

Enriching the CAP evaluation toolbox with experimental approaches

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European Commission

JRC SCIENCE AND POLICY REPORTS

(How) can economic experiments inform EU agricultural policy?

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2015



Colen, L., Gomez y Paloma S., Latacz-Lohmann U., Lefebvre M., Preget R., Thoyer S., 2015, How can economic experiments inform EU agricultural policy?, JRC Science and Policy Report, 78 pages, doi: 10.279/17634

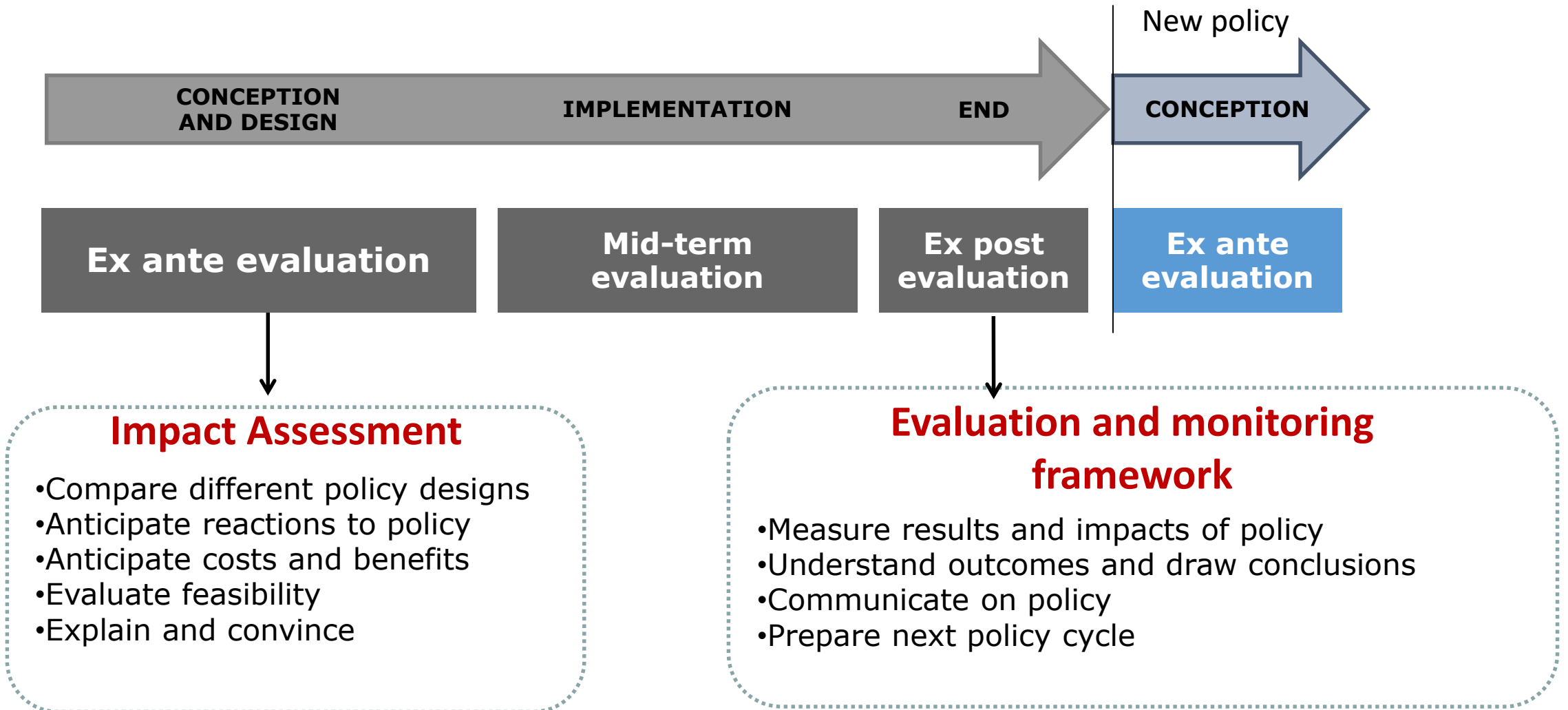
WORKSHOP
Economic Experiments for EU Agricultural Policy Evaluation: Methodological challenges
6-7 JUNE 2017

Amphi. TILLION
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The Common Agricultural Policy: the current evaluation toolbox and new evaluation needs

Policy evaluation cycle



The current evaluation toolbox



Mostly based on:

- observational data (FADN, FSS, Eurostat, market data)
- Surveys and case studies

Impact assessment (ex-ante)

- Stakeholders' consultation
- Simulation models
(CAPRI, IFM –CAP)

Monitoring and evaluation (ex-post)

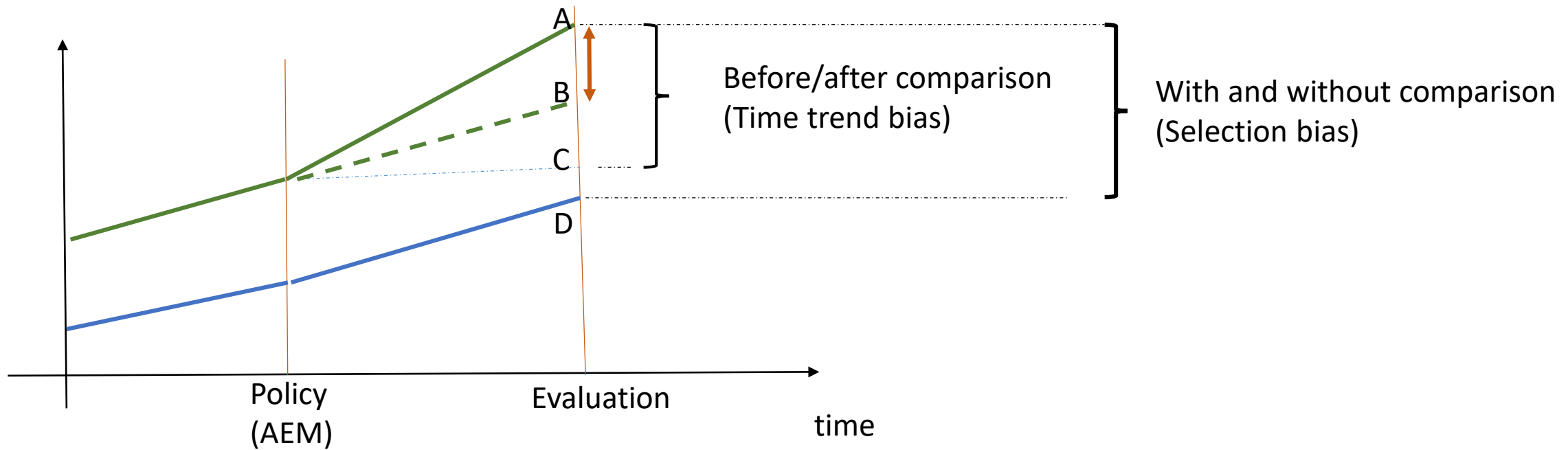
- Statistical and econometric analysis
- Case studies

EU and CAP reform context

- CAP under more scrutiny - Tough negotiations on CAP budget and CAP measures
 - *Need to demonstrate impact and to measure efficiency: accountability of public money*
- Acceleration of CAP reforms
 - *Less time to evaluate and learn from previous assessments*
- More innovation in CAP measures, more heterogeneity in implementation
 - *Test new policy design before implementation for different contexts/ location*
- Change in evaluation focus: farm-level, compliance, enrolment in voluntary measures
 - *Understand farmers' behavioural drivers and impacts on policy effectiveness*

Measuring the net impact of policy? Not an easy task

Outcome (i.E. conservation practice)



— Farmers who have enrolled in the AEM

— Farmers who have NOT enrolled

↔ Causal impact



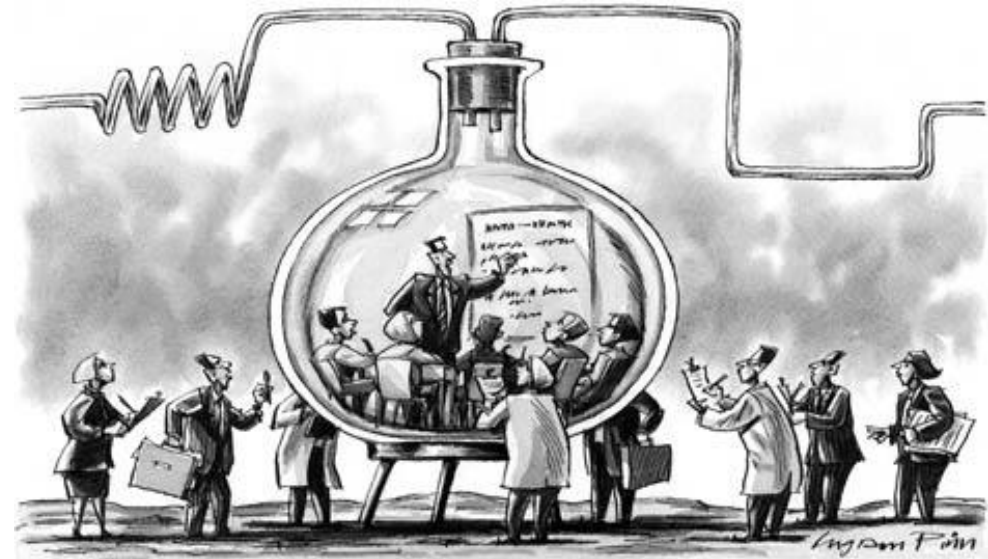
Challenges for an enriched evaluation toolbox

- Ability to demonstrate the causal impact of the policy by identifying the proper counterfactual and overcome the selection bias
- Elicit farmers' preferences and understand their reactions to policy in the presence of behavioural factors (risk and loss aversion, social norms, intrinsic motivations, time inconsistencies ...)
- Make use of the complementarities with other evaluation techniques
- Communicate convincingly on evaluation results with policy-makers

Bringing experimental approaches
into the evaluation toolbox

Experimental approaches

- Data **generation controlled by the experimenter** (instead of observational data)
- In a **controlled setting**: comparison of a treated group with a control group
- Ensuring replicability and representativity: **randomization** procedure for subject selection and treatment assignment
- Often rely on **revealed preference methods** (behaviour is usually incentivized)



Type of experiments



Laboratory experiments

Discrete Choice Experiments (DCE)

Economic experiments

Field experiments

Randomized Control Trials (RCT)



	Alternative A	Alternative B	Current situation
Reduction of herbicides use in proportion of present use ^①	30% reduction 	60% reduction 	
Supplementary localized use of herbicides (max 10% of the committed area) ^①	Allowed 	Allowed 	
Collective and final bonus for each farmer committed if 50% of ^①		Final bonus 	
Administrative and technical assistance ^①	Not included 	Included 	
Payment per year and per hectare subscribed ^①	170 €/ha/an	330 €/ha/an	
Choose your preferred option →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>



TYPE OF EXPERIMENTS	Participants	Context /task	Incentive mechanism
Laboratory	Students	Artificial - decontextualized	Payments according to choices or performance
Field	Participants drawn from the population of interest	From decontextualized (artefzctual field Ex) to contextualized (framed field ex)	Payments according to choices or performance
Discrete choice experiments	Participants drawn from the population of interest	Respondents presented with different choice cards reflecting contextualized alternatives – They have to select their preferred option among alternatives	No incentive mechanism in hypothetical DCE
Randomized Controlled Trial	Participants drawn from the population of interest	Participants randomly assigned to control and treatment group. The environment is the one in which participants are naturally undertaking the task	Participants get the benefit of treatment. Usually unaware of the experiment

New designs for agri-environmental measures

The contribution of experimental approaches

1. Evaluate an agri-environmental scheme in which enrolled farmers are paid only if a collective threshold of participation is attained

Le Coënt, Preget and Thoyer (2014) Why pay for nothing? An experiment on a conditional subsidy scheme in a threshold public good game, Economics Bulletin, 34(3)

Motivations: avoid wasting subsidies when no delivery of environmental benefit due to insufficient participation

Question: would such a rule discourage participation in the scheme?

Need to compare two incentive mechanisms:

- Contracts with individual payments proportional to individual environmental efforts
- Contracts with same payment rules but conditional on the attainment of a collective threshold of environmental efforts

Laboratory experiment conducted with students in a context-free setting

Results: the conditional payment does not deter contribution to the public good. Therefore scheme efficiency is improved.

Analysis of individual choices to understand the role of expectations and risk attitudes

First results encouraging and can help make a move towards evaluation in the field

2. Evaluate the efficiency of a conditional individual bonus to increase participation in agri-environmental schemes

Kuhfuss, Préget, Thoyer and Hanley, 2016, Nudging farmers to enrol land into agri-environmental schemes: the role of a collective bonus, ERAE, 43(4), 609-636

Motivations: What design of contract could increase the take-up rate of a herbicide reduction agri-environmental measure open to vine-growers in the South of France

Question: would the introduction of a collective incentive in the AEM have a positive effect on farmers' participation?










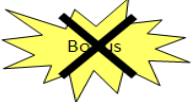





Discrete choice experiment conducted with 317 winegrowers

Different attributes characterizing the herbicide reduction contract

One attribute is the **conditional bonus** paid to each enrolled farmer per hectare enrolled, at the end of the 5-year contract **if 50%** of the area of the local vineyard is enrolled in the AES

Results: stated choices show that winegrowers value the inclusion of the collective bonus option (108 to 138€/ha more than its actual financial magnitude). They also increase their vineyard area under contract.

Interpretation: Consistent with the hypothesis that farmers are more willing to provide environmental efforts when their neighbours also do so: signal of a social norm?

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Collective and final bonus for each farmer committed if 50% of 		Final bonus 		
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Choose your preferred option →	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

3. Testing a social comparison nudge on winegrowers with a randomized controlled trial

Chabe-Ferret, Le Coënt, Préget, Subervie, Thoyer, 2018, Can nudges induce changes in farmers' agricultural practices? Evidence from a RCT with French winegrowers, submitted ... and rejected (because of null results/ and no explanation for the underlying causes explaining the absence of impact)

Motivations: Find non monetary incentives to accelerate the take-up of new farming practices by farmers?

Question: Can we measure the net impact of a social comparison nudge on farmers' participation in information meetings on environmentally-friendly techniques?

Implementation of a RCT – randomized stratified field experiment

- 260 winegrowers in the control group: received an invitation letter for an information meeting on bio-control against the grapevine moth
- 272 winegrowers in the treated group received the same message with additional information on the take-up rate of this bio-control technique in the next door cooperative and at regional level

Results: at usual levels of confidence, we cannot detect an effect of the nudge. We cannot reject the hypothesis of small effects, not detectable with our sample size

La lutte contre les vers de grappe par confusion sexuelle, ça marche !

Déjà 5500 ha protégés dans l'Hérault.
En 2017 ce sera l'ensemble des vignes de Puichéric

Et bientôt dans vos parcelles ?

LES VIGNERONS DU PAYS D'ENSERUNE

Contact : Caroline Lefebvre au 06 86 41 52 45

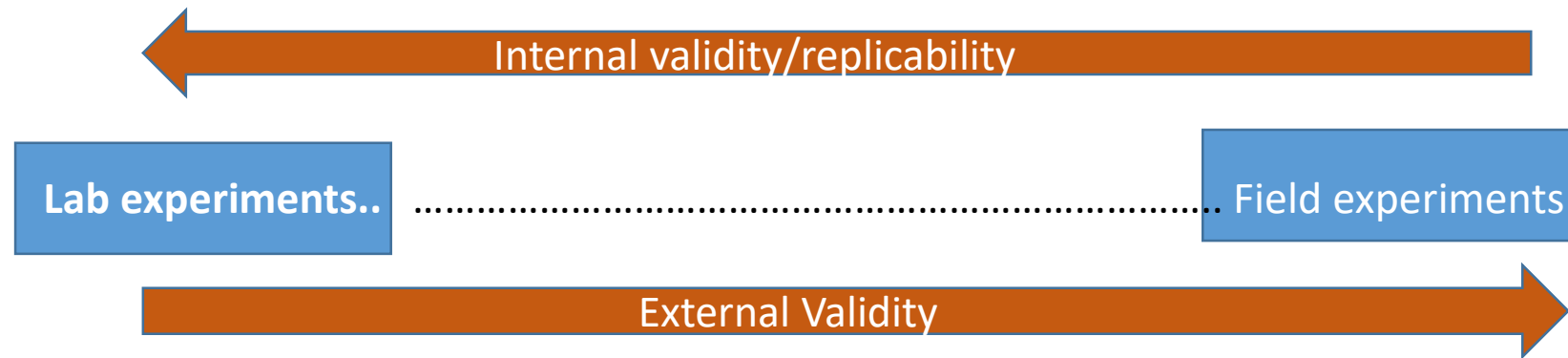
Hérault département

AGRICULTURES & TERRITOIRES CHAMPE D'AGRICULTURE

agriculture en eau

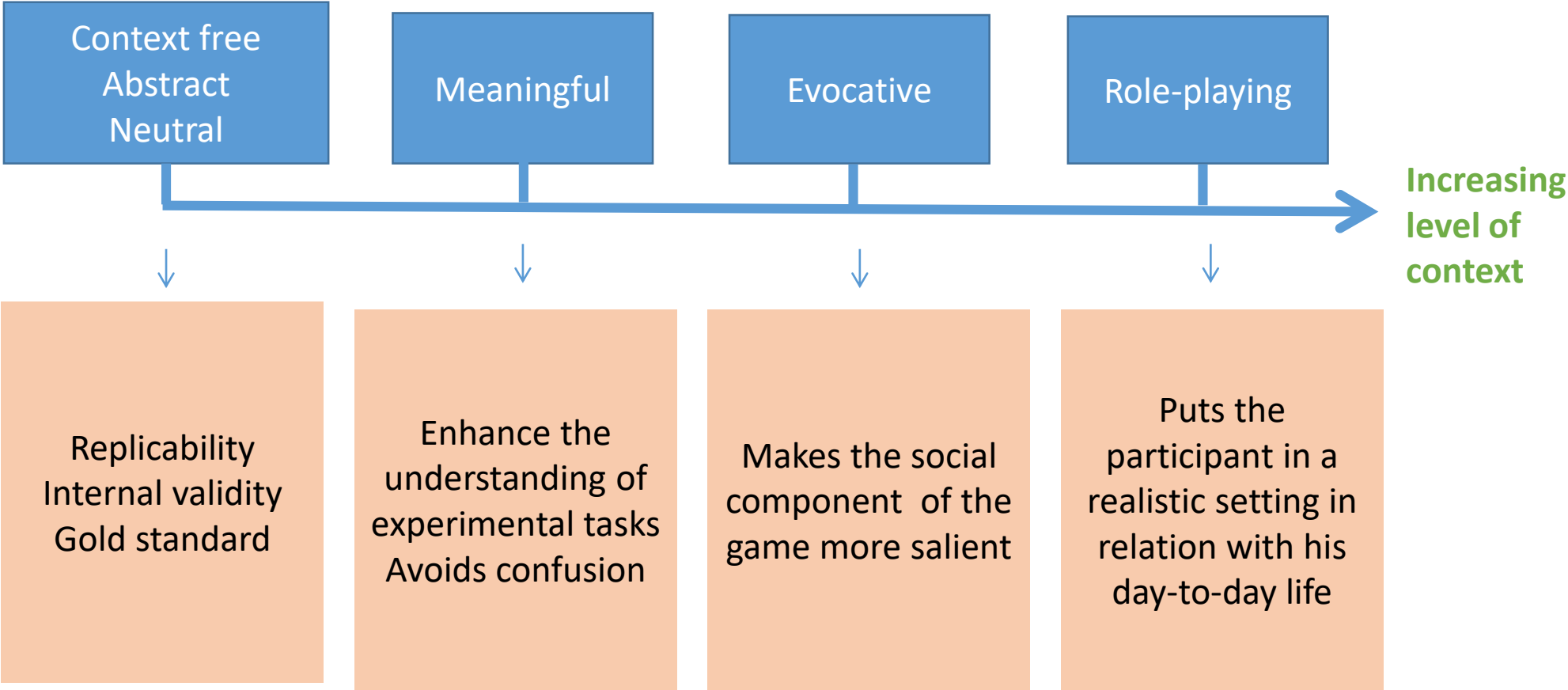
Complementarities between experimental approaches Proceed by incremental steps

1. From lab to field:



- From “wind tunnel” testing to test flights
- Contextualizing the protocol
- Recruiting participants

From decontextualized to contextualized experiments



Alekseev, Charness and Gneezy, JEBO, 2017

From students to farmers

- **Difficulty to reach farmers :**
 - Cooperation with public institutions and professional corporations
 - Use the local press/ events /e-surveys
 - Need for individual socio-economic data – impossible to merge database or to link statistical data base (ag census) to individual farmers
- **Some issues may potentially be more pronounced**
 - More heterogeneity
 - Self-selection (voluntary participation to incentivized experiments)
 - Anonymity (between experimenter and subjects, among participants)
 - Scrutiny – warm glow
 - More expensive (higher stakes needed)



2. Organizing RCT in the CAP context?

- Non discrimination for EU farmers
- Sampling and need of adequate data for stratification
- Contamination /spillovers
- Collecting the outcome

Close to Random RCTs » (Duflo et al., 2007; Shadish et al., 2002, Morawetz, 2018)

- **Pilot projet, phase-in:** randomly offering farmers to participate in a pilot study before the measure is implemented at full scale / randomize the order of phase-in
- **Over-subscription:** if applicants > budget – select applicants by lottery
- **Encouragement design:** promote program among randomly selected farms
- « **Free-lunch randomization** »: free-lunch farms benefit from the program payments without having to comply

PRESENTING ECONOMIC EXPERIMENTS TO RESEARCH FUNDERS AND POLICY-MAKERS?

From a round table chaired by M. Lefebvre with A. Thomas (INRA SAE2, France), F. Dessart (JRC, EU Policy Lab), Y. Plees (EC, DG Agri), V. Forget (Ministry of agriculture, CEP, France) & J.Lankoski (OECD Trade and Agriculture Directorate)



- Eager to improve the « evidence-based » policy-making process
- Increasingly aware of the experimental approaches in policy ex-ante and ex-post evaluation
- Interested in cross-country experiments testing the relevance of CAP at a large scale
- Interested also in understanding better how behavioural factors can explain the success or failure of policy measure
- Would like to see more inputs of experimental studies in policy simulation models and to see experimental protocols improved by model simulation results
- Contextualized results are important for policy-makers

The REECAP Network



Research network on Economic Experiments
for the Common Agricultural Policy

➤ **Website:**

<https://sites.google.com/view/reecap/about>

Contact: info@reecap.org

Our mission: To bring together researchers, experts and policy makers interested in the use of economic experimental approaches to evaluate and improve the Common Agricultural Policy

- 6-7 Juin 2017 in Angers -**1st workshop** on methodological challenges
- 2d workshop in Vienna 25-27 September 2018
- European Review of Agricultural Economics **special issue to be published in 2019: “Enriching the CAP evaluation toolbox with experimental approaches”**



Thanks for your attention!

