DISEÑO Y EVALUACIÓN DE POLÍTICAS DE INNOVACIÓN: EVALUACIÓN DE IMPACTOS DE PROGRAMAS DE CIENCIA, TECNOLOGÍA E INNOVACIÓN

30 de marzo a 3 de abril de 2009
Montevideo – Uruguay

EXPERIENCIA DE: **URUGUAY**

CSIC, INIA, PDT-DICYT, Plan Ceibal-LATU, CEGETEC-CIU

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Examples of evaluations carried out at:

- CSIC - UR
- INIA
- PDT-DICYT
- Plan Ceibal - LATU

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CSIC - Comisión Sectorial de Investigación Científica

- Belongs to the Universidad de la Republica: only public university, accounts for more than 75% of research activities in Uruguay

- Is a research council created in 1990 to support and stimulate the "ecology of knowledge" (all cognitive areas)

- Holds a portfolio of programs aimed at different goals and target groups (research projects/human resources)
  - Classic: R&D; Linkages with the productive sector; Support to human resources
  - Oriented toward social inclusion; productive demands; others

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Evaluation mechanisms

- Ongoing program evaluation & monitoring
  - Fit between goals and procedures
- Ex post evaluation
  - Ex post exercise – 2006
- Survey to full-time researchers as input for National Strategic Plan in Science, Technology and Innovation (PENCTI)
- Study/assessment of indicators (national surveys)

Policy learning and design:

'In house' oriented

National oriented

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Evaluation mechanisms

- Ongoing evaluation
  - Objective: to assess the fulfillment of goals
    - keep the cognitive diversity alive
    - support academic research and researchers
- Ex post evaluation
  - Objective: results (quali and quanti) vis a vis goals
  - Mix of tools and techniques
    - career trajectories, milestones

Agenda

- Creating an information system
- Harmonize existing data (more than 18,000 records)
- Institutionalize a monitoring and evaluation unit

For more details, see www.csic.edu.uy

INIA – Instituto Nacional de Investigación Agropecuaria

"Impact Assessment of Agricultural Research: Methodologies and Results"

Conceptual Framework

Results Levels

- Outputs
- Effects
- Impact

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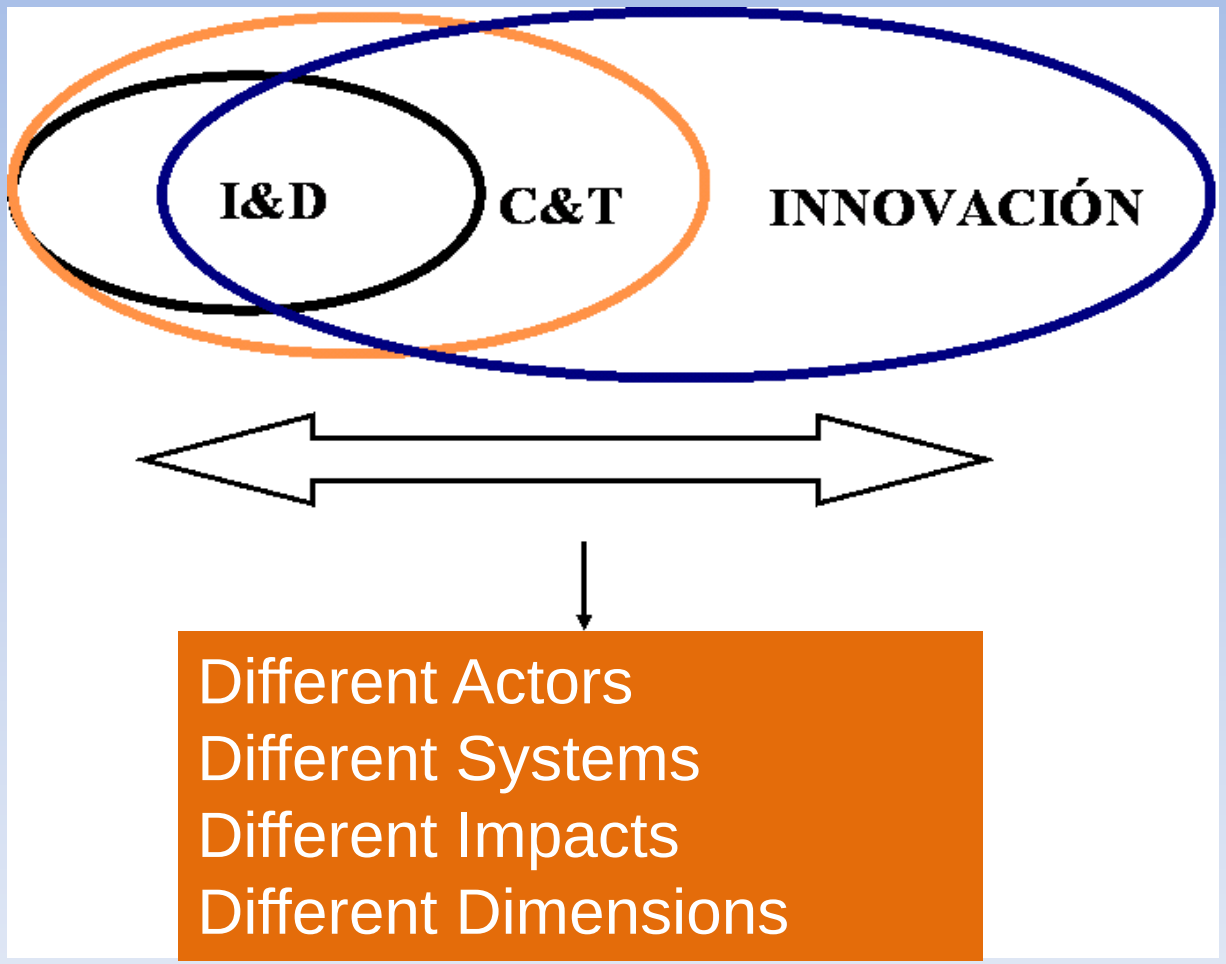
Multidimensional approach



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Assessment dimensions

- **Economic** (excess profit method)
- **Social**
- **Environmental**

- Interviews and surveys
- Information about investment in research
- Analysis of cost-benefit ratio

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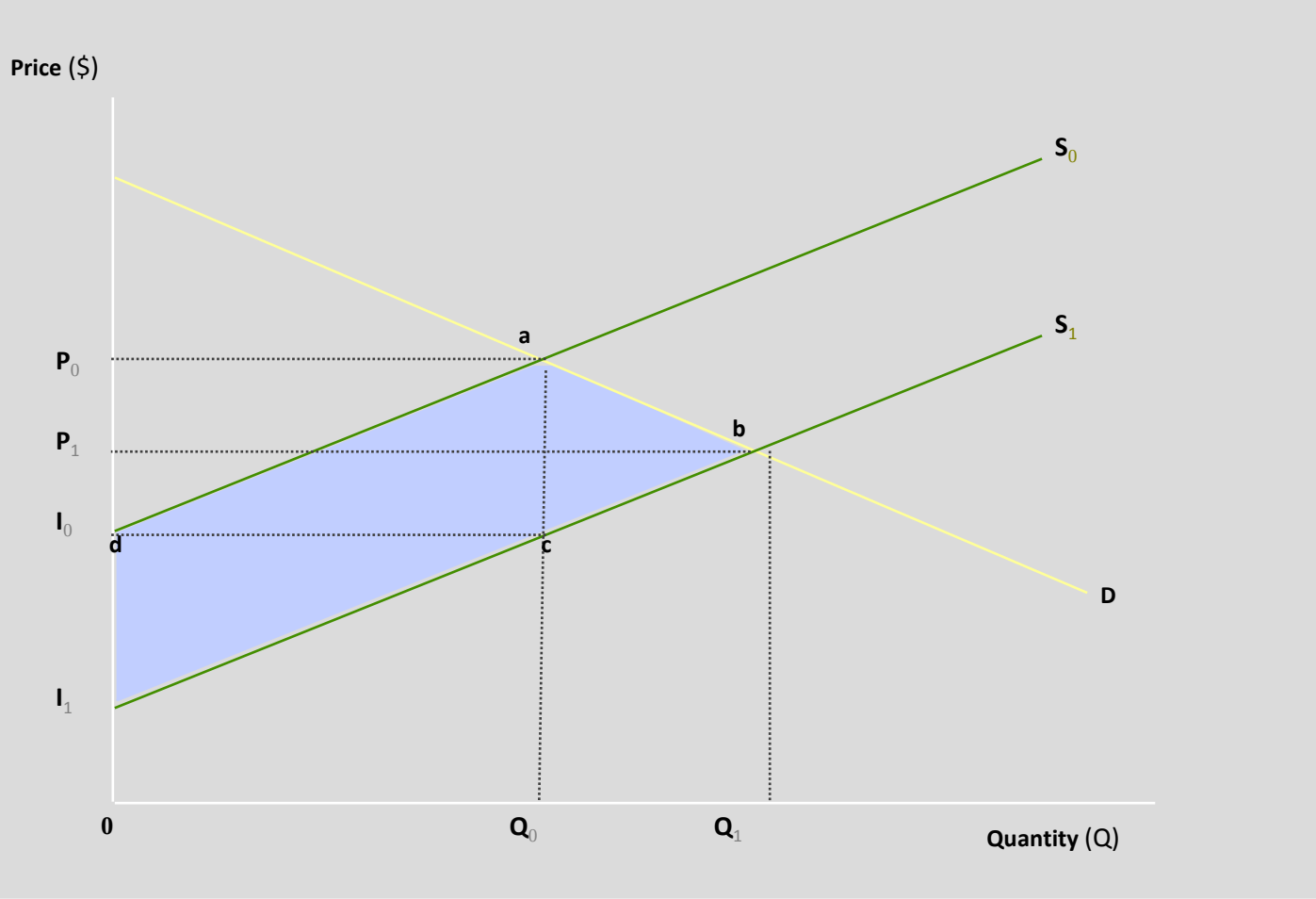
Economic Assessment: excess profit method



Source: Avila 2006

Enviromental Assesment

- **AMBITEC** Methodology-
- **Technologycal Efficiency**
- **Conservation**)
- **Enviromental restoring**

Social Assesment

- **Labour**
- **Health and nutrition**
- **Income**

Impact Assessment of Agricultural and Lifestock Service Program 2007

Economic Impact

IRR = 50.1 %

Sensibility 37.2% - 67.3%

B/C = 4,6

NPV = 41.2 M U$S (parcial)

Source: Dias Avila, 2007.

Economic Impact Assessment of Dairy and Rice Programs (Nozar, Picerno 2007)

- Period of assessment 1990 – 2005
- Economic excess profit method
- Identify the specific tecnologies used by farmers
- Statistics , 180 surveys from dairy farmers and 79 rice farmers, qualified informant

Economic Impact of Dairy and Rice Research (Nozar, 2007)

- **DAIRY**
- **IRR: 106%,**
- **NPV: US$ 31M**

- **IRR: Rice 120%** **B/C 7:1**
- **NPV: Rice US$ 51M**

Why to do Impact Assesment ??

- “Accountability”
- Show the profit of (all dimensions) of investment in agricultural research
- Institutional “image and background”
- Negociate with donours
- Negociate with politicians
- Get support from *stakeholders*

PDT – Programa de Desarrollo Tecnológico

Sub-program1

- End: improving the competitiveness of beneficiary firms of PDT (preferably small and medium)
- Purpose: (new) products and services development in beneficiary firms, with market potential
- Components:
  - Projects oriented to innovation and management/quality systems
  - Associative projects for joined solution of common technological problems or for implementing management/quality systems
  - Projects for strengthening transfer of technology and/or management units

PDT – Programa de Desarrollo Tecnológico

Evaluation of Sub-program1

- **Methodology**
  - Annual surveys of firms with projects ending in december of the corresponding year
- **Survey structure**
  - Employment, commercial situation, R&D&I expenditures, linkages with NIS agents
  - Projects impacts:
    - Results: number of products, processes, patents, direct and indirect incomes, new markets
    - Investment: induced by the project, for productive scaling

Plan Ceibal - LATU

Plan CEIBAL

- Presidential initiative inspired in OLPC
- Managed by a consortium of innovation, technology and edducation related agencies
- General goal of "digital equity"
- Expected outcomes:
  - One laptop for every child and teacher of all public schools
  - Wireless conectivity in public schools
  - ICT training for teachers and ICT support for families
  - Generation of digital didactic resources.
- Multiple target population: children, teachers, families (the laptop goes home every day)

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Evaluation – General features

- **Methodology**: Combines cualitative and quantitative strategies
- **Multiple target population and Multiple units of analysis**: schools, teachers, children, families, communities, the country
- **Components:** diagnosis (profile of target populations, ICT access and use before the Plan), implemented processes and actions, outcomes and impacts
- **Outcomes and impacts:** takes into accout intended and not intended effects: educational, social, cultural and economic
- **Sources of data**: primary (survey, case studies) and secondary (INE, ANEP)
- **Carried out through institucional coordination**: LATU, ANEP, external researchers (mainly from University

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Methodology

- General: combines cualitative and quantitative strategies
  - **Phase 0.** Baseline
  - **Phase 1.** Fieldwork occurs simultaneously with implementation. Emphasis: Monitoring, Description, Identification of obstacles and best practices, feedback to policy-makers, pilot study
  - **Phase 2.** Yearly repetition of survey. Outcomes and impacts.

Quantitative strategy

- Secondary data analysis, Primary data: Survey to families, children, teachers, principals (national level)

Qualitative strategy

- Case studies, In-depth interviews

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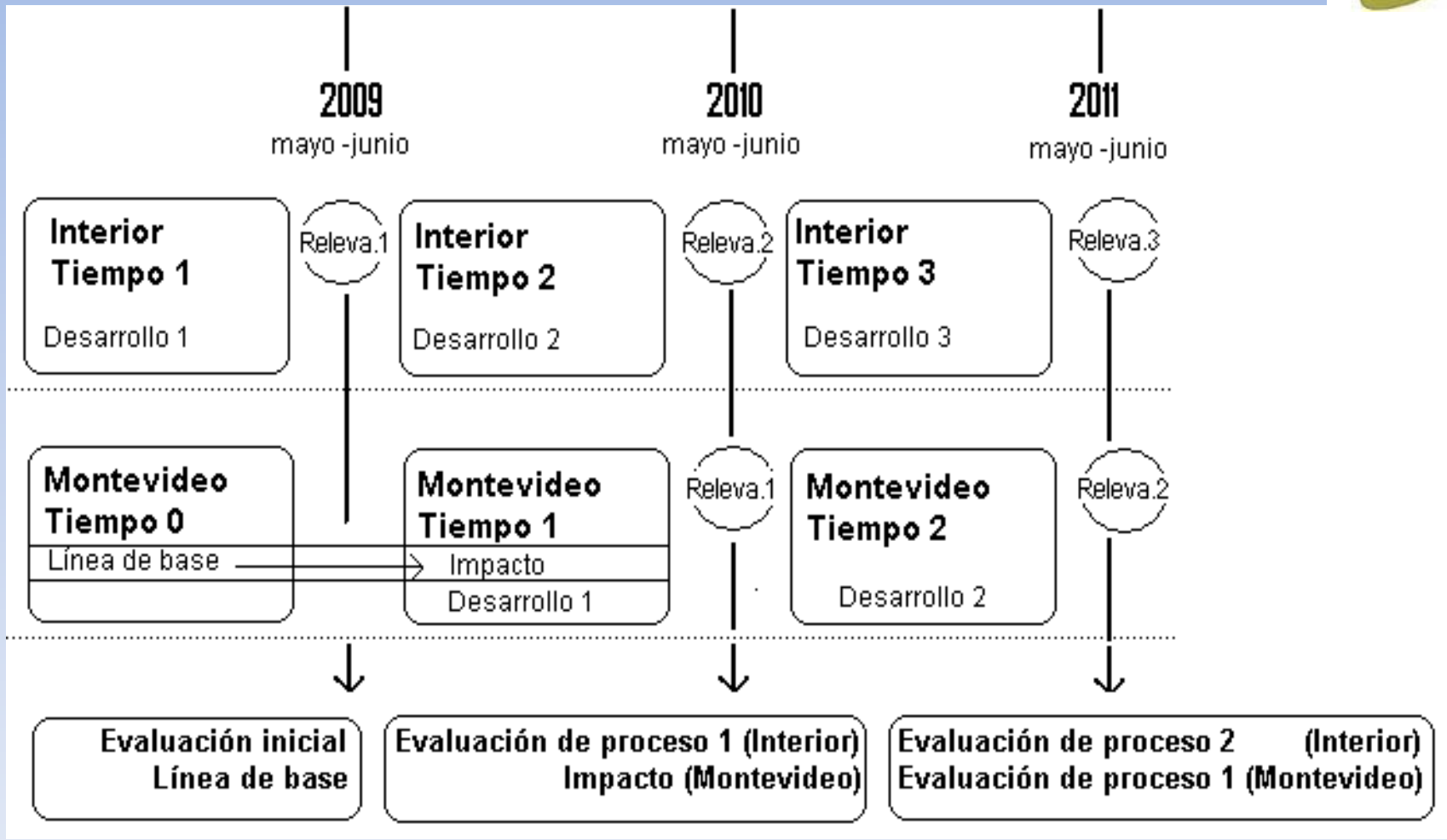
General design



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Potential and challenges

- Knowledge about the experience is highly valuable: description of outcomes by SES, school grade, rural/urban location. No similar experiences exist in the world as a reference
- Difficulty in attributing impact: lack of adequate control group, multiple variables and policies affecting the outcome at the same time, dependent variables difficult to grasp, more important effects will show in the long run
- Comparison of performance possible, however limited, by lack of clear with-without control group. The “without” group can be constructed by differences in time of exposition. Other alternatives being considered.

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Some shared conclusions

- There is much more information available than what is actually used for evaluation purpose …
- Since it is not systematized, it does not circulate across related organizations
- There is a lack of good indicators for policy purpose
- Shortage of resources assigned to evaluation
- Lack of coordination between institutions producing useful information for evaluation (loss of complementarities, externalities)

Need for networking on evaluation

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