Building productive capacity over time

Cirad long term projects in partnership

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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 epidemiology-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 pilote trials, epidemi-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

Setting the grounds:
Varietal selection, seedling production, agronomical practices, processing & marketing

FCFA Devaluation
Jan 1994

Airfreight
Sea freight

Burkina Faso
Côte d'Ivoire
Guinea
Mali
Senegal
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: Mediterannean 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