

Winners and losers from climate change in agriculture.

Insights from a case study in the Mediterranean basin

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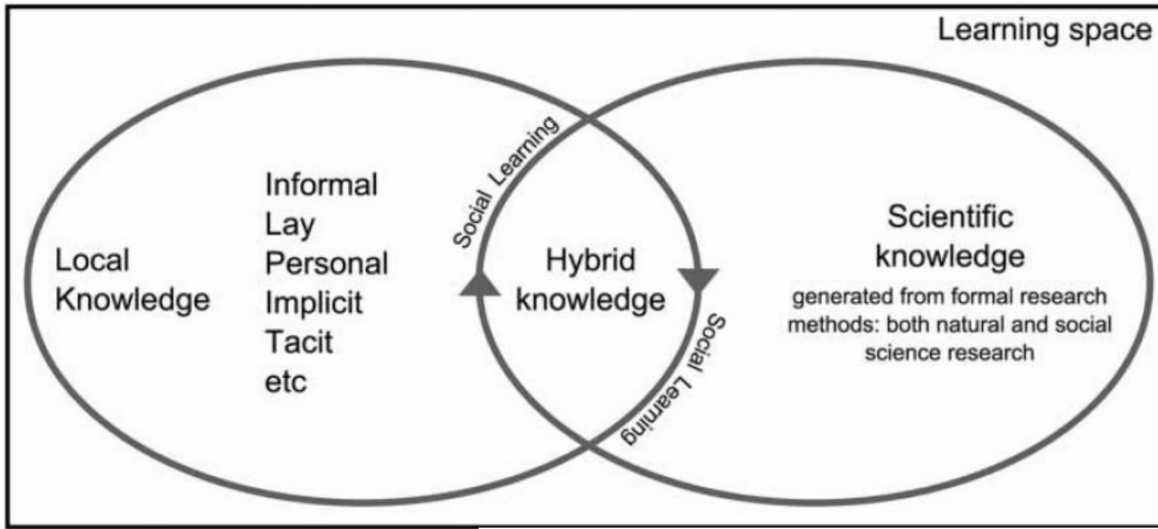
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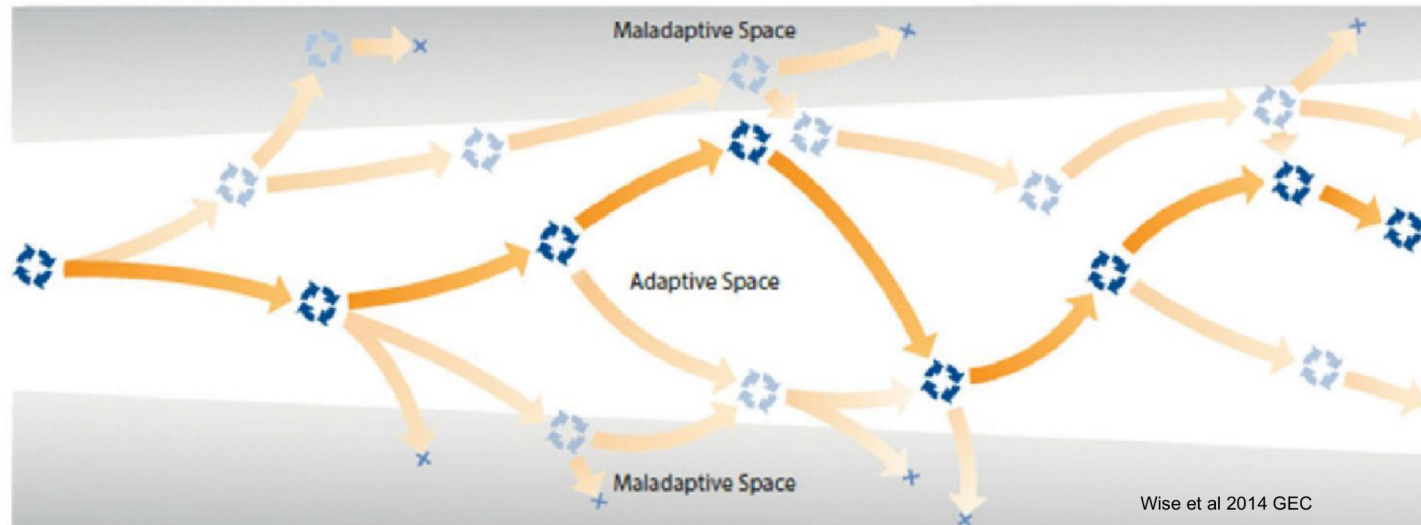
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C3: Measuring the costs of inaction on climate change: how impacts research can support climate change litigation

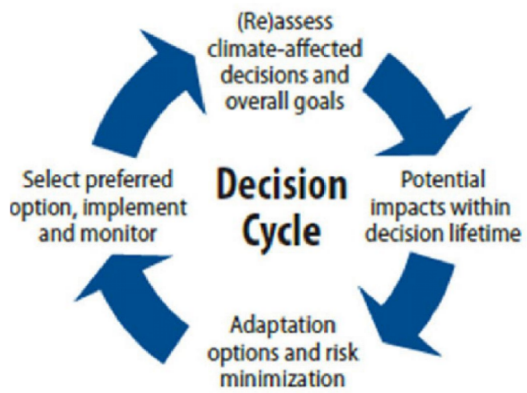
Hybrid knowledge rationale



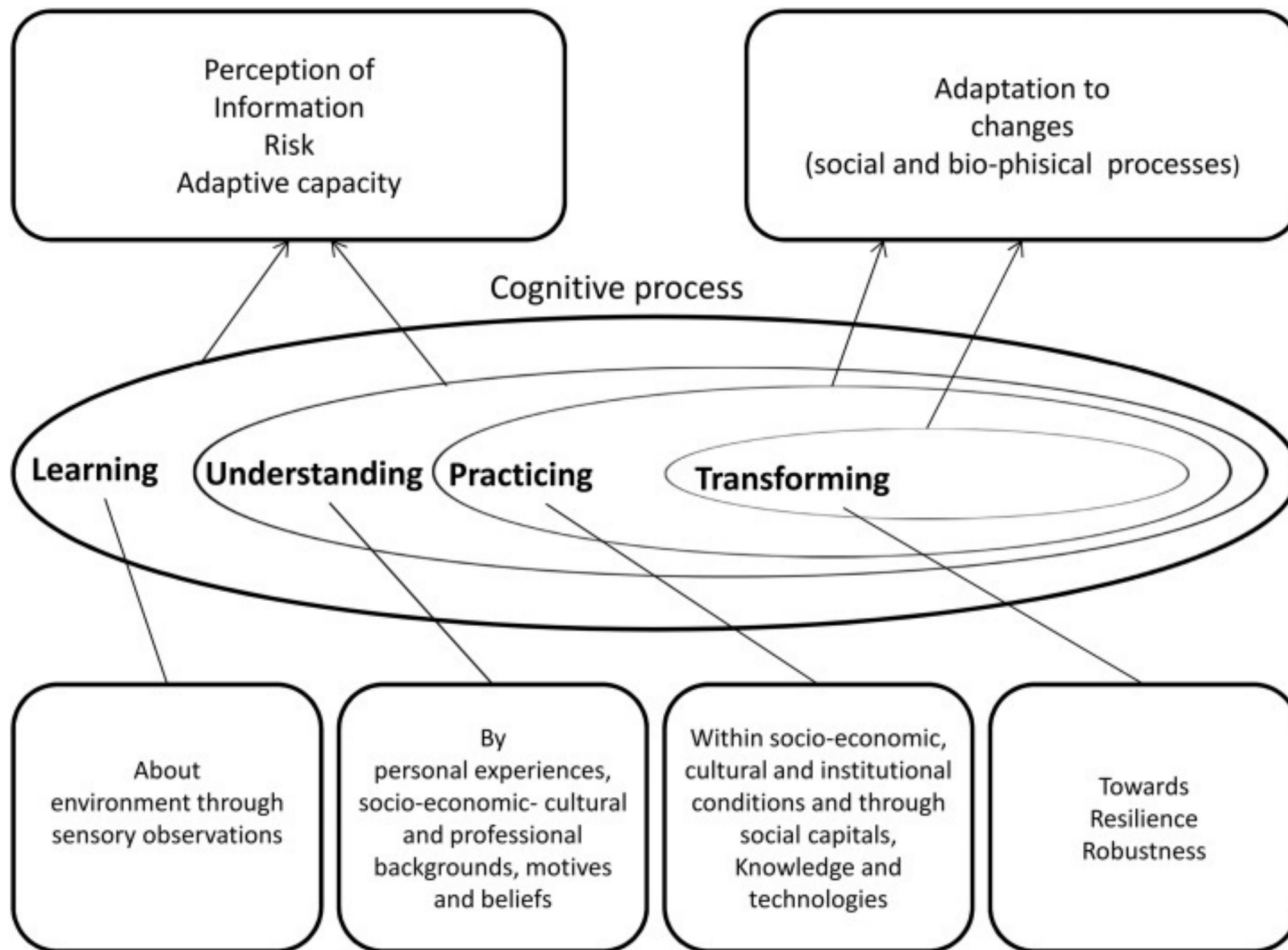
Iterative Decision Cycles



The Decision Cycle



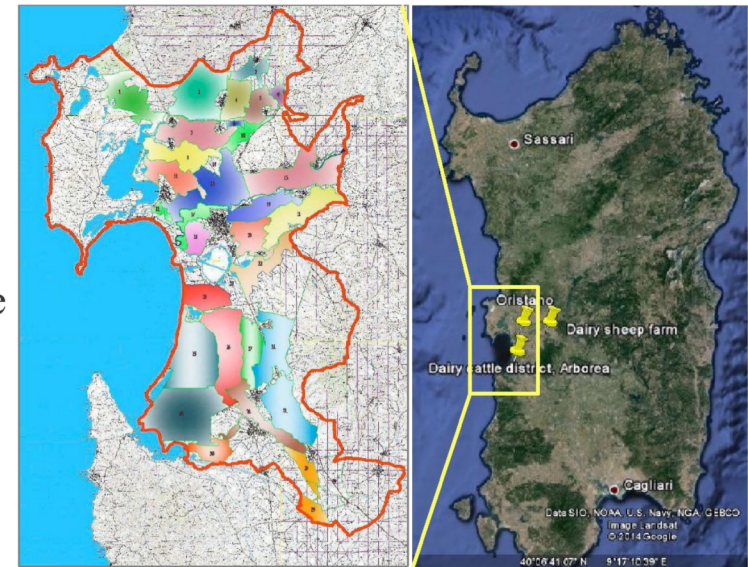
framework of perceiving and adapting process.



Nguyen T., et al., 2016 "Perceiving to learn or learning to perceive? Understanding farmers' perceptions and adaptation to climate uncertainties", *Agricultural Systems*, Volume 143, 2016, 205–216, <http://dx.doi.org/10.1016/j.agsy.2016.01.001>

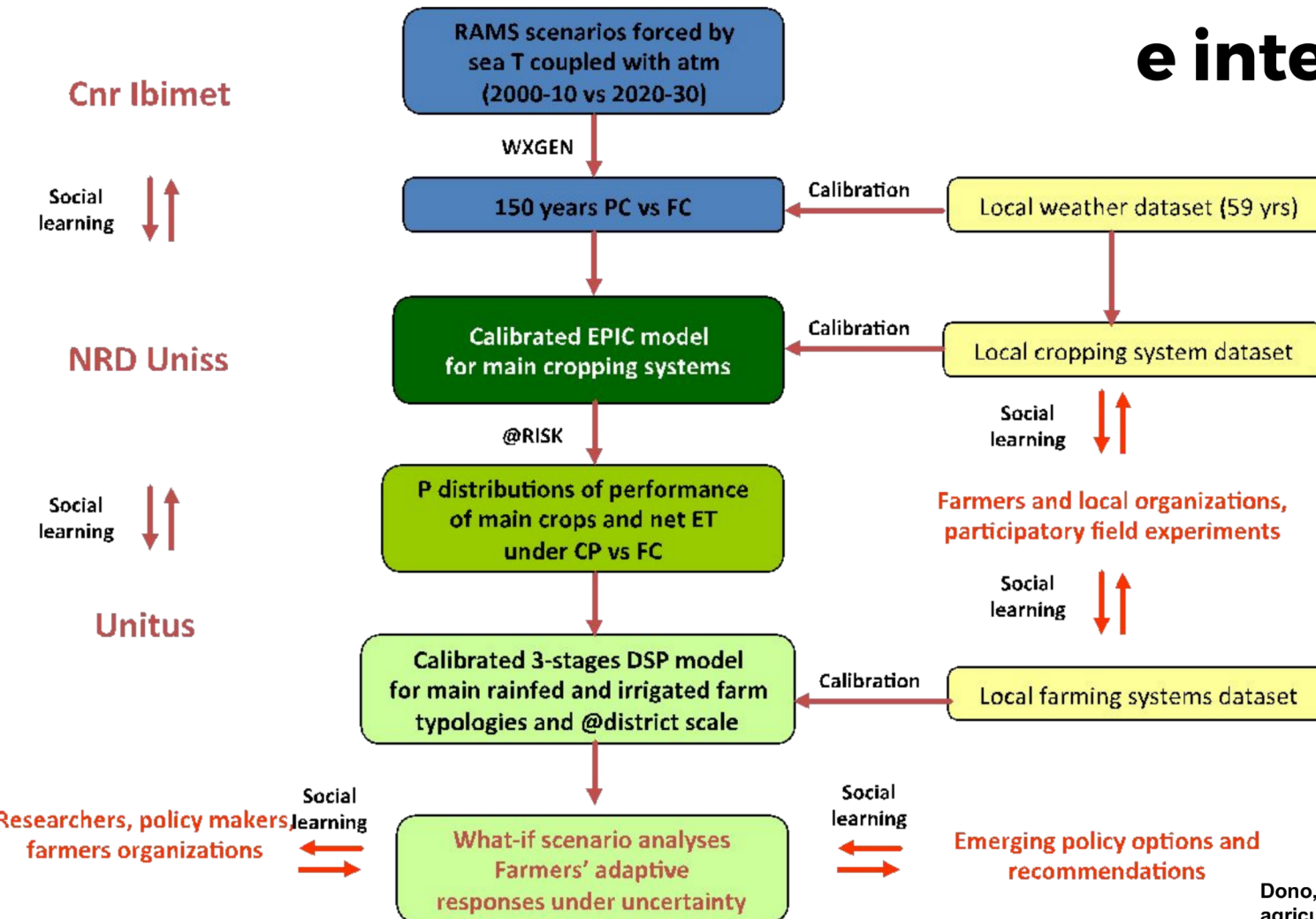
The case study: what we did

- ◆ Stakeholder engagement informal platform to share the main issues at stakes (social construction);
- ◆ Participatory field experiments & data analysis;
 - local datasets
 - awareness raising
- ◆ identification of key drivers to test adaptive responses;
- ◆ Climate+Crop+Live+Trade integrated modelling assessment (not just a cascade modelling);
- ◆ Participatory analyses of the modelling outcomes;
- ◆ Long term observation of changes in practices;



Dono, G., et al.. 2016. Winners and losers from climate change in agriculture: Insights from a case study in the Mediterranean basin. *Agricultural Systems*, 147, 65-75, doi:10.1016/j.agsy.2016.05.013

Climate+Crop+Live+Trade integrated modelling framework



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Net Income per farming system typology

Farming system type	2000-10 (k€)	2020-30 (Δ%)
Rice	4,097	+9.9
Vegetables - Cereals	18,656	-0.8
Cereals – Forages	7,593	+1.4
Cattle A	26,355	-5.1
Cattle B	6,825	-5.9
Sheep A	2,461	-5.3
Sheep B	1,984	-11.8
Sheep C	3,984	-7.4
Other	3,721	+0.1

Aggregation: farming system type;

Time Horizon: near future;

Economical impacts essentially driven by the climate variability changes, and clustered according to water-availability;

Extreme events included: mainly heat waves and drought;

Economical impacts in a climate scenario closed to the “1.5°C target”;

Methodology could be applied to other districts;

Lesson learned

- The **institutional set-up** is crucial. Institutions are not only formal body but they are also playing a substantial role in the adaptation process;
- **Relationships** are strongly unbalanced between different stakeholders;
- Only a few stakeholders aware of threats to **climate change**, but the **causal link** between negative effects and climate change can be identified and shown to them [**extreme events included**, mainly: heat waves and drought];
- The study has contributed to increase **interdependencies awareness** among stakeholders. There is a need of a larger **informal space for an easier debate**, to learn, to integrate scientific and local knowledge and to improve "the interfaces conductivity";
- There is a stronger need of **public-private partnerships** to deal with complex issues such as those related to water governance;
- **Command-Control** approaches do not work;
- There is a (strong) need of changing **scientific research methods** to support non-litigious mediation of environmental conflicts and fostering process co-evolution ;

Get Connected

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Thank you!

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DAY 1 | WEDNESDAY, 11 OCT 2017

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