Engaging with Academia and Research Institutions (ARIs) to support Family Farmers and Food System Transformation During and Post COVID-19 Pandemic in Asia

SEAMEO SEARCA

AFA — Asian Farmers' Association for Sustainable Rural Development

unesco

cirad — AGRICULTURAL RESEARCH FOR DEVELOPMENT

GRET — Professionals for Fair Development

With technical assistance from the FAO Regional Office for Asia and the Pacific

The role of actor-networks in enabling agroecological innovation

Lessons from 15 years of field applications in Laos

Jean-Christophe Castella[1], Guillaume Lestrelin[2], Sisavath Phimmasone[3], Tran Quoc Hoa[2], Pascal Lienhard[2]

1. IRD, France; 2. CIRAD, France; 3. DALaM, Lao PDR

Agricultural innovation systems (AIS)

AIS - a network of organizations and individuals, together with the infrastructures and institutions that affect the way different agents interact, access, exchange and use agricultural knowledge

Approach	Farming Systems Research (FSR)	Agricultural Knowledge and Info. Systems (AKIS)	Agricultural Innovation Systems (AIS)
Period	1980s	1990s	2000s
Scope	Activity based	Output based	Outcome-based
Focus	Technical package generation and transfer	Knowledge coproduction and dissemination	Multi-actor learning alliances – innovation platforms
Research	(Multi)-disciplinary	Interdisciplinary	Transdisciplinary
Knowledge	Technical packages	Knowledge coproduction	Experiential learning
Postures	'Supply-push' by ARIs	'Demand-pull' by farmers	Problem driven holistic approach - experiential learning
Actors	Universities and research institutions (ARIs)	Farmers, ARIs, extension services, NGOs	All economic actors who actively use or generate knowledge
ARIs' role	Experts	Partners	Facilitators
Impact	Adoption of techniques	Behavioral changes	Innovation capacity

Agroecology innovation systems (AeIS)

Actor networks that mainstream agroecology principles and practices in supporting:

- the transition toward agroecosystems' resilience
- family farming and food system transformations

The agroecological knowledge is **locally co-constructed** and is therefore **location specific**. The performance and diffusion of agroecological innovations therefore involve a dimension of adaptation to local contexts and depend on favourable socioeconomic and ecological conditions.
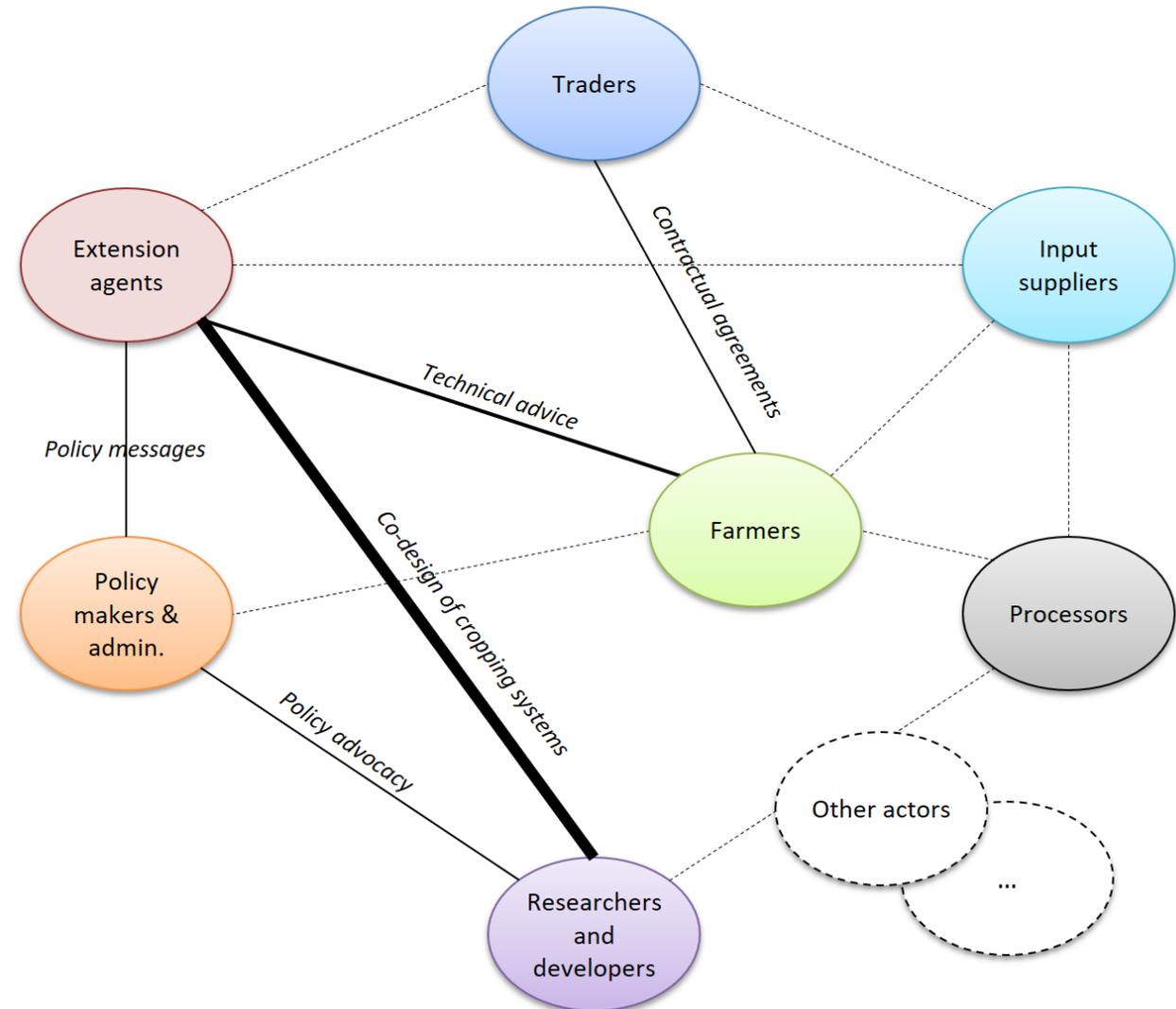
Agroecology scope from **farmer fields to food systems** and the society as a whole. Transformative approaches toward agroecology consequently evolved from agricultural extension and farmer adoption of 'alternative' practices to **redesigning the overall socioecological system**.

These **scaling questions** further lead to the issue of **knowledge integration** beyond fields and farms to consider the overall context of innovations, e.g. political economy, governance, infrastructures

Agroecology innovation systems (AeIS)

Actor networks that mainstream agroecology principles and practices in supporting:

- the transition toward agroecosystems' resilience

- family farming and food system transformations

Agroecology innovation systems (AeIS)

Actor x intervention matrix

Incentives

financial, technical, material and/or organizational support is provided to targeted actors allowing them to modify their practices (e.g. subsidies and farm extension work)

Sectors	Financial & material assets	Organizational capacities	Technical capacities	Network configuration	Market structure	Soft institutions	Hard institutions	Infra-structures
Individual farmers								
Farmer organizations								
Agri-input suppliers								
Processors								
Traders		PUSH interventions				PULL interventions		
Extension agents								
R&D actors								
Policy makers and administration								
Civil society								

(Actors)

Enablers — creating an enabling (economic, institutional, cultural, etc.) environment to agroecological transformations

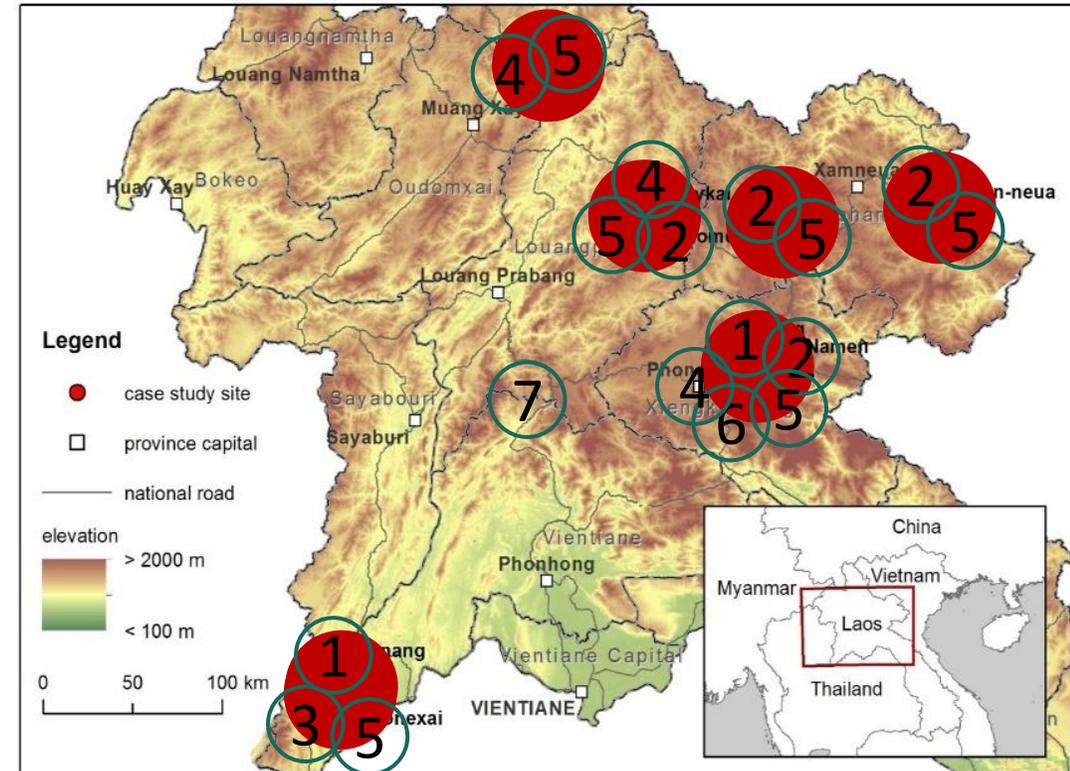# Agroecology innovation systems (AeIS)

Sectors and types of agroecological intervention

Sectors	Examples of intervention	Push-pull
Material assets	Providing equipment, village funds, credit schemes	Push Incentives
Organizational capacities	Structuring farmer groups, village organizations	
Technical capacities	Providing technical training, advice	
Network configuration	Organizing farmer-to-farmer, producer-to-buyer exchanges	
Market structure	Promoting contract farming agreements	Pull Enablers
Soft institutions	Organizing awareness raising campaigns	
Hard institutions	Drafting laws, regulations	
Physical infrastructure	Building roads, schools, banks, telecom network	

Comparative analysis of case studies in Laos

1. The PRONAE-PASS projects on Conservation Agriculture in southern Sayaboury Province and Xieng Khouang

2. The Catch-Up program (cooperatives, farmers organizations, participatory land use planning)

3. The Conservation Agriculture Development Fund (CADF) in Sayaboury Province

4. NUDP network of village cluster Technical Service Centers

5. The EFICAS project in Louang Prabang, Houaphan and Phongsaly, landscape approach to agroecology

6. PAFO Xieng Khouang Provincial 'Land Regeneration Initiative' in Kham district

7. The Lao Uplands Initiative (LUI) for policy enabling environment

Comparative analysis of case studies in Laos
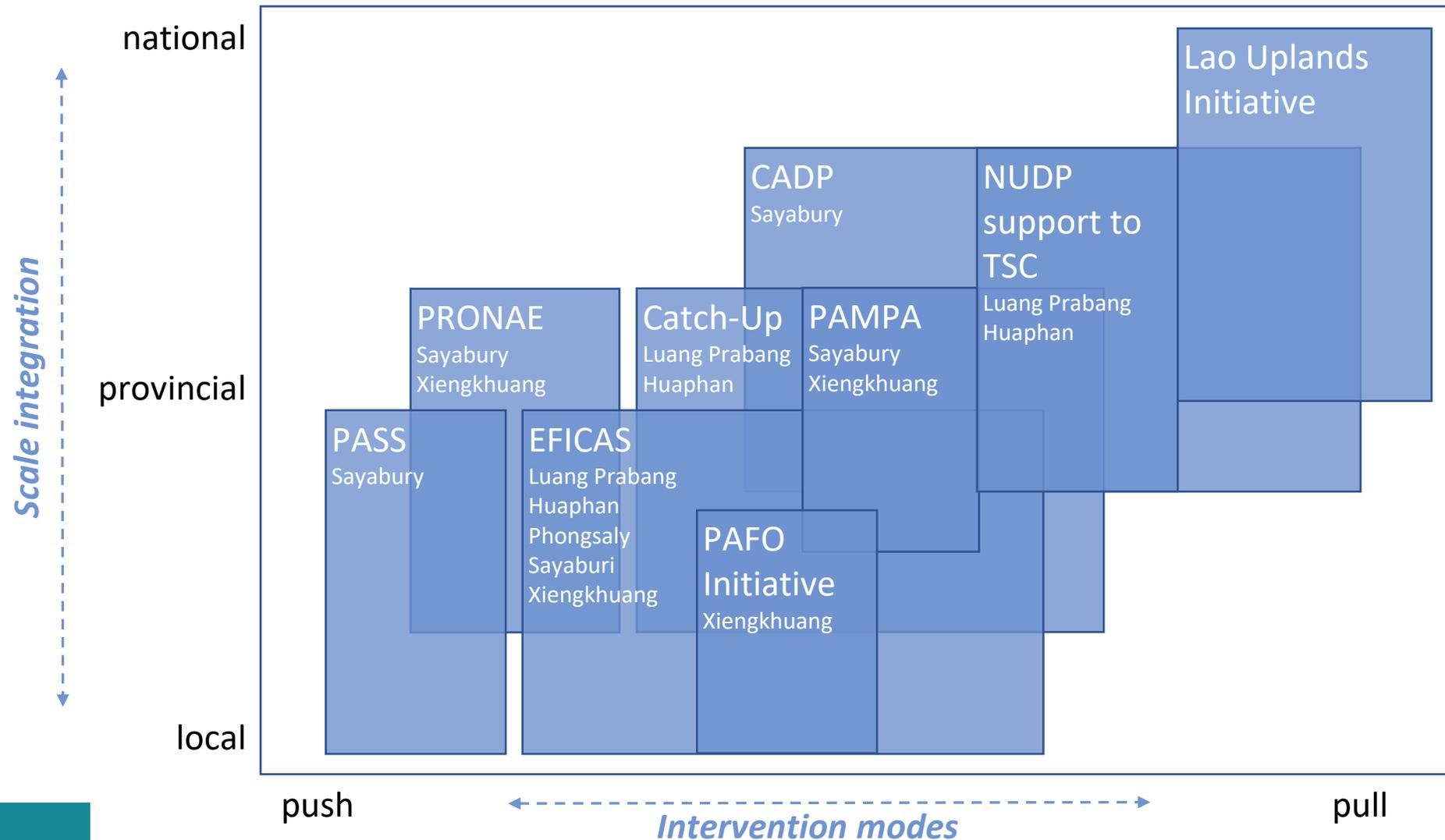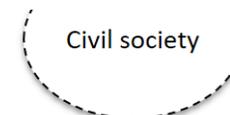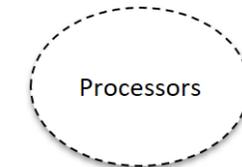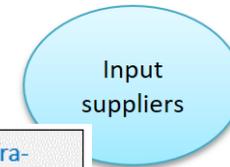

Interventions timeline

Comparative analysis of case studies in Laos

Comparative analysis of case studies in Laos

1. PRONAE-PASS case study

Sectors / Actors	Financial assets	Organizational capacities	Technical capacities	Network configuration	Market structure	Soft institutions	Hard institutions	Infra-structures
Individual farmers	F1	O1	T1	N1, N2		S1		
Farmer organizations								
Agri-input suppliers				N2				
Processors								
Traders								
Extension agents	F2, F3	O2	T2	N1				
R&D actors	F4							
Policy and administrat.				N1				
Civil society								

Financial and material assets
F1. Free leasing of mechanical planters, distribution of equipment
F2. Funding of extension work
F3. Funding of demonstration activities
F4. Funding of field experiments
F5. Credit schemes for mechanization, seeds and fertilizers

Organizational capacities
O1. Structuring of production groups
O2. Support for programming and budgeting
O3. Structuring of associations
O4 Support to land management committees

Technical capacities
T1. Technical advice and coaching on CA
T2. Trainings on CA techniques
T3. Support to farmer-to-farmer exchanges and field visits
T4. Trainings on participatory land use planning

Network configuration
N1. Funding of meetings and peer exchanges
N2. Facilitation of exchanges between farmers and private sector
N3. Roundtables and workshops involving multiple development projects

Technical capacities
T1. Technical advice and coaching on CA
T2. Trainings on CA techniques
T3. Support to farmer-to-farmer exchanges and field visits
T4. Trainings on participatory land use planning

Network configuration
N1. Funding of meetings and peer exchanges
N2. Facilitation of exchanges between farmers and private sector
N3. Roundtables and workshops involving multiple development projects

Market structure
M1. Promotion of contract-farming systems
M2. Direct exchanges between farmers and agro-input suppliers
M3. Facilitation of cross-border trade

Soft institutions
S1. Sensitization on tillage risk and land degradation
S2. Sensitization on safe use of pesticides
S3. Media communication and radio broadcast

Hard institutions
H1. Provincial decrees establishing the CA development
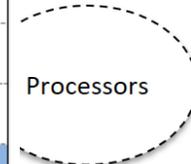H2. Village land use planning and land allocation

Infrastructures
I1. Tax collection system and provincial fund

Traders

Input suppliers

Processors

Individual farmers

Researchers and Developers

Civil society

Comparative analysis of case studies in Laos

3. CA Development Fund case

Actors \ Sectors	Financial assets	Organizational capacities	Technical capacities	Network configuration	Market structure	Soft institutions	Hard institutions	Infra-structures
Individual farmers	F5	O1		N1	M1, M2	S1		
Farmer organizations								
Agri-input suppliers					M2			
Processors								
Traders		O2, O3		N1	M1, M3			I1
Extension agents	F3	O2						
R&D actors								
Policy and administrat.		O2		N1			H1	I1
Civil society								

Processors

Farmers

and Developers

Civil society

Financial and material assets
F1. Free leasing of mechanical planters, distribution of equipment
F2. Funding of extension work
F3. Funding of demonstration activities
F4. Funding of field experiments
F5. Credit schemes for mechanization, seeds and fertilizers

Organizational capacities
O1. Structuring of production groups
O2. Support for programming and budgeting
O3. Structuring of associations
O4 Support to land management committees

Technical capacities
T1. Technical advice and coaching on CA
T2. Trainings on CA techniques
T3. Support to farmer-to-farmer exchanges and field visits
T4. Trainings on participatory land use planning

Network configuration
N1. Funding of meetings and peer exchanges
N2. Facilitation of exchanges between farmers and private sector
N3. Roundtables and workshops involving multiple development projects

Technical capacities
T1. Technical advice and coaching on CA
T2. Trainings on CA techniques
T3. Support to farmer-to-farmer exchanges and field visits
T4. Trainings on participatory land use planning

Network configuration
N1. Funding of meetings and peer exchanges
N2. Facilitation of exchanges between farmers and private sector
N3. Roundtables and workshops involving multiple development projects

Market structure
M1. Promotion of contract-farming systems
M2. Direct exchanges between farmers and agro-input suppliers
M3. Facilitation of cross-border trade

Soft institutions
S1. Sensitization on tillage risk and land degradation
S2. Sensitization on safe use of pesticides
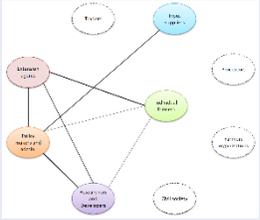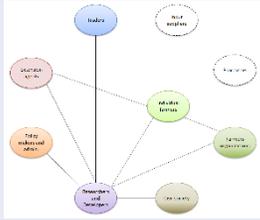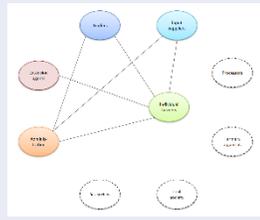S3. Media communication and radio broadcast

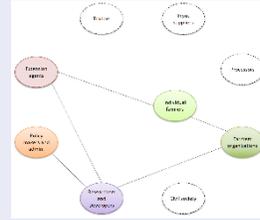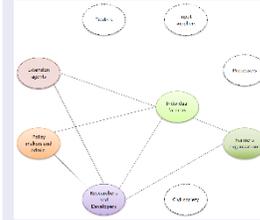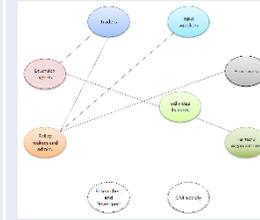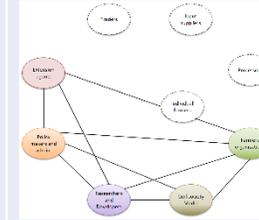**Hard institutions**
H1. Provincial decrees establishing the CA development
H2. Village land use planning and land allocation

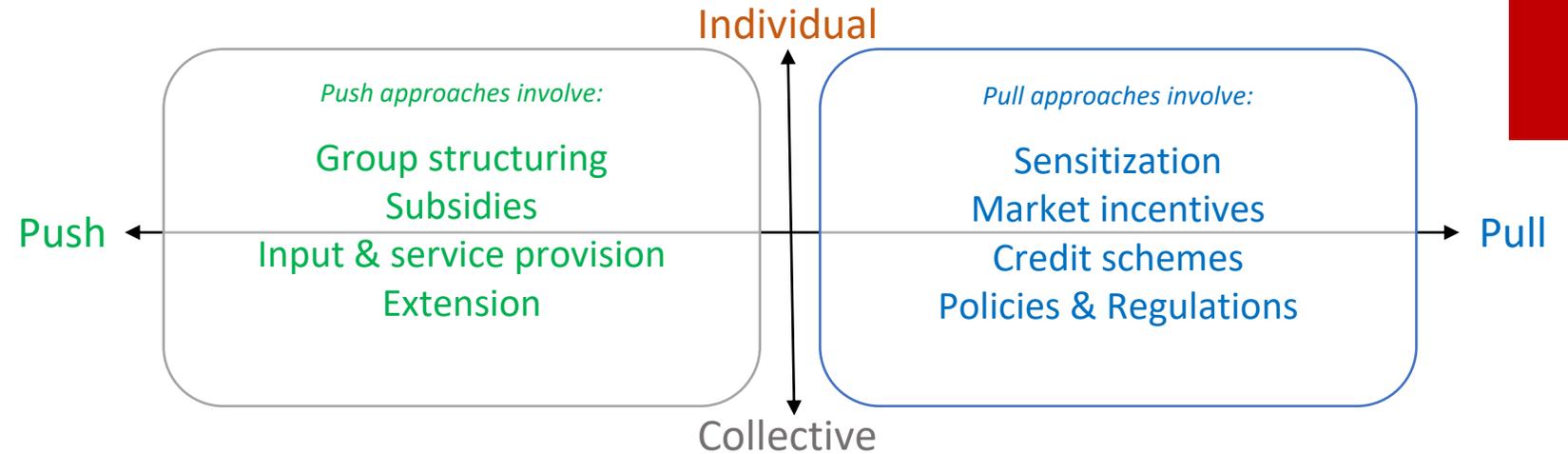**Infrastructures**
I1. Tax collection system and provincial fund

Comparative analysis of case studies in Laos

Projects		PRONAE-PASS	Catch-Up	CADP	TSC-NUDP	EFICAS	PAFO Initiative	LUI
Actors	Individual farmers	XXX	XX	X	X	XX	XX	
	Farmer organizat.		X		XX	XX	XX	X
	Input suppliers	XX		XX			X	
	Processors			X			X	
	Traders		X	XX			XX	
	Extension agents	XX	X	XX	XXX	XX	XXX	X
	R&D actors	XX	XXX		XX	XXX		XXX
	Policy and admin.	X	XX	XXX	X	XX	XXX	XXX
	Civil society		X					XX
Networks								

"actor x intervention" matrixes reveal the similarities and dissimilarities in actor networks structures giving thus a relative weight to agroecology interventions in different sectors

Agroecology innovation systems (AeIS)

- ARIs play key roles in diverse network configurations

- Upscaling grounded in a detailed understanding of local contexts

- Learning loops over long period (15 years)

Individual

Push approaches involve:

Group structuring
Subsidies
Input & service provision
Extension

Push ←

Pull approaches involve:

Sensitization
Market incentives
Credit schemes
Policies & Regulations

→ **Pull**

Collective

The **scope of the interventions** has gradually evolved toward increased involvement of policy makers, private sector and civil society (from push to pull) -> enlarging **agroecology scope** (from recycling and managing diversity to circular economy and cultural values)

Scale integration: from fields and farms to landscapes and value chains

Learning organizations -> enhanced innovation capacity

Take home messages

- AeIS are **learning organizations** – highly adaptive, context-specific
  - Umbrella programs face organizational challenges as they are trapped by bureaucratic and metabolism issues that constrain **flexibility and creativity**,
  - Should largely invest in process of **growth and maturation of individuals, communities and organizations**

- **Actionable knowledge** is at the core of AeIS
  - Designing and nurturing alternative practices in innovation niche while creating an enabling environment for upscaling – **combining 'push' and 'pull'** activities,
  - Bringing lessons from one AeIS to another requires mechanisms to **store** (memory) **and share** (education) **knowledge**

Take home messages

- **Innovation capacity** is ultimately linked to **networking capacity** in AeIS
    - AeIS should be directed towards enhancing the capacity of actors and actor networks to **think and act in complexity**,
    - AeIS no longer promote products or processes but **collective intelligence**. At the heart of AeIS is learning, **cooperation and care**; qualities that contrast sharply with the prevailing competition, compartmentation, and individualistic behaviors,

- **Values and beliefs** of network members in agroecology transformations
    - Lessons from pull interventions such as CADP and LUI pointed to the **limits of project driven AeIS**: challenges to sustain activities beyond projects' time,
    - Projects tend to create a diversity of niches that do not **challenge the sociotechnical system in place** and pain to translate local successes into enabling conditions for change, especially when they challenge the socio-political system in place.

Conclusions

- **A pluralistic approach** to AeIS is desirable, which would spread risk and promote innovation capacity,

- **Learning organizations** accept that some interventions will succeed and others may fail (depending on evaluation criteria),

- **ARIs can play an important role** in supporting bounding (within networks) and bridging (between networks) networking activities that are essential to scaling agroecology innovations

Jean-Christophe Castella

j.castella@ird.fr

https://umr-sens.fr/