



***Designing and implementing a new approach for the  
ex-post impact of research – A return of experience  
from the ASIRPA project***

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## Outline

1. **The ASIRPA approach: institutional frame, basic theoretical and methodological choices**
2. **The implementation of the ASIRPA approach: intermediary results and current developments**
3. **ASIRPA and the politics of impact assessment: some reflections on the experience**



# **1. The ASIRPA approach: institutional frame, basic theoretical and methodological choices**



agence d'évaluation de la recherche  
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### Section des établissements

## Rapport d'évaluation de l'INRA :

1<sup>ère</sup> partie (version française)

Rapport d'évaluation de l'Institut national  
de la recherche agronomique (INRA)

2<sup>ème</sup> partie (version anglaise)

Evaluation Report of the French National  
Institute for Agricultural Research (INRA)





## Objectives of the ASIRPA project

- Design a pilot approach for the assessment of research impact of a Public Research Organization
- This pilot approach, applied to INRA, has to meet two complementary objectives:
  - Better understanding of the mechanisms that generate impact (learning objective)
  - Assessment of the impact of INRA (accounting objective)
- This approach has to be validated by peer review evaluation

**Note that: Evaluation is taken as a periodic strategic practice feeding an open debate on future policy orientations**

**→ The approach requires to be repeated at regular intervals, and thus portable (a 'strong' issue for qualitative methods)**



## **On the basis of an extensive literature review, identification of two main limitations of RIA:**

- **RIA applies mainly to economic impact; other dimensions ('broader impacts') largely remain orphans**
- **Issue of attribution increasingly problematic since impact results of interactions in complex research ecosystems**



## The core methodological choice: an approach based on standardized case studies

- Interest of case studies:
  - Contextual and processual analysis can be designed to identify and analyze mechanisms that generate impact => figure out the specific contribution of INRA
  - Can be designed to assess RIA in various dimensions: economic, environmental, political, social, etc.
- Standardization allows to overcome some of the limitations of case studies
  - Possible to associate benefits of qualitative methodologies (thick description, story telling) and quantitative ones (common descriptors, possibility of transversal analyses)

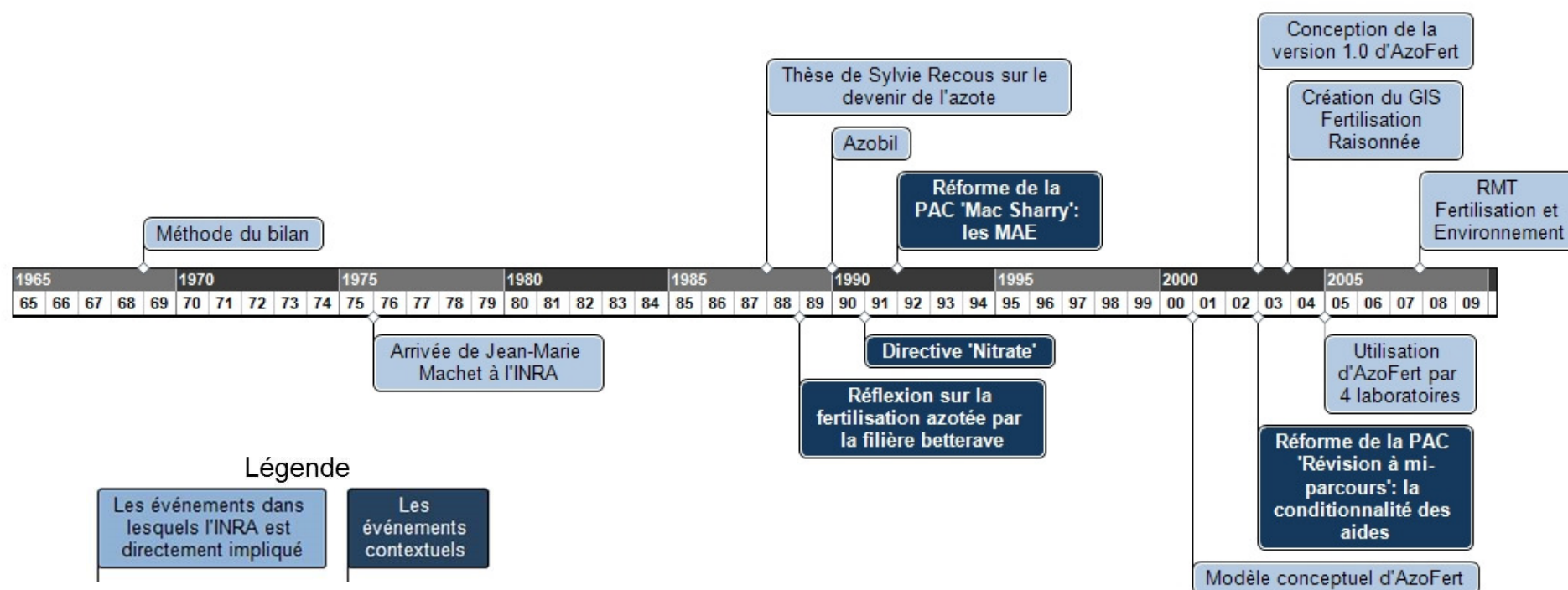


## Tools for standardisation

- Chronology: identification of time frame, main events, turning points, importance of long term investments
- Impact pathway: productive configurations, intermediaries, role of productive interactions and contextual factors
- Impact vector: visualization of assess RIA in various dimensions: economic, environmental, political, social, etc.



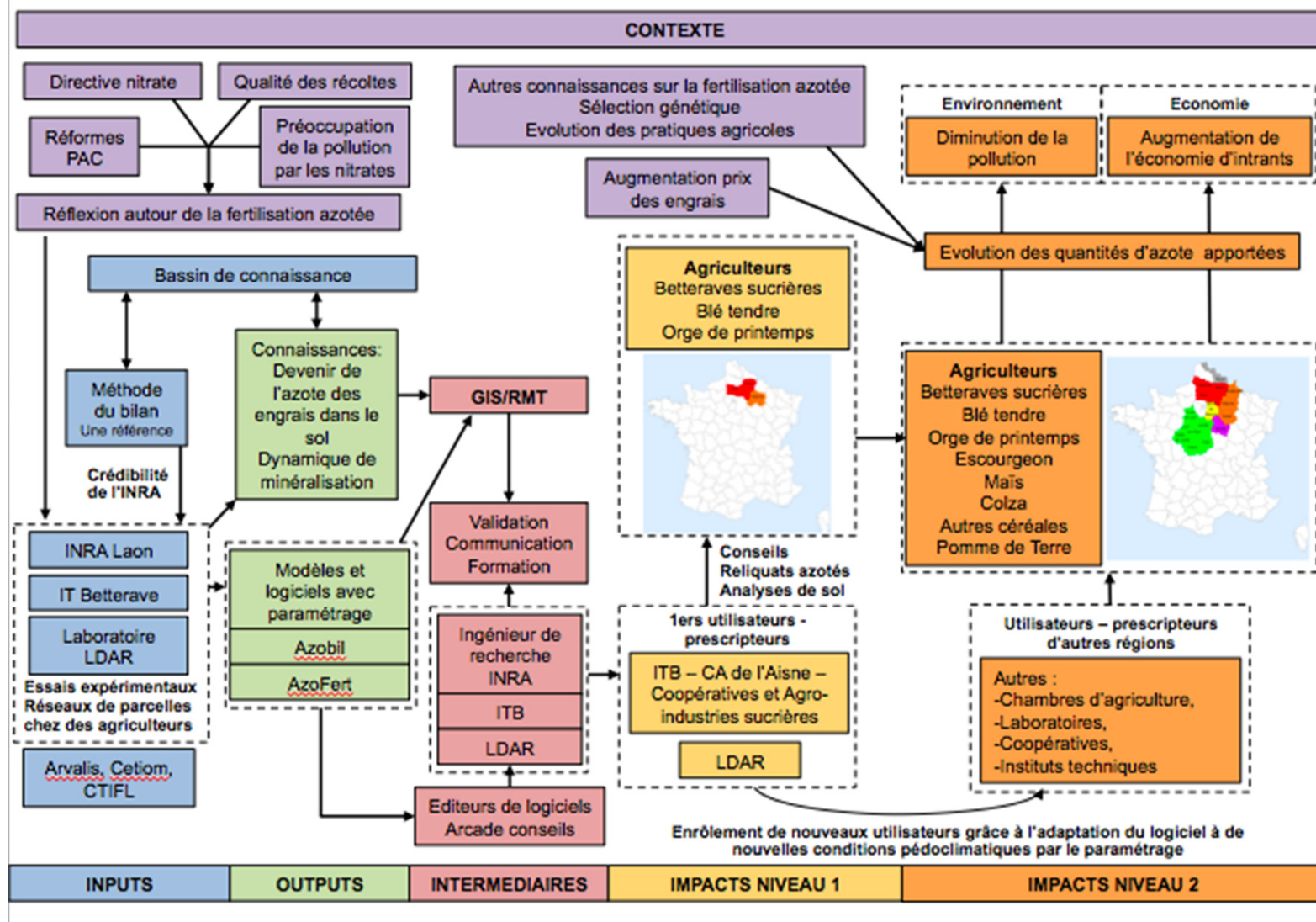
# AZOFERT: A decision tool to reduce use of nitrogen

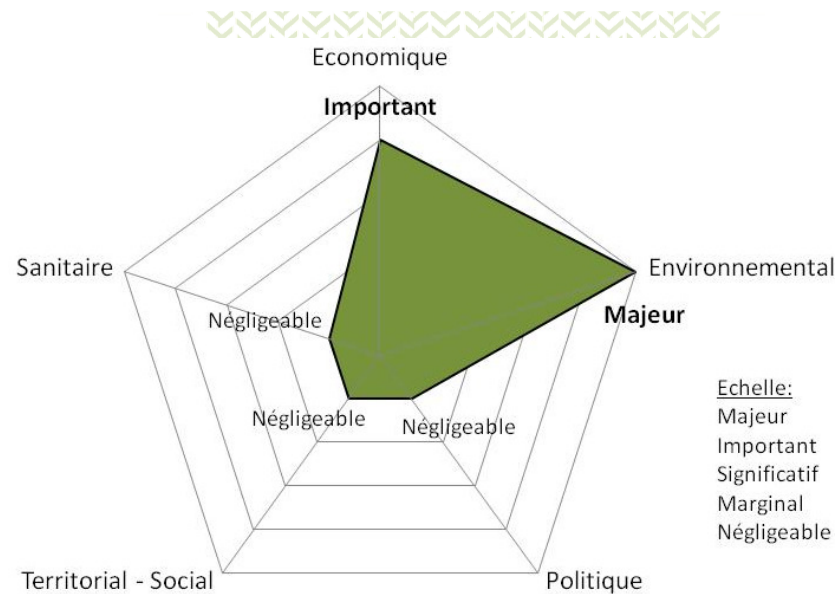


# Our use of impact pathways: key aspects

- Consider multi-directional processes and multiple iterations within each stage and between stages
- No longer keep the terminology of outcomes and impacts
  - potential 'policy' misunderstandings.
  - capturing the notions of initial deployment with a core set of involved actors and wider diffusion (or generalisation)
- Concept of “productive configuration” (adapted from Bozeman (2003) Knowledge Value Collective (KVC))
- Concept of intermediaries: any kind of entity (object, technical device, organization, etc.) which contributes to the translation of outputs into first order impact
- Innovation processes are context dependent (the organisation as such, the related industries, the institutional environment)

## Chemin d'impact : Fertilisation azotée et Outils d'aide à la décision





Dimension d'impact présente	Importance	Illustration
Environnemental	Majeur	<p>-Betterave: Utilisation du conseil AzoFert sur 315 000 ha en France (taux de pénétration de 80%). 80 unités d'azote en moins par hectare soit une diminution de 45% de la doses d'azote depuis 1990 (de 180 à 100 unités d'azote en moyenne)</p> <p>-Blé: Utilisation du conseil AzoFert sur 374 000 ha en France (taux de pénétration de 8%). Augmentation des doses entre 1990 et 2000 (de 175 à 200 unités/ha) puis diminution de 2000 à 2011 (de 200 à 180 unités/ha soit 10%). L'évolution des doses est soumise à d'autres facteurs (ex: prix azote) dont l'influence est plus importante que celle du conseil.</p>
Economique	Important	<p>-Betterave: Diminution de l'azote sans impacter le rendement voire contribuant à l'amélioration du rendement en sucre (+ 3,5t de sucre/ha) → économie de charges pour les agriculteurs. (21 000 agriculteurs sur les 26 000 planteurs de betteraves français).</p> <p>L'économie réalisée entre 1990 et 2015 est estimée à plus de 300 millions €, valeur 2011.</p>

## **2. The implementation of the ASIRPA approach: intermediary results and current developments**

- **Thème 1 : Production agricole, territoire**

- Sélection génomique des bovins lait
- Hybrides de colza
- Sélection génétique contre la tremblante
- *L'amélioration du pin maritime*

- **Thème 2 : Agro-alimentaire, compétitivité, emplois**

- STED – stabilisation tartrique
- Plateforme technologies de transformation du lait
- Détection et élimination des biofilms dans les industries alimentaires
- Création d'une start-up pour des innovations dans la production de biogaz

- **Thème 3: Impact environnemental**

- OAD fertilisation azotée
- Pomme tolérante à la tavelure : Ariane
- Variétés rustiques de blé et itinéraires à bas intrants

- **Thème 3: Impact environnemental (suite)**

- *Amendements calcaires contre le dépérissement forestier*
- *Capsis : plateforme de modélisation des dynamiques forestières*

- **Thème 4: Impact politique**

- Fire Paradox –stratégies de gestion intégrée des incendies de forêt.
- Toxicologie – recherches sur le Bisphénol A et les décisions publiques
- Expertise collective sur l'utilisation des pesticides dans l'agriculture française
- *Les taux autorisés de capture pour le saumon atlantique.*

- **Thème 5 : santé**

- *Protection du public en zone urbaine contre les processionnaires du pin*



## Adaptation/transfer of the approach to INRA divisions (1)

Note:

13 INRA divisions (average size = 800 staff members). INRA divisions are evaluated every 4 years

- Since January 2013: Compulsory integration of impact assessment (with recommendation to use ASIRPA approach)
- 1 research division assessment completed (EFPA 5 cases), 2 under way (E&A 8 cases, SP 7 cases), 2 forthcoming

## Adaptation/transfer of the approach to INRA divisions (2)

### Benefits

- The approach is 'portable'
- Considered as useful by heads of divisions and by researchers involved
- Selection of 'meaningful' cases fosters interesting discussions on the role and the modalities of impact of the research division
- Fosters culture of impacts, which is key for a mission oriented PRO

### Issues

- Time issue: long research lag (more than 10 years) vs. assessment / 4 years
- Weakness of self-evaluation of the impact vector
- Ethical issues
- Problems of access to data on impact in food industry because of privacy issues



# Preliminary results – A first characterisation of the impact of INRA (1)

- Time frames are critical  
Most cases entail a long knowledge-building period (often more than one decade) for teams to be in a position to address the issues raised (whether they 'push' it -Ariane - or whether they answer to societal issues - sheep scrapie)
- The knowledge pool/community is a central aspect
  - for knowledge building (beyond and above official partnerships),
  - for researcher credibility vis-à-vis other actors involved.
- Pathways are often built-in within the research process (through partners selected, in particular firms or technical centres/extension services)
- Complementary activities (to research) are often needed in parallel with the research phase for a potential for impact to exist (standards, government regulations, expertise)
- The notions of 'first' and 'wider' impacts are useful to track impacts over time,
  - especially when INRA has pioneered an approach that has generalised later (e.g. OGU case for hybrid rapeseed).
  - This notion of generalisation (getting out of the initial use/market/niche) is critical for assessing long-term impacts

# Preliminary results – A first characterisation of the impact of INRA (1)

## Analysis of the contribution of INRA

- Production of 'actionnable' knowledge
  - Incorporation of K in technical objects, models, data bases, technical devices, etc.
  - Production of credible knowledge for public decisions
- Structuration role: upstream (research consortiums), downstream (intermediaries, regulation)
- Anticipatory role, exploration of new options, insurance

## On-going cross-cutting analysis

- Strengthen and complete preliminary results
- Provide typologies of impact pathways for better management of impact

### 3. ASIRPA and the politics of impact assessment: some reflections on the experience

- Methodological difficulties related to:
  - Generic metrologies for non economic dimensions
  - Scaling up (from cases to the level of the organization)
  - Temporal dimensions (namely for accountability but also for learning processes
    - from ex post to ex ante)
- On the other hand, strong pressure to get the ‘magic number’: what is the value for society of every € invested in INRA (ROI)?
- Hence, need to complete the approach by:
  - Computation of ROI by standard econometric approaches
  - Building of meta-cases
- Future of Asirpa will depend on its use by research divisions



**Thank you for your attention**

