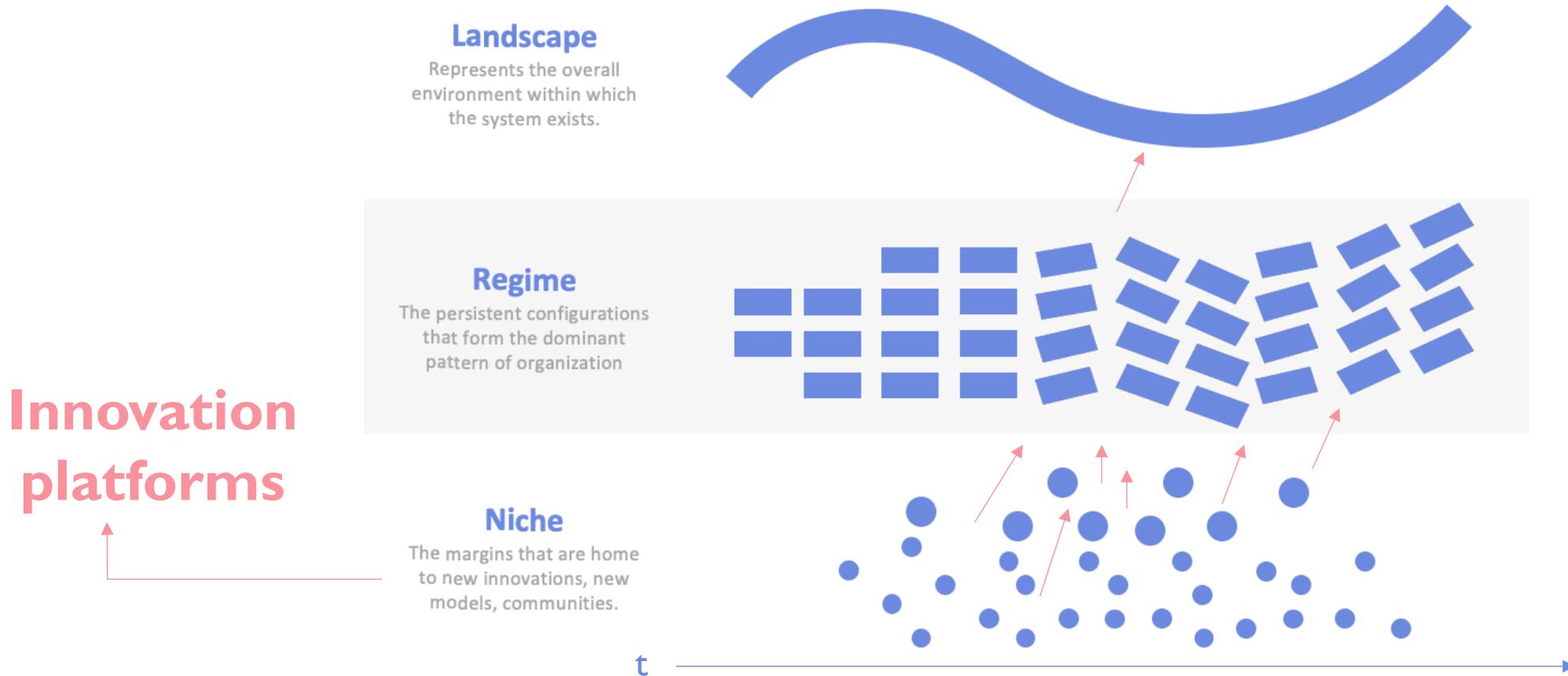Sources: FAO/TAP, 2019; original Arnold and Bell, 2001, adaptation Spielman and Birner 2008

Cycles

Innovation systems depend on (Spielman et al. 2008)

- learning processes
- feedback loops
- iterative interactions

www.systemsinnovation.network

Multi-level Perspective (MLP) framework

Landscape
Represents the overall environment within which the system exists.

Regime
The persistent configurations that form the dominant pattern of organization

Innovation platforms

Niche
The margins that are home to new innovations, new models, communities.

t
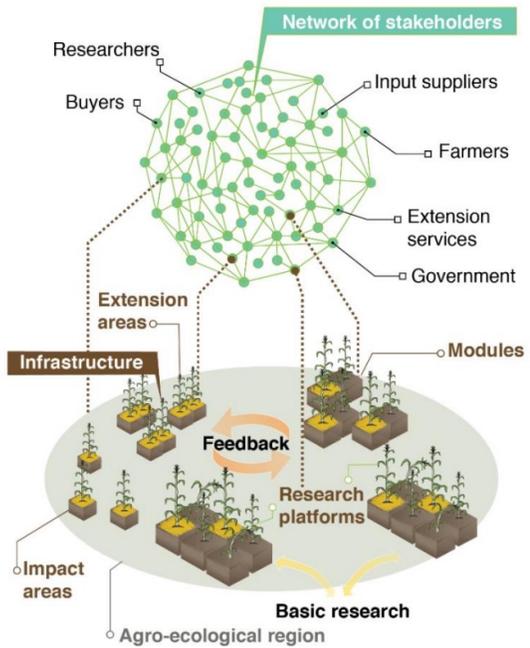
Innovation Hubs
-
CIMMYT and partners

Local Technical Agroclimatic Committees (MTA)
-
CIAT and partners

Water and Agriculture Fund (FOAG)
-
TNC, CRS and partners

Who makes decisions? Who benefits?

In the context of the Global South, there are some critics to the AIS approach:

- Monopolized agenda → agenda driven by powerful actors
- Technocratic bias → "nail and hammer" metaphor
- Gender and social equity bias → inclusion
- Neoliberal bias → market-driven solutions
- Limited institutional capacity → local contexts/histories

Opportunities for the future
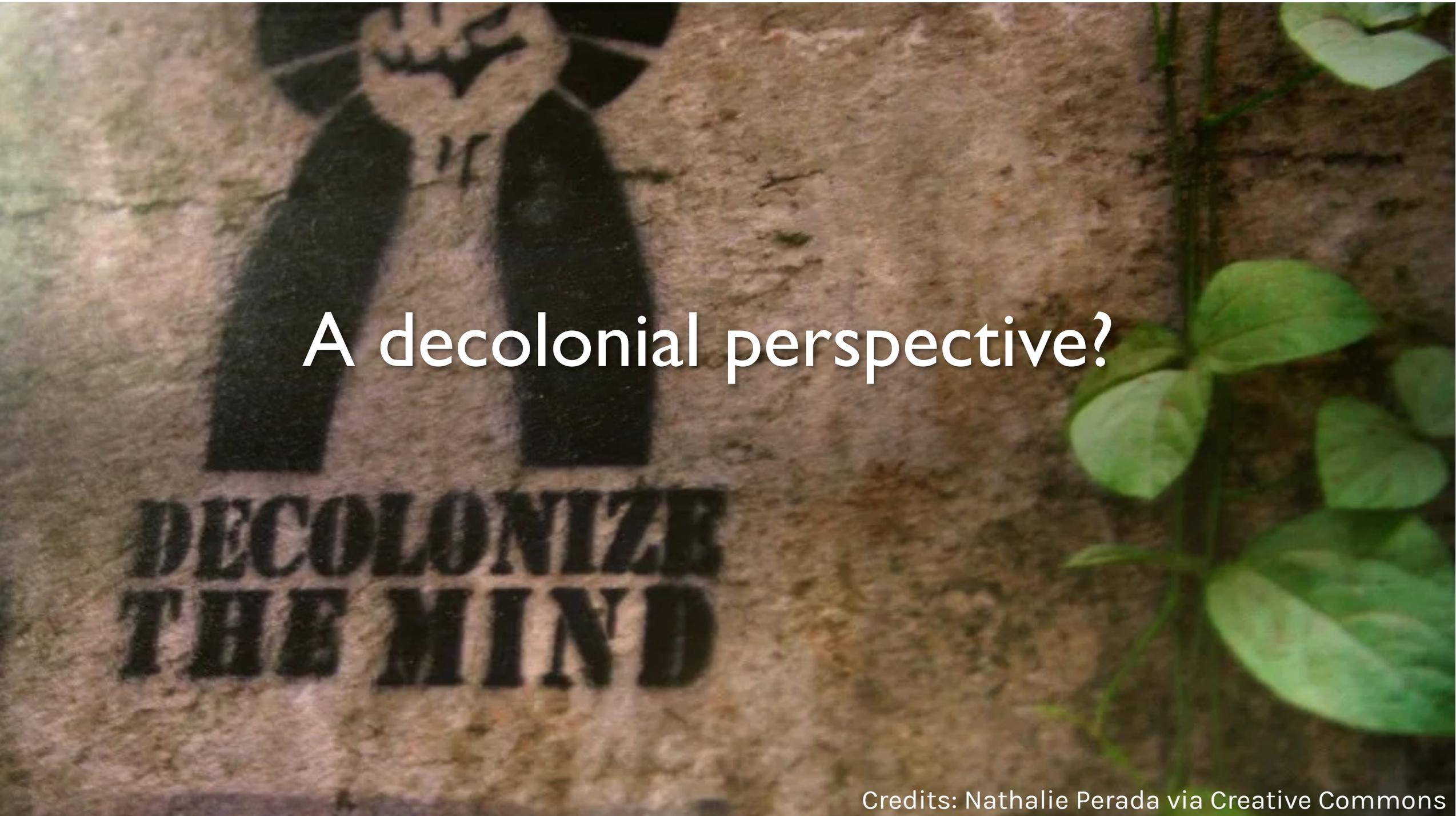
A decolonial perspective?

What can we learn from it? Let's start questioning ourselves…

- What are **historical and structural inequalities**? How are we supporting (indirectly and directly) keeping the current system in place? How can we change this?

What can we learn from it? Let's start questioning ourselves…

- Who are the **underrepresented and marginalized groups**? How are we (indirectly and directly) marginalizing them? How can we center their voices?

What can we learn from it? Let's start questioning ourselves…

- What kind of **indigenous and local knowledge exist** in our systems? How do we embrace them and recognize them?

What can we learn from it? Let's start questioning ourselves…

- What do **people want for their lives**? What do they want to achieve as communities? How can we support their leverage?
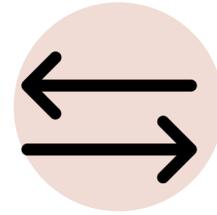
Take-away messages

Take-aways

People at the center

Embrace the process

multidimenstional

multistakeholder

long-term

Build relations

Navigate change

Thank you!
!Gracias!

mdb339@cornell.edu