

# “Relax” Project

## Promoting resilience in the African rural households: food systems at a crossroads

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Cirad, UMR Moisa

*Thought for Food Initiative:* Fondations Agropolis,  
Carasso et Cariplo.



# Relax in a nutshell

- The project aims to investigate the linkages between agricultural diversity, wild resources diversity & dietary diversity at the level of individuals, households, family farms and villages.
- Researchers from different scientific disciplines together with development practitioners will provide better conceptual tools for interventions aiming to raise food diversity of rural dwellers.
- One in-depth case study in Western Burkina Faso

# Context and history of the project



# The plague of undernutrition

- Nearly half of all deaths in children under 5 are attributable to undernutrition. This translates into the unnecessary loss of about 3 million young lives a year. UNICEF


# A “Nutrition sensitive agriculture” is necessary to eradicate maternal and Child undernutrition.

Marie Ruel *et al*, *The Lancet*. 2013



## THE ROLE OF AGRICULTURE: PRODUCING FOOD TO NOURISH PEOPLE?




JANUARY 2017



### MAKING AGRICULTURE WORK FOR NUTRITION

Synthesis of guiding principles

The food and agriculture sector is essential to human nutrition, but food and agriculture interventions do not always contribute to positive nutritional outcomes. Specific attention is given to making agriculture “nutrition-sensitive”. But what does this mean in practice?



### Maximizing Nutritional Benefits of Agricultural Interventions

Do good, but first of all do no harm

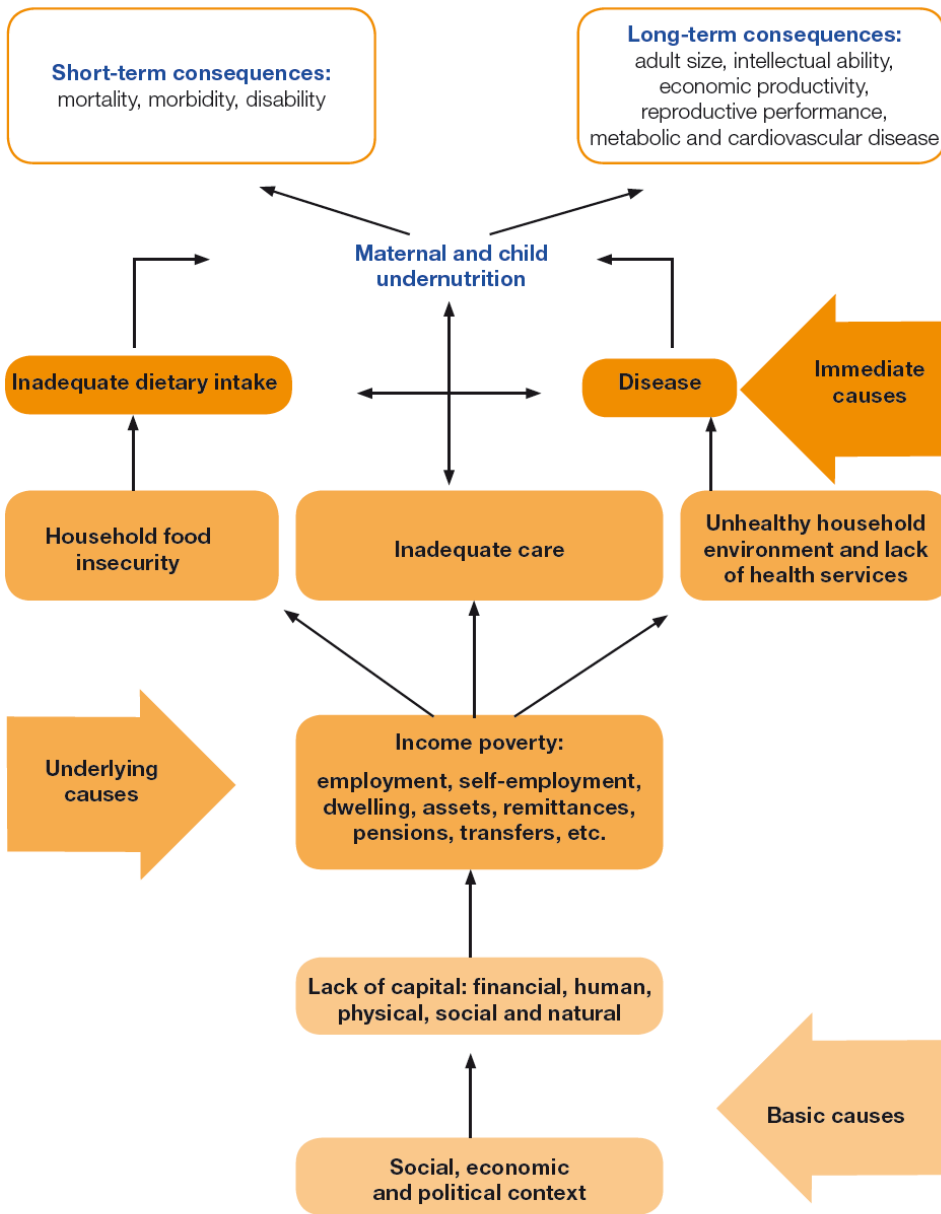
Tom Schaezel  
Infant & Young Child Nutrition (IYCN) Project

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### SOWING THE SEEDS OF GOOD NUTRITION

Making Agricultural Policies Deliver Better Nutrition





EB : cette diapo revient plus loin. Vérifier ce que tu vas en faire ici.

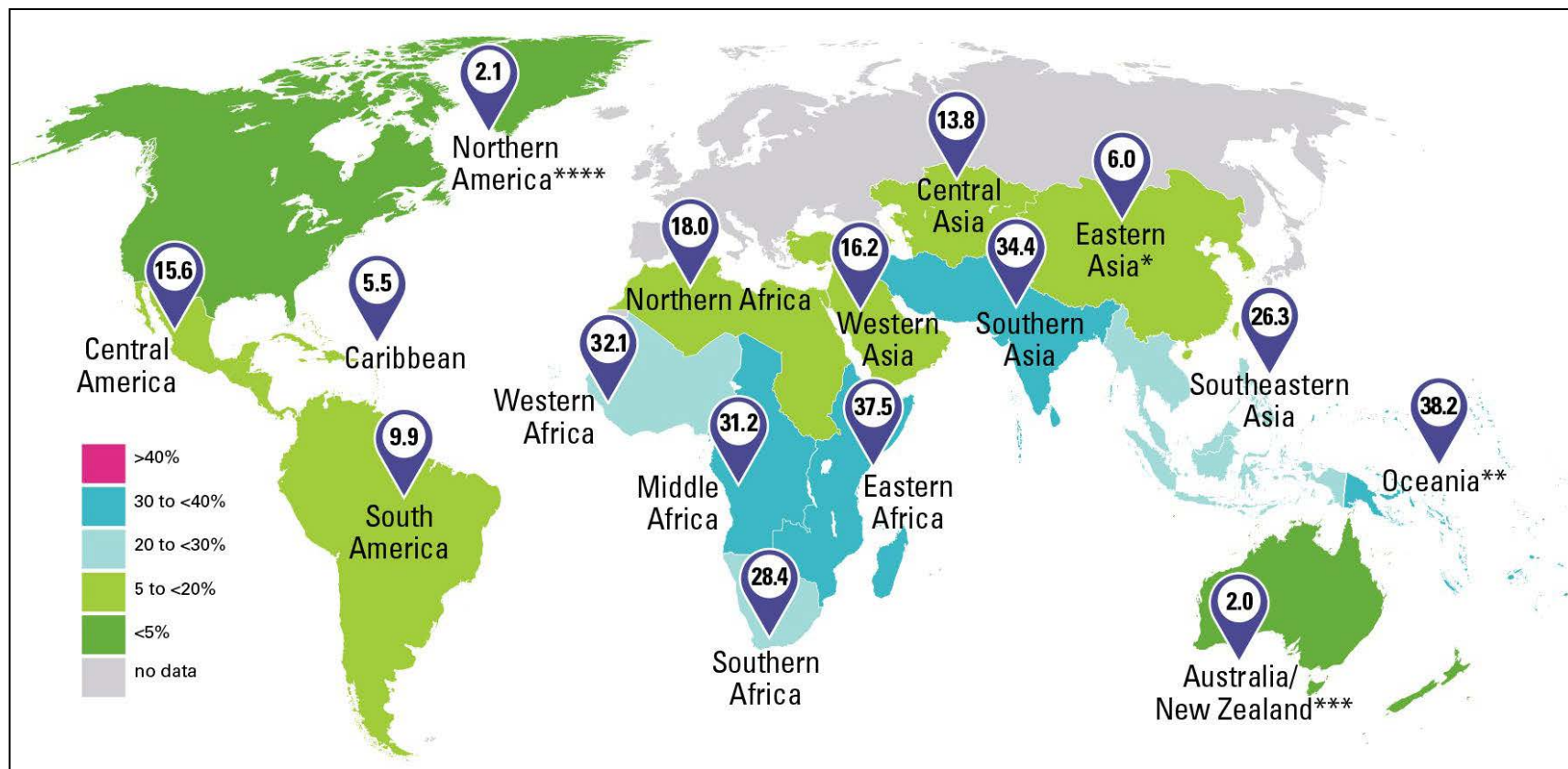
The causal pathways leading to undernutrition

(based on UNICEF, 1990)

# RESILIENCE AND FOOD AND NUTRITION SECURITY

- Recurrent food and nutrition crises in Sahel (2005, 2010, 2012) => the Global Alliance for Resilience in Sahel and West Africa (AGIR), 2012
    - Initiative from the EU, ECOWAS and WAEMU
    - Resilience: “The capacity of vulnerable households, families, communities and system to face uncertainty and the risk of shocks, to withstand and respond effectively to shocks, as well as to recover and adapt in a sustainable manner”.
- ⇒ Address the structural causes of crises
- ⇒ Link humanitarian assistance and development actions
- ⇒ Mobilize the international community: many initiatives, incl. call for proposals from the European Delegation in Burkina Faso → REPAM project (2014-2017)

# Stunting among children under age 5 years. Prevalence 2015.

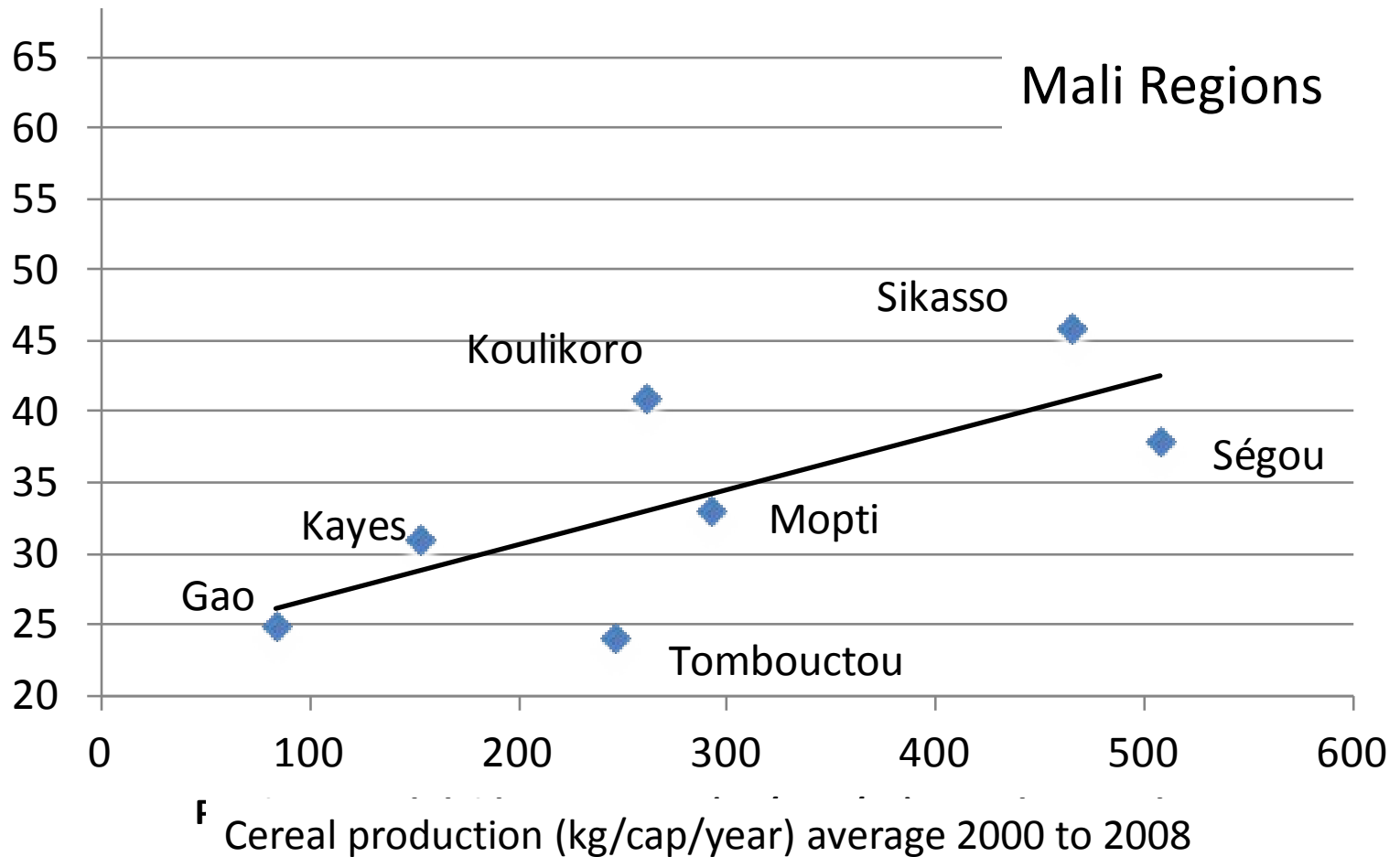


UNICEF, 2016



# The Sikasso Paradox

Prevalence of stunting in %  
(2006)



# Specific objectives

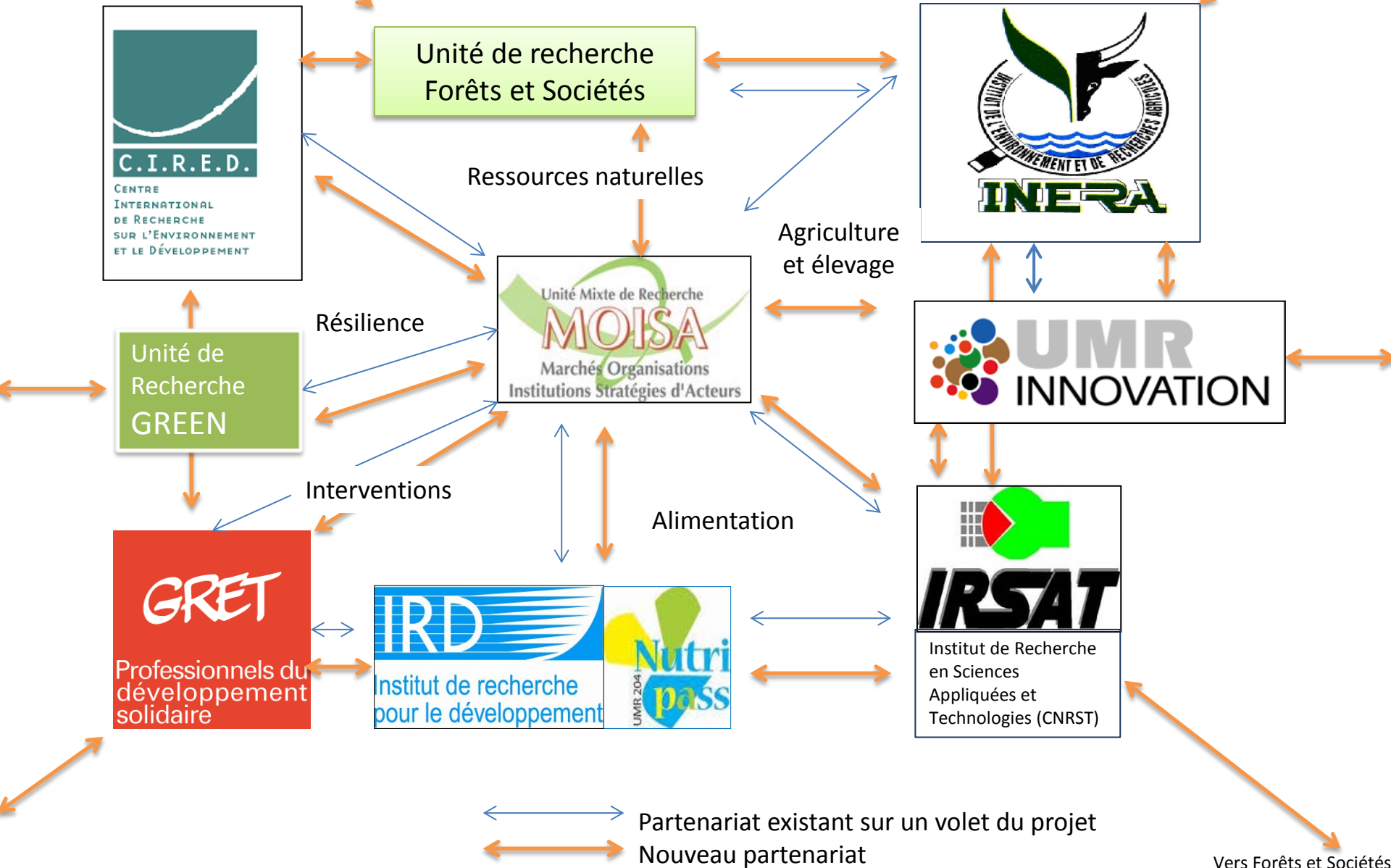
- To assess the relationships and interactions between production diversity, natural resources, market diversity and food diversity in the short and longer term.
- To develop different conceptual tools to model these interactions and this « food system » at the intra-household, family farm and village levels.
- From a case study, to identify opportunities and bottlenecks for households and individuals to maintain an adequate level of diversity, both year round and over the long term. And finally,
- To propose “nutrition-sensitive” interventions to better harness those opportunities and address the bottlenecks

# How ? The team

- Scientists and practitioners
- North and South
- Several disciplines
  - Nutrition
  - Farming systems
  - Social sciences
    - Household economics
    - Geography
    - Sociology
    - Political sciences
  - Modelling
- Challenges : sharing frameworks, fieldwork

Vers IRSAT

# Consortium- Relax



# How ? Viewpoints

- People
  - Eaters, cooks, farmers/producers, gatherers
  - Men, women, children
- Places
  - Kitchen, farm, nature, marketplace

Resilience : Long term and systemic (articulation of farm , household, family, territories scales and approaches)

# How - Mixed methods

- Combination of quantitative and qualitative data collection and analysis + modelling
- Case study : one region of Burkina Faso
- Secondary data : REPAM impact study : baseline and endline surveys (2014-2017, N= 1000 women/farms)
- First-hand data :
  - Quantitative: production and flows of agricultural and livestock products, money and food,, self- consumption, storage, resources from gardens and nature
  - Qualitative :
    - Household level perception of ood diversity,
    - Policy and intervention level : political analysis of public policies in the last 10 years in Burkina.
- Intra-annual focus : repeated rounds of interview to capture seasonality
- Trajectories : to capture resilience

WP1: Coordination  
+ knowledge  
sharing

Resilience of agriculture and food systems

WP2: Interventions

WP3: Diet  
diversity in the  
kitchen

WP4: on-farm food  
diversity

WP5: out of farm food  
diversity :Market and  
nature

WP6: Decisions in the Farm Household

# INERA Participation au WP1- 'working together' et WP4 'in the farm'

- WP1 : revue de littérature, participation à cadre conceptuel, construction d'hypothèses. → Jalon : réunion à Montpellier la semaine du 12-16 juin 2017. Inéra = responsable de la diffusion des résultats dans les villages en 2019.
- WP4 : organisation avec Cirad-Innovation /participation aux enquêtes auprès des producteurs (3 villages à choisir, 30 producteurs par village). Octobre 2017-octobre 2018.



# Les questions du WP4 :

- Dans quelle mesure et dans quelles conditions une production plus diversifiée peut se traduire en une alimentation plus variée ?
- Est-ce que les objectifs nutritionnels et en particulier les objectifs de diversité alimentaire sont incorporés dans les processus de décision et les stratégies des agriculteurs et agricultrices ?
- Comment est envisagée et mesurée la diversité agricole et ou alimentaire par les agronomes, par les agriculteurs et par les agricultrices ?
- → Biblio et enquêtes exploratoires d'ici mai 2017?

# Year one: State of the art, « cross pollinisation »

Each discipline / partner conducts a reflexive analysis of its conceptual frameworks to identify and share with others its core scientific issues and methods, as well as its own frontiers

Focus on **diversity** (in diet, farming system, and nature) : how it is accounted for, defined, and measured

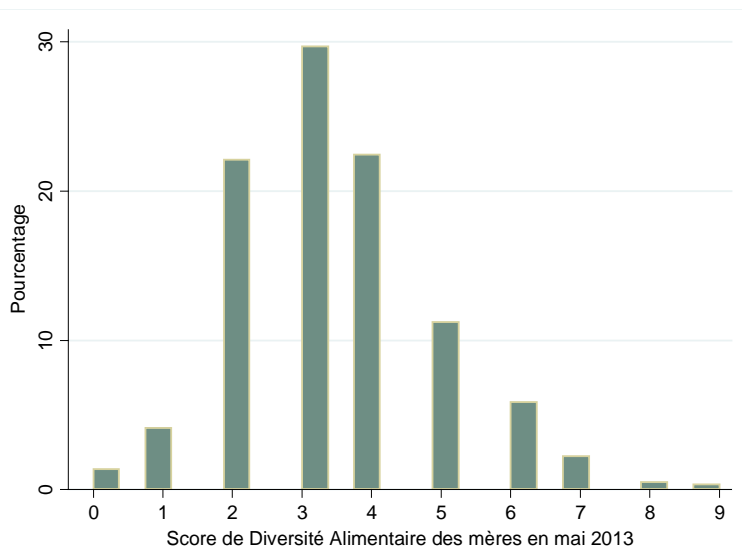
# Quelques résultats de la thèse d'Alissia Lourme Ruiz sur le même sujet

- Quelles variables sont associées au score de Diversité Alimentaire des femmes, mères de jeunes enfants ?
- 3 passages 2013-2014. Enquête sur un échantillon représentatif d'exploitations agricoles des Hauts Bassins.

# Le Score de Diversité Alimentaire

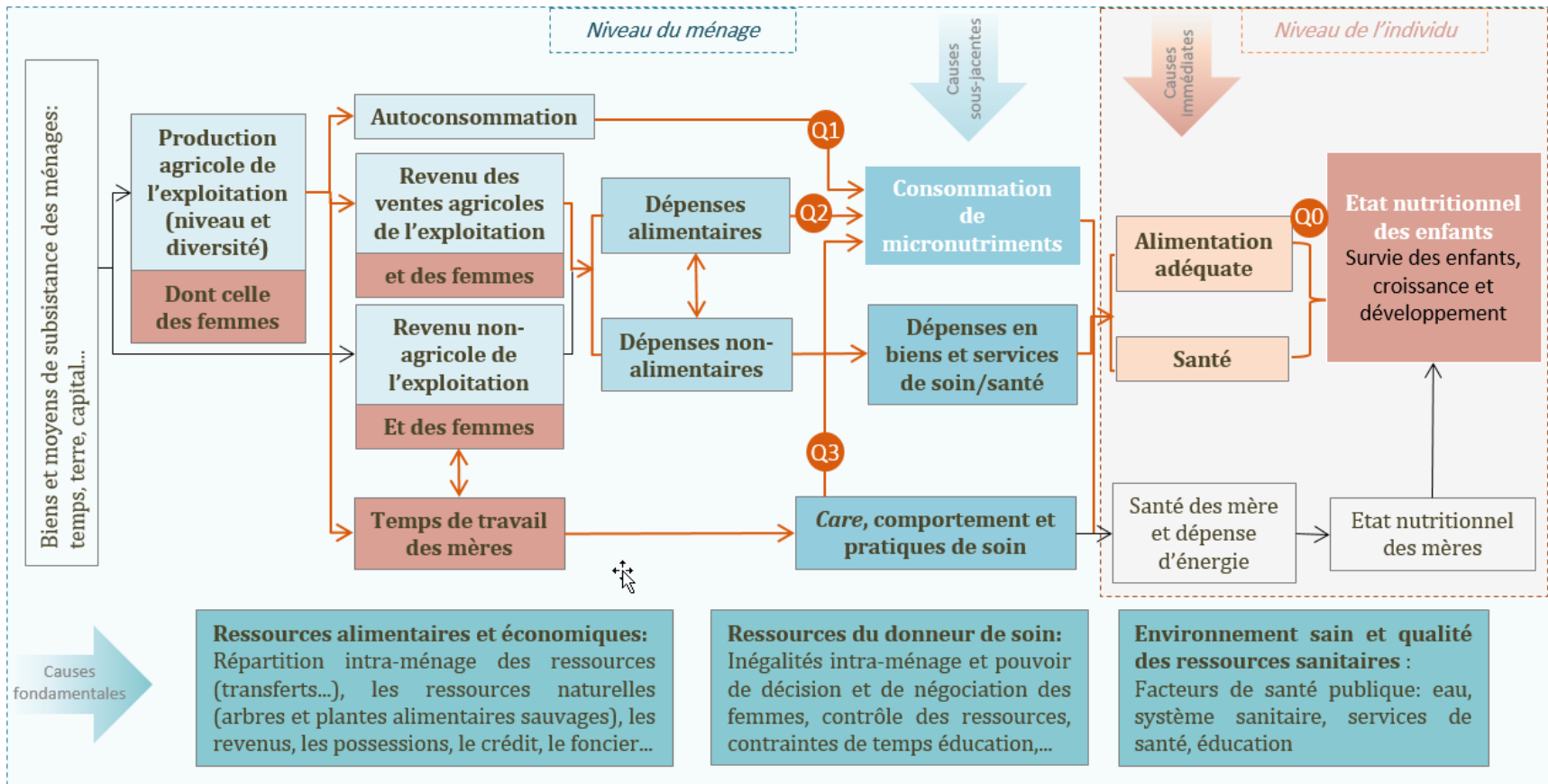
Groupes alimentaires	Dans l'ouest du Burkina :
1. Les aliments à base d'amidon	Maïs, sorgho, mil, racine de manioc, ...
2. Les pois et haricots	Pois de terre (voandzou), niébé...
3. Les noix et graines	Arachide, sésame...
4. Les produits laitiers	Lait, yaourt...
5. Les aliments à chair	Toutes les viandes, abats et poissons
6. Les œufs	Œufs
7. Les légumes feuilles riches en vitamine A	Les feuilles vert foncé : de baobab, d'oseille de Guinée, de haricot, les épinards
8. Les autres fruits et légumes riches en vitamines A	Mangue, Patate douce à chair orange, papaye...
9. Les autres légumes	Tomate, oignon, chou...
10. Les autres fruits	Banane, pastèque, ananas...

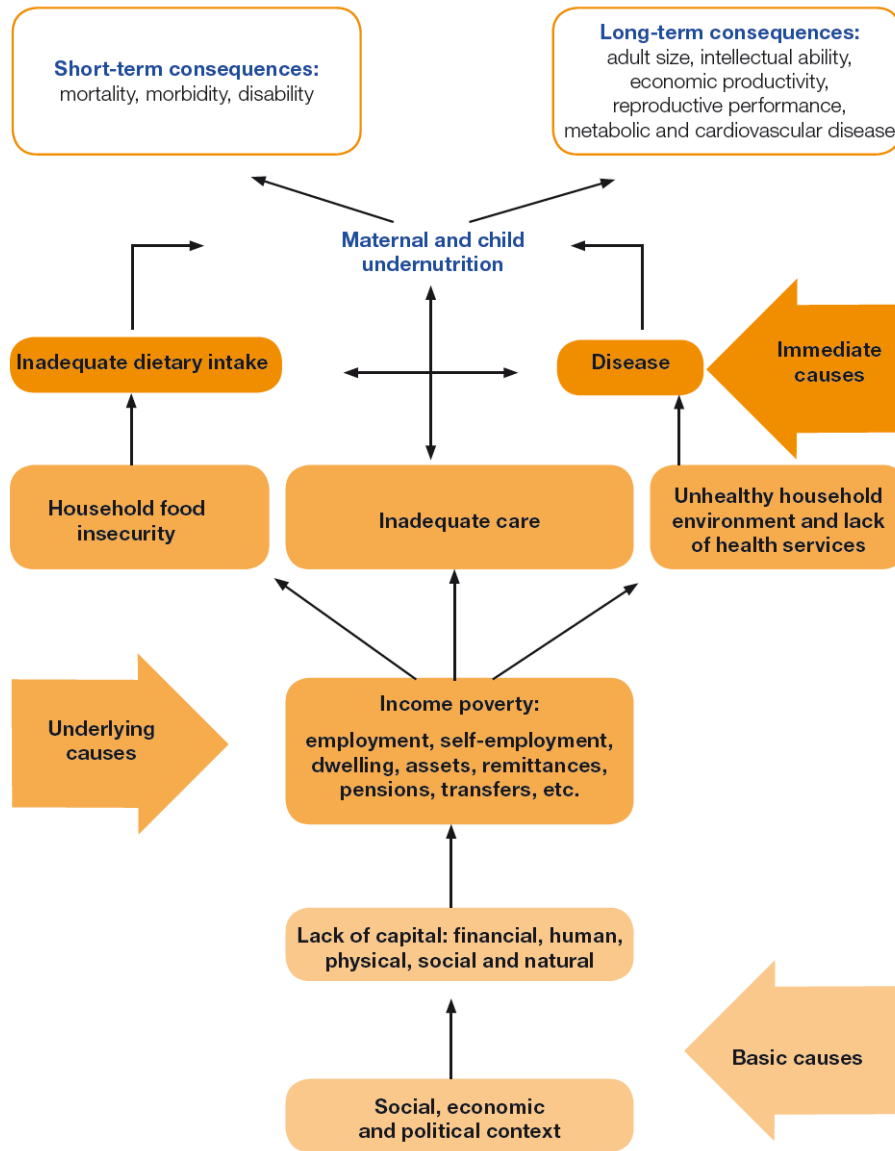
	Mai 2013	Août 2013	Janvier 2014
Taille de l'échantillon	579	402	421
Diversité alimentaire (dernières 24h)			
Score de diversité alimentaire moyen des mères	3,4(1,5)	3,4 (1,3)	3,4 (1,3)
Part des mères ayant consommé plus de 5 groupes alim.	20%	20%	19%



# Les variables les plus significatives sont:

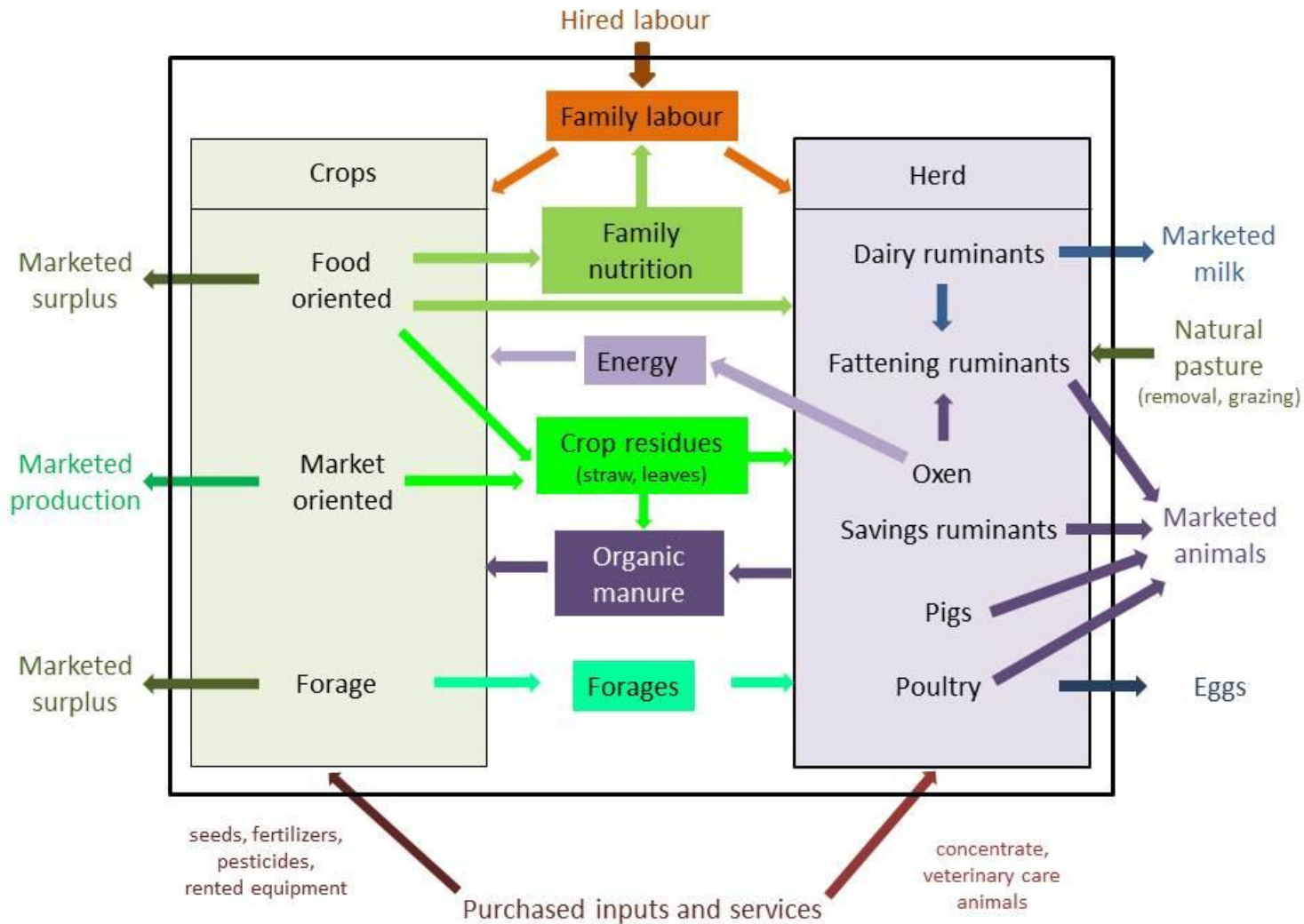
- La diversité de la production ssi mesurée comme la diversité de la consommation alimentaire et seulement après la récolte
- La présence d'arbres sur les parcelles agricoles
- Les revenus des femmes issus soit de transferts à l'intérieur du ménage (chef donne à la femme) soit d'AGR.





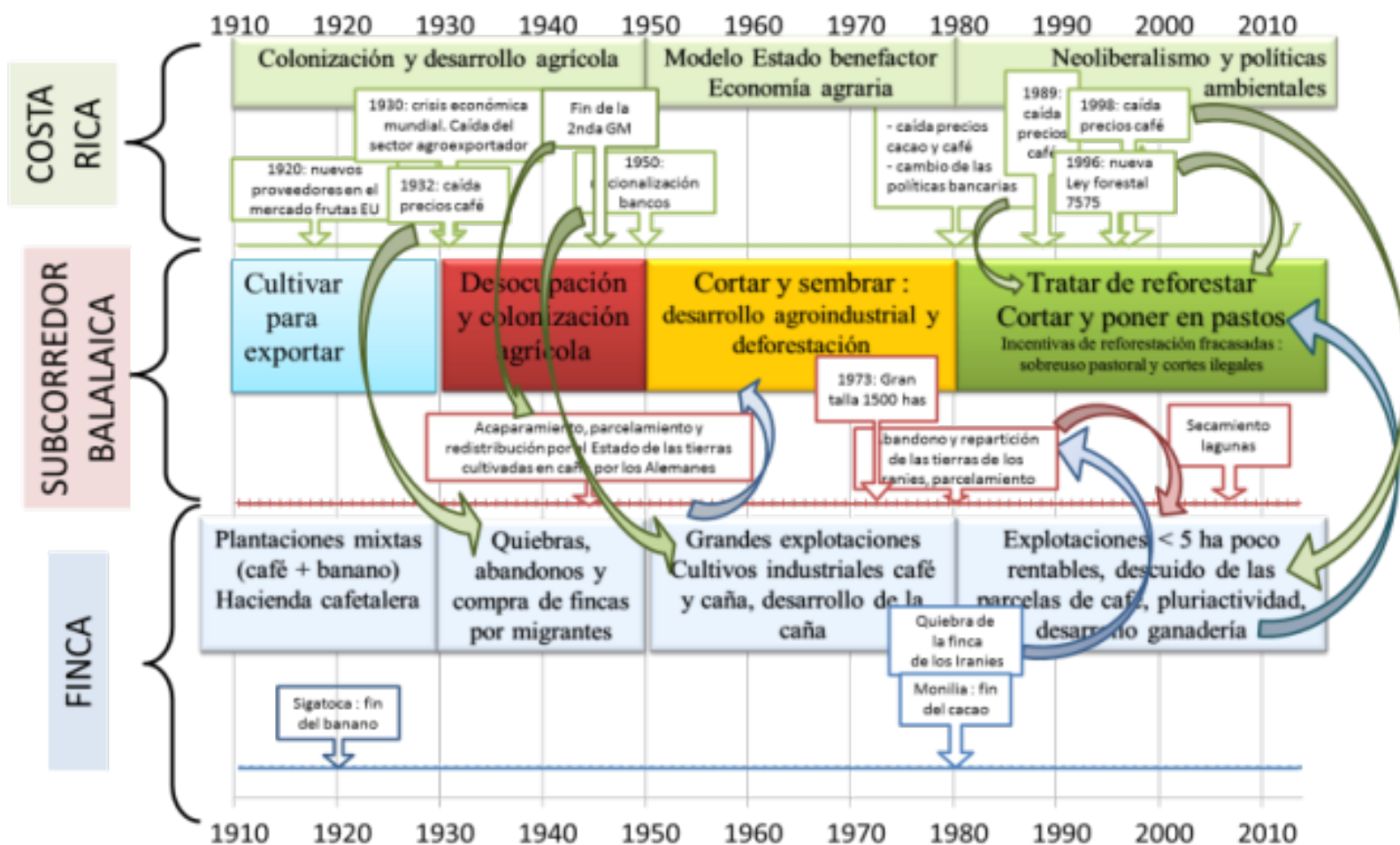
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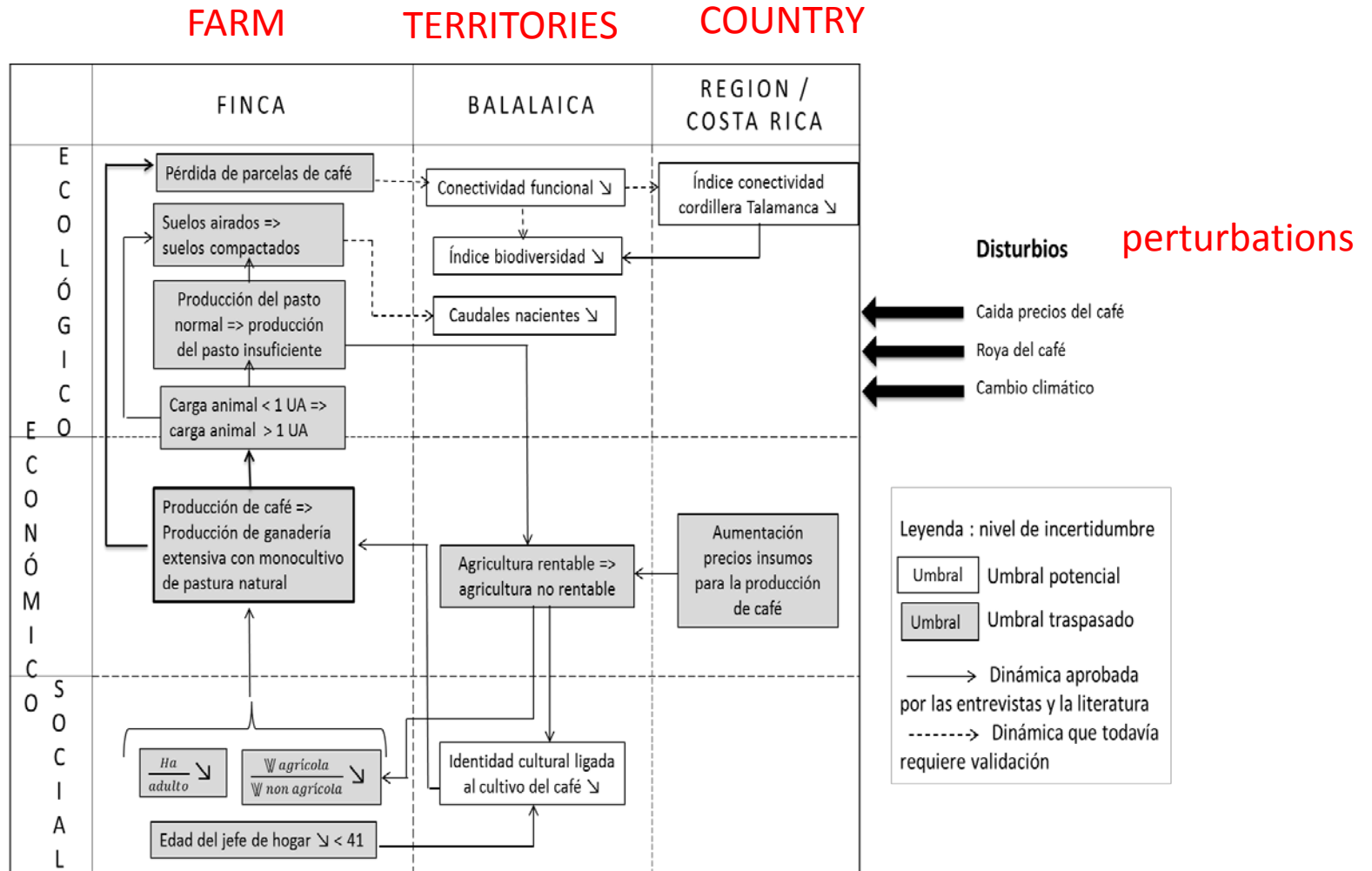
**The farm system (Source : PY Le Gal)**

# Resilience: Historical profile



A. Fallot, case study Costa Rica.

# Resilience approach: multilevel analysis



A. Fallot, case study Costa Rica.

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# Year one: qualitative fieldwork

Qualitative fieldwork is conducted to lay the ground for the integrative survey scheduled in year 2 :

- interventions
- diet diversity in perception and practice

# Year two: integrative survey

Several quantitative and qualitative data collection rounds over one year to assess intra-annual consumption diversity and the contributions from

- Own-production: gardens and fields - storage
- Nature, including trees
- Purchases in food markets



# Year three: analysis and dissemination of results

Focus on intervention : Identifying bottlenecks  
and opportunities according to the contexts.

## Feedback

- to producers-households
- To policy makers
- To the scientific community

# Expected outputs

- better conceptual and practical understanding of the agriculture-nature-food nexus and its contribution to diet diversity and resilience
- Improved dialogue across disciplines (farming systems, environment, nutrition, household economics) between researchers and practitioners
- Better informed nutrition-sensitive policy through feedback and workshops at the village, regional and national level.



# Food and dietary diversity



# Farming diversity: Mucuna



# Cotton Field + Boabab



# Mix cropping: maize + fodder crop



# Gardens fruits + green leaves



# Processed food: Soumbala (Néré, *Parkia Biglobosa*)



# Nere (*Parkia biglobosa*) tree in a field



# Caterpillar from the Karité tree (Shea tree = *Vitellaria paradoxa*)





# Markets



# Intra-annual management



# Granary: millet (*Pennisetum sp.*)



# Thank you for your attention



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