



Building productive capacity over time

Cirad long term projects in partnership



Collective work of Cirad Impact Unit

Sophia Alami, Danielle Barret,

Estelle Biénabe : DGD-RS

Ludovic Temple: UMR Innovation

Cirad Task team objectives

- An institutional perspective:
 - To reflect on Cirad practices of research in partnership
 - To develop a framework for using impact assessment as a tool for Cirad strategic orientations
- An exploratory approach:
 - To examine a diversity of Cirad research contributions
- A methodological aim and position:
 - To develop an impact assessment approach adapted to research for development
 - To settle a long term and systemic view of innovation processes
 - A shared diagnosis for the shortcomings of conventional impact assessment methods

Empirical evidences

- 4 case studies based on geographical coverage and innovation basis:
 - **Western Africa** : mango germplasm bank
 - **Nicaragua** : coffee hybrids
 - **Morocco (and Méditerranée)**: vaccine against small ruminant pest ('PPR')
 - **Burkina Faso** : advisory services to family farms (ASFF)
- Master theses in agronomy and social sciences
 - Survey analyses supervised by Cirad teams
 - involving researchers engaged in the innovation processes under study

Conceptual framework

- Theoretically based on institutional economics
 - An innovation system (IS) framework
- Methodological tools:
 - Impact pathway and systemic analysis of the IS role players
 - Transversal frame for the case studies based on 4 dimensions: Long term analysis / capacity building / increasing returns / partnership and institutional building

Analysing the building of productive capacity over the long run

Focusing on the long-term dimension, 4 pillars have been identified:

1. The building of social capital
2. Capacity building and human capital
3. Socio-technical assets and 'devices'
4. An integrative research approach in an intermediation position:
 - Across disciplines
 - In value chains
 - At different geographical levels

1. Contribution of research to the building of **social capital**

- Building and institutionnalizing networks of research and development based on partnerships
 - Embedded into a shared social issue (health, farming support, etc.)
 - Organised mainly based on public resources or on private resources:
 - Research, public policies, experimental stations
 - Nurseries, laboratories
- Network + shared norms and values with trust as a major feature of partnership relations
- Supporting and strengthening of agricultural organisations at regional level
 - Standard setting, etc.

1. Contribution of research to the building of **social capital: the PPR case**

- Partnership relations developed over more than two decades:
 - Development of methods (for monitoring, control, training) and instruments (diagnostic kits, vaccines)
- Building of a national epidemio-surveillance network
- Social network instrumental in the management of the 2008 sanitary crisis
- Cirad as a reference laboratory of OIE-World Organisation for Animal Health = scientific legitimacy and international recognition:
 - Engaged in standard compliance with regard to diagnosis, vaccine quality, etc. and in the adaptation of standards
 - Set up of quality procedures in local pharmaceutical industry (Biopharma) and certification for vaccine export

2. Contribution of research to the development of human capital

- Human capital building at the core of Cirad activities in partnership:
 - Individual, collective trainings
 - Learning processes associated with research activities at different levels (individual, organisational)
- Strengthening of organisational skills of different role players part of the innovation systems
 - Producer organisations, extension officers, etc.

2. Contribution of research to **human capital** development: the ASFF case

- **Direct impacts:** Capacity building of producers:
 - Improved connections between technical and economic dimensions at farm level:
 - diagnosis, management plans, innovation capacities, etc.
- **Indirect Impacts:** Capacity building of collective and organisation skills:
 - of producer organisations (PO) and federations of PO
 - management, planning, communication, diagnostic of producer issues
- Strengthened links between producers, PO and other role players of the innovation system
 - Public administration, research, industries, trade actors, etc.

3- Contribution of research to **socio-technical assets and 'devices'**

- Technical assets and associated data production and management:
 - Germplasm and vaccine banks, viral strain characterisation, experimental stations and piloted trials, epidemio-surveillance networks, etc.
 - Organisational and institutional assets:
 - Frames of reference:
 - For quality standards and procedures
 - For participatory advisory services and research in partnerships
- = public goods produced through long term research in partnerships that underlie innovation processes

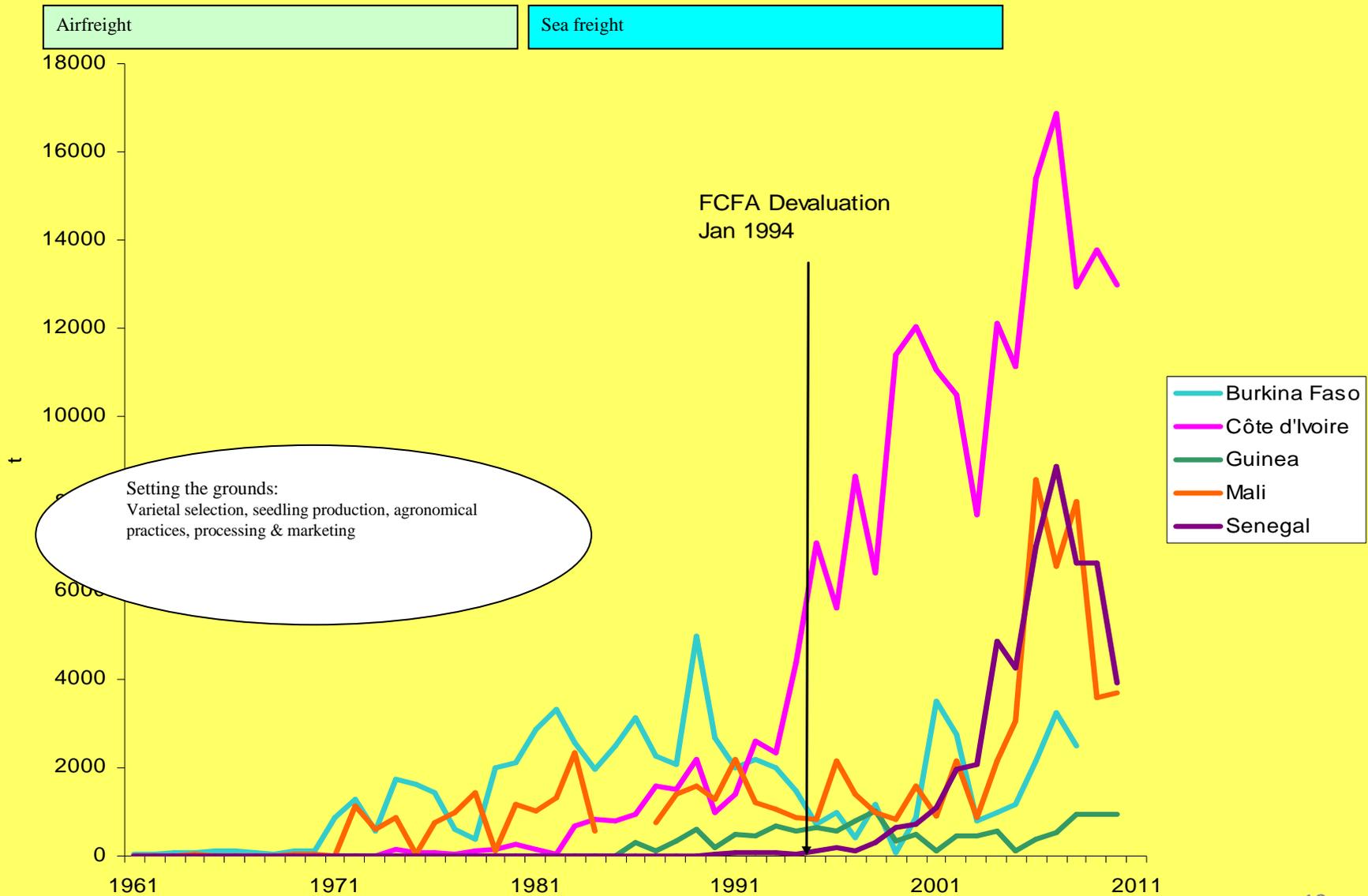
4. An integrative research approach with an intermediation role

- Production of knowledge and methods that foster interactions between different actors inside innovation systems:
 - Filling critical knowledge and methodological gaps
 - Evolving position in the innovation system : beyond the conventional segmentation in IS and specialised research functions
- Intermediation position with regard to different boundaries:
 - Across disciplines
 - In value chains: production/ processing/ markets
 - At different levels: from local, regional to international levels

4-1 Across disciplines: the case of 'ASFF' = Advisory services to family farms

- Management and economic sciences associated with agronomy
- Hybridisation of farming know-how and non codified knowledge with formal technical and economic knowledge
- Co-production of a strategic frame of reference
 - 12 principles of the ASFF

4-2 In value chains: the case of mango: evolution from 1961 to 2011



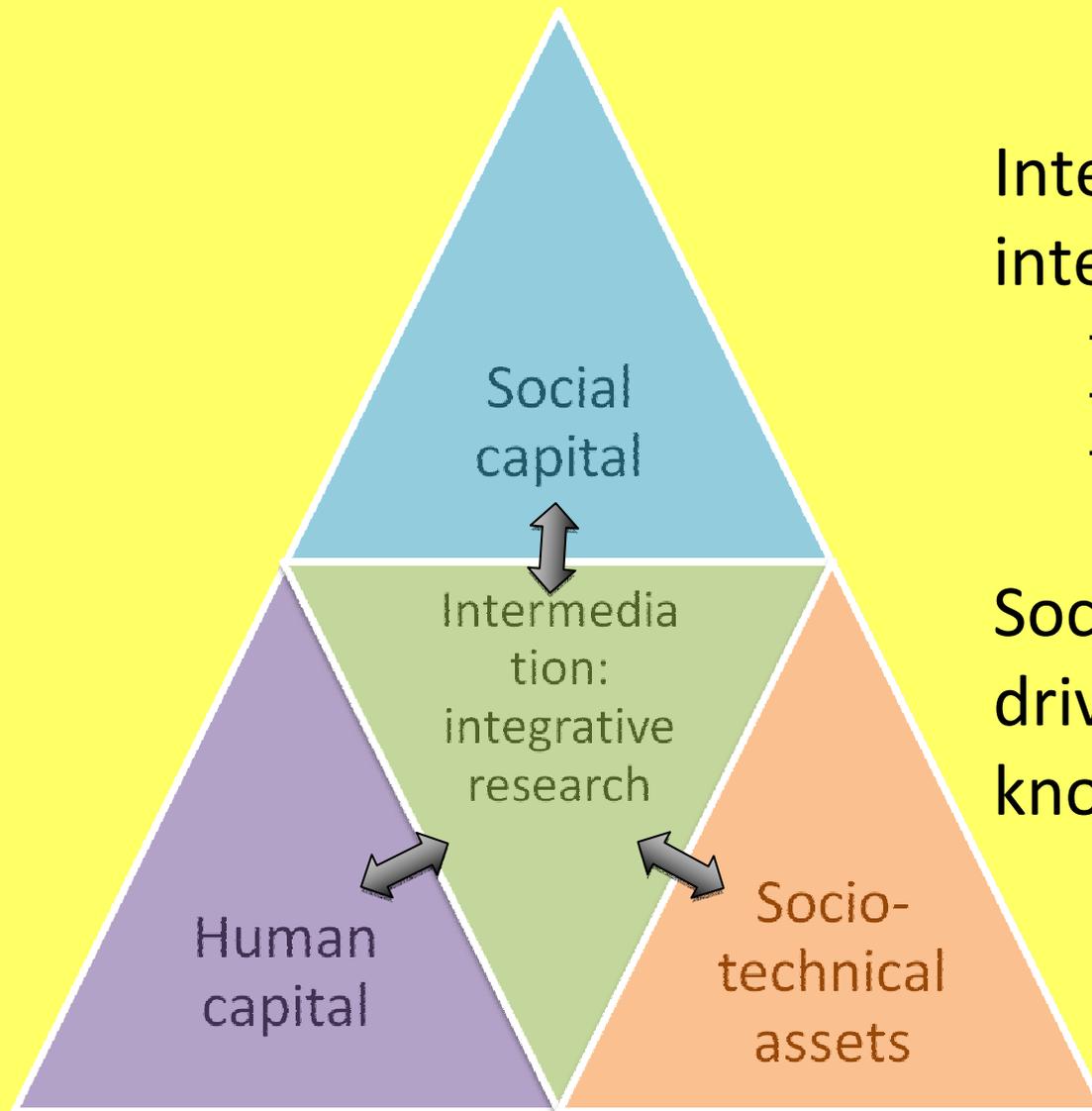
4-2 In value chains : the mango case

- Problem driven research:
 - local diagnosis and embeddedness in the IS (national public research institutions, supporting public policies and chain actors)
- from agronomic based research (germplasm banks, variety adaptation, improved grafting technics, etc.) to market driven innovation (export orientation)
- Sustained innovation processes underlying chain development
- ← Integrative research in a key intermediation position between production and market issues:
 - Production timing, post harvest handling, standard compliance, sensory quality, market intelligence, producer constraints, etc.
- ← Evolving and varied positions in the IS:
 - Core functions: knowledge production and dissemination
 - training and training of trainers + regional network of experimental stations
 - But also ‘temporarily’ actor in the chain (trader, nursery, etc.)

4-3 At different levels: the case of PPR

- Interlocked issues between local, national, regional and worldwide scales:
 - Contamination and livestock migration, cross-border trade, international standards...
- Network building with a regional scope of intervention (REMESA: Mediterranean network):
 - Grounded in national and sub national research activities to account for local specificities
 - And support to local intervention capacity (sero-monitoring, local diagnosis capacity, training etc.)
 - While designing strategies aggregating actions at regional or worldwide level (monitoring, prevention and control)

An integrated view of the 4 pillars

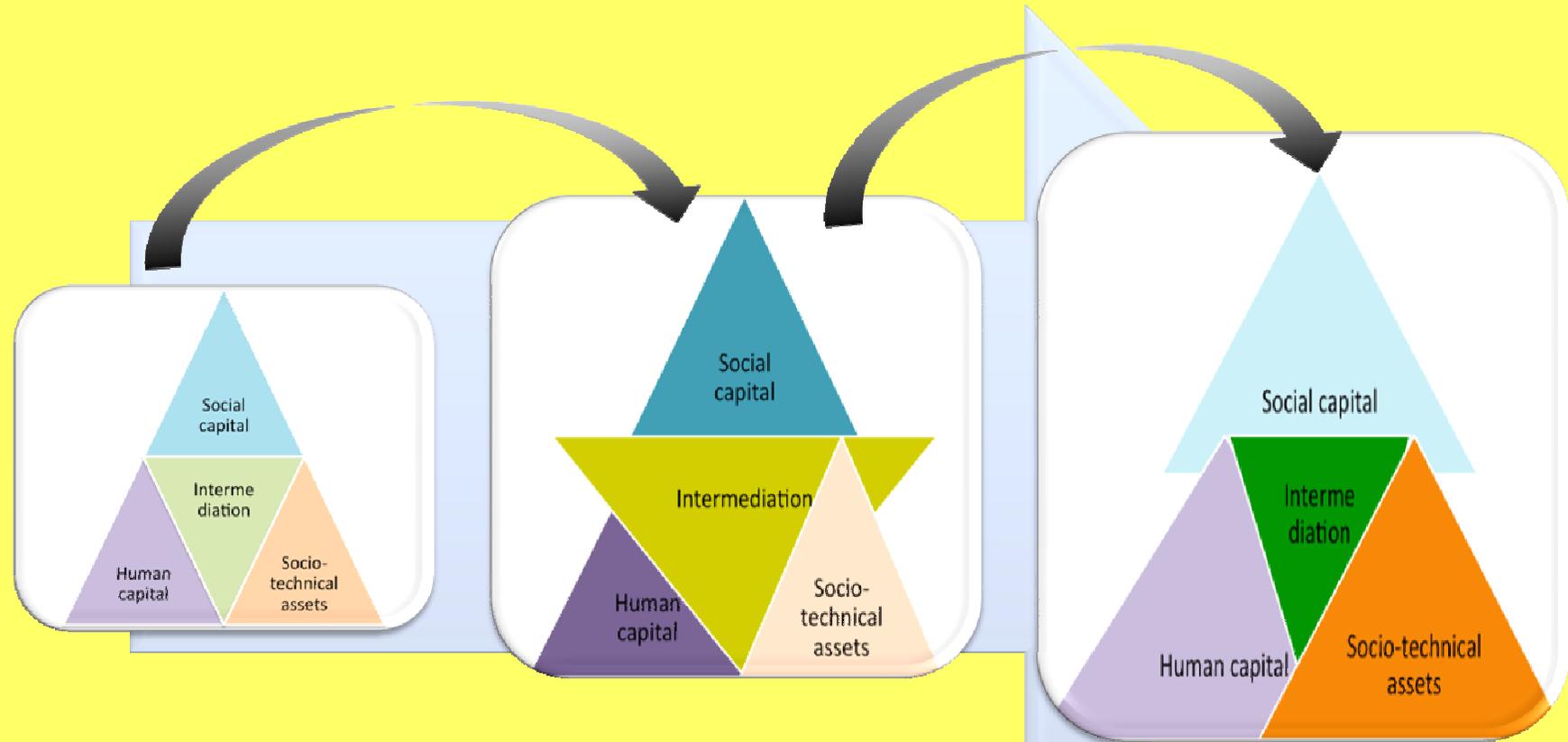


Integrative research and
intermediation roles in IS:

- Across disciplines
- In value chains
- At different geographical levels

Social utility as a strong
driver: diagnosis and
knowledge gap

Dynamic processes: different research and innovation phases



Reinforcing and connected processes that contribute to building productive capacity over time