



# Study on PCIC's online tools

What are the mechanisms of the adoption of PCIC's online tools  
by its users ?

# Introduction

- ***What are PCIC's online tools ?***

- Tools available on PCIC's website providing climatic information

- Plan2Adapt
- Regional Analysis Tool (RAT)
- Data Portal
- Seasonal Maps

- ***Why studying PCIC's online tools ?***

- They support of PCIC's mission by delivering climatic information that can be directly used by professionals

- ***Why studying adoption of PCIC's online tools ?***

- Adoption is defined as the long term integration of PCIC's online tools in the professional tasks of the users

Thus, adoption of PCIC's online tool allows the implementation of bottom-up adaptation actions

# Objectives

- ✓ Increase our knowledge on the current adoption of PCIC's online tools
  - *What are the adoption features ?*
  - *What is the adoption rate?*
  
- ✓ Understand the mechanisms of the adoption
  - *What are the conditions that will make a user adopt a PCIC online tools?*
  - *What are the barriers to the adoption ?*
  
- ✓ Suggest some actions to increase the adoption rate
  - *What can be done to overcome the adoption's barriers?*

# Collecting data

Quantitative survey	Qualitative survey
Online survey 425 answers	Semi structured interviews 21 interviews
<i>Distribution of the survey</i> PCIC and PICS social media Personal contacts of keen users Participant to the webinar on online tools	<i>Selection of the interviewees</i> Respondent of the online survey Spontaneous volunteers who came to us Targeted profiles

## Main limits :

- The population of interest is based on our perception of which type of professional should take climate change into account
- Distribution of the online survey relies on PCIC's contacts and keen users

✓ *Increase our knowledge on the current adoption of PCIC's online tools*

# Why do people use PCIC tools?

1. Characterize future climate conditions
2. Raise awareness about climate change
3. Inform decision and or adaptation option

*'You are trying to engage people, educate people about climate change [...] So I get to find your tool and then use it, make slides out of it'*

*'I am just looking for information'*

*'We are definitely using it [Plan2Adapt] for setting priorities.'*

✓ *Increase our knowledge on the current adoption of PCIC's online tools*

# How are people using PCIC tools?

- Do not perform work on the tool's output
- Copy Paste graphs and tables
- Don't use it to publish articles
- Use the tool alone or with close internal co-workers

83% of the respondents use the tool at it is

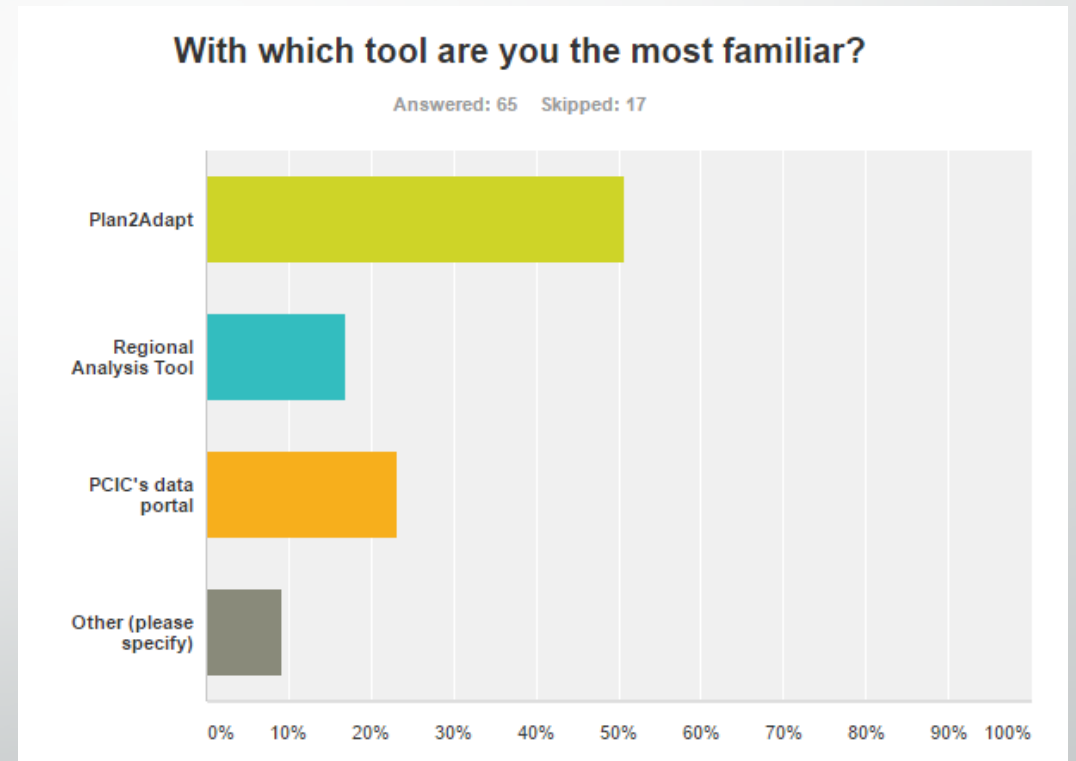
51% of the respondents use the tool alone

77% of the respondents never published information based on the tool

✓ *Increase our knowledge on the current adoption of PCIC's online tools*

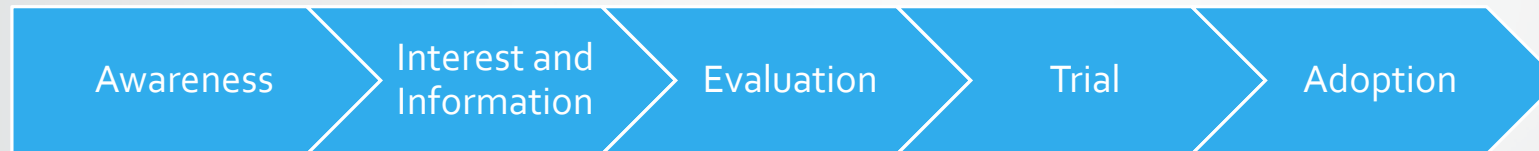
# How many people use PCIC tools?

- Among all respondents, those who declare that they are familiar with at least one of the 3 main tools:
  - 18% (73 of 425)
- BUT if we filter by profession:
  - 23% of foresters
  - 30% of agrologists
  - 30% of biologists
  - 40% of planners
  - 40% of engineers

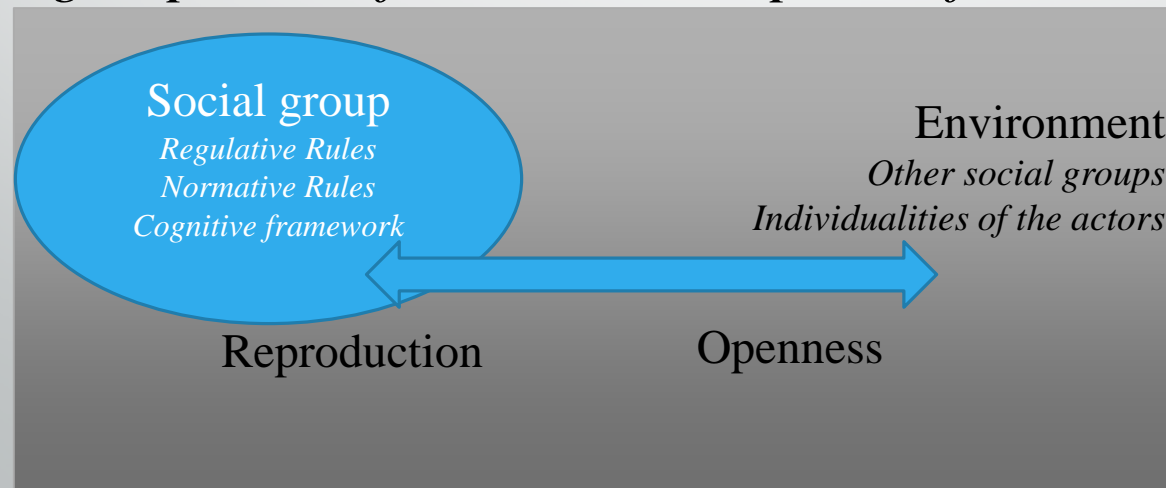


# Approach

**5 steps to adoption:** *do the characteristics of PCIC's online tools allow users to go through each step of the adoption process ?*



**Open-ended social system approach:** *what are the internal dynamics of a social group that influence the adoption of PCIC's online tools ?*

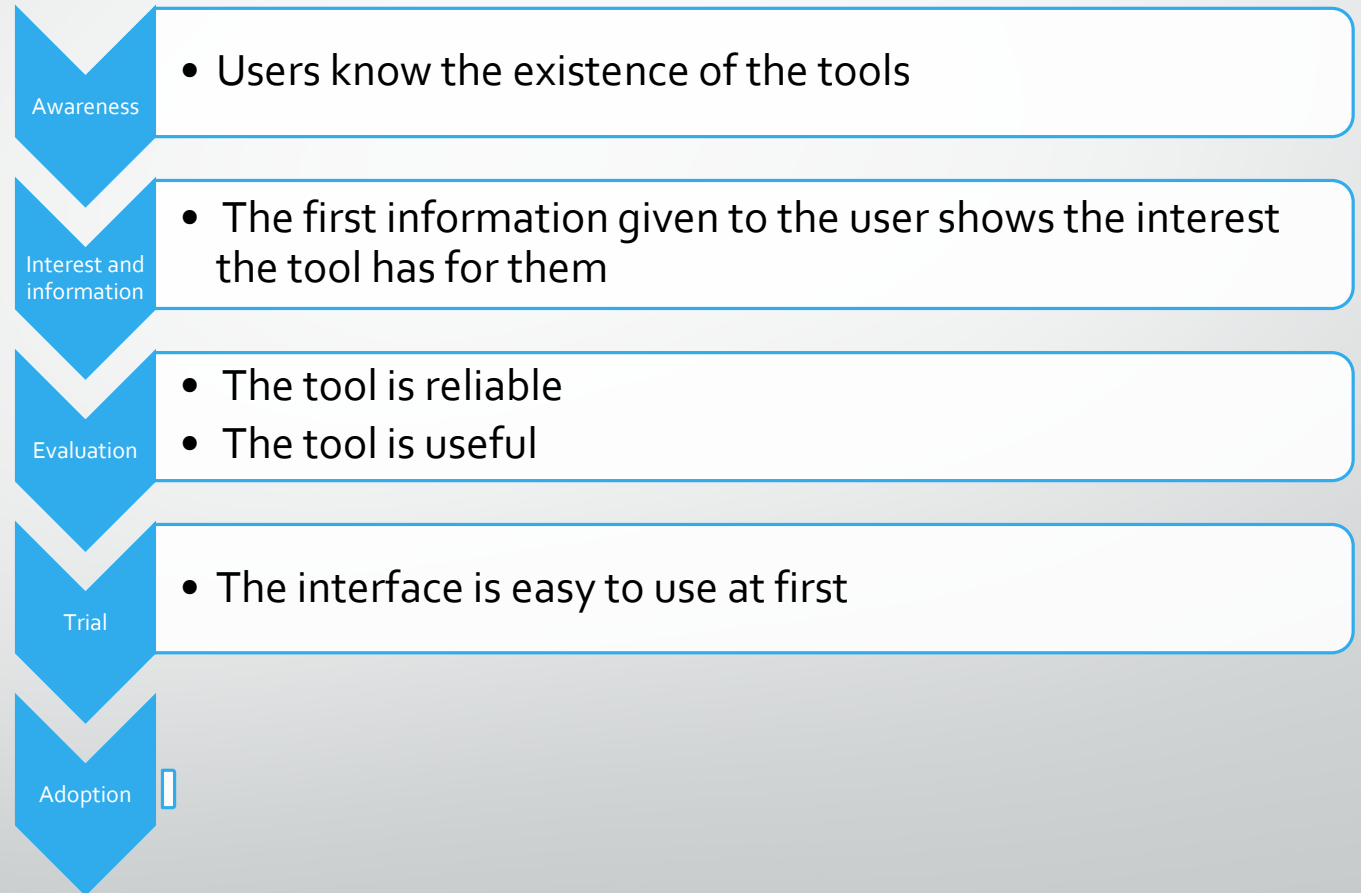




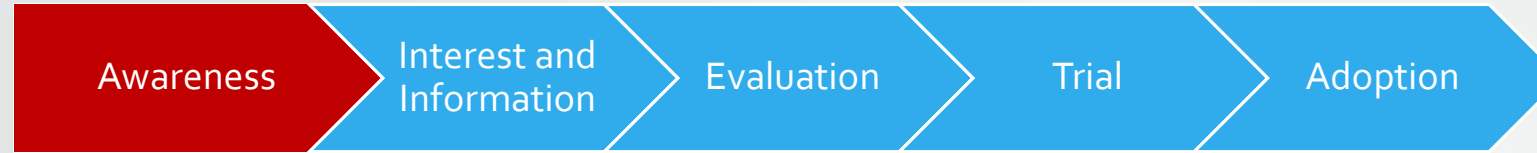
✓ *Understand the mechanisms of the adoption*

# Which conditions are favorable to the adoption ?

- Adoption is an individual decision to become a regular user of a product
- To adopt a product, an individual goes through each step, one after the other



✓ *Understand the mechanisms of the adoption*



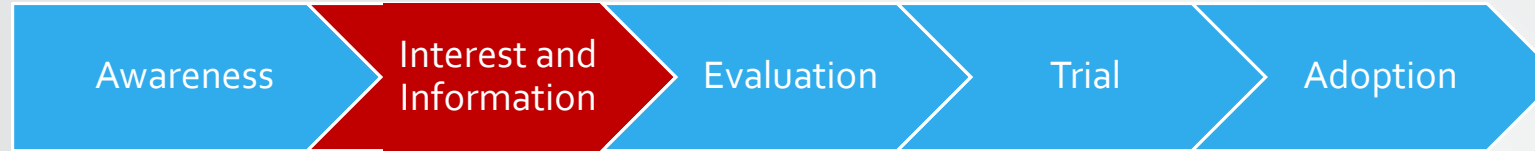
- Large number of users interested in online climate tools but previously unaware of PCIC
- Such users are reachable through recommendations from keen user
- Users are more likely to use and tell others about PCIC's online tools if personally recommended to them

80% of the respondents did not know about the tool before

*'I can see myself using that tool'*

67% of the aware respondents knew it from workshop, a conference or word of mouth.

✓ *Understand the mechanisms of the adoption*



- When users access PCIC online tools they first encounter descriptive information about methods, data sources, and *how* to use tools but they need more information about *why*
- Since users have some difficulties to see how tools can be useful in their work at the beginning, this is a barrier to becoming more familiar with the tools

*'What could be useful for me is to list the different possibilities of using the data [...]. It would be a good idea to say: ok this data is available and here are the typical uses for this data.'*

*'I would like to see what tools are available, how to incorporate the information into which kind of assessment.'*

✓ *Understand the mechanisms of the adoption*



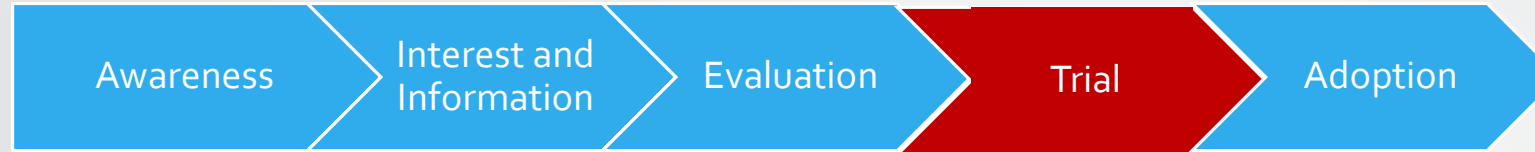
- Users are looking for two main characteristics when evaluating online climate tools:
  1. Usefulness
  2. Reliability
- Most users place much more emphasis on usefulness than reliability (because there tends to be high trust of PCIC as a source)

*'I think the tool is reasonably accurate but obviously there is a lot of uncertainty in the projections.'*

*'No I don't have big doubts about the tool, I think it's reasonable.'*

*'I was frustrated that I could not translate it into the impacts I need to see for my work.'*

✓ *Understand the mechanisms of the adoption*



- Users like maps, summary table, and impacts tab of Plan2Adapt
- Users have some difficulties choosing the timeslice and experiment variable in RAT
- The way of drawing the interest region is not intuitive in RAT

*'Plan2Adapt is really easy: it's really clicking on a couple buttons and then get some really good information'*

*'I tend to use more the information in the tables, just because it is easier to summarize'*

*About the RAT :  
'I used it, but it's not as simple'.*

✓ *Suggest some actions to increase the adoption rate*

# Actions: online tools



<b>Increase awareness</b>	<b>Inform about the concrete interest of the tool</b>	<b>Increase reliability</b>	<b>Simplify the interface (for the RAT replacement)</b>
<p>Inform potential users of PCIC's online tools via the network of keen users</p> <p>Communicate about PCIC's online tools in a really short format, that can be easily forwarded by email</p>	<p>Highlight the webinar on online tools</p> <p>Deliver concrete examples of adaptation projects involving the use of tools</p> <p>Conduct workshops and training seminars</p>	<p>Update to CMIP5</p>	<p>Provide guidance about how to choose timeslice and experiment variable</p> <p>Allow to enter latitude and longitude to draw the region of interest</p> <p>Make regions of interest available when users return</p>

# Focus on engineers

- Tools are not meeting engineers' needs : they want more detailed information
- Engineers declare that climate change is too slow to impact their design

*'It must be because I am an engineer but I want to see the tables, I want to see the numbers, I want to see the charts'*

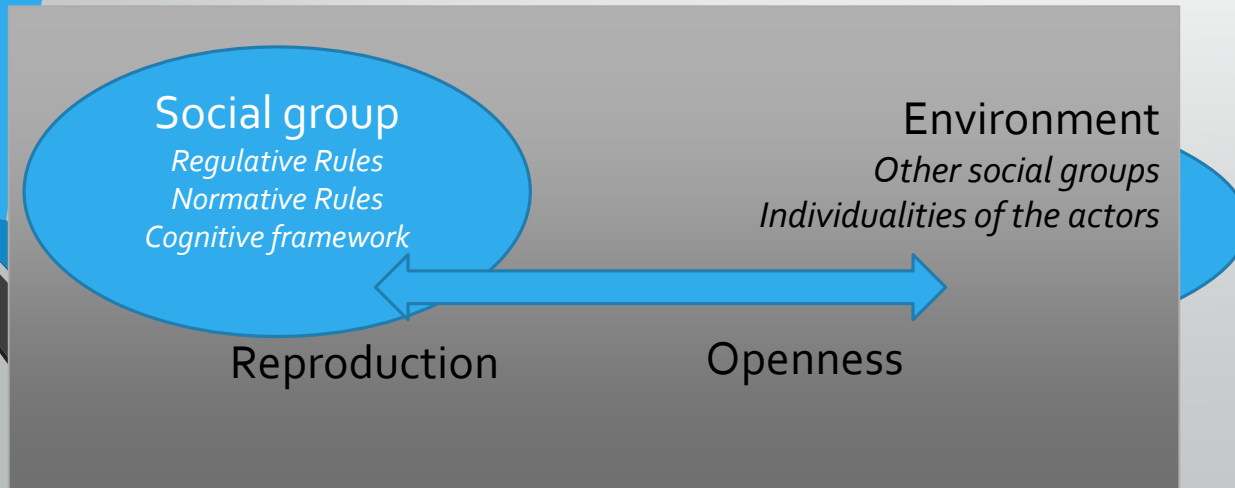
*PCIC does not provide 'enough details to inform design. You know when you compare the parameters that are shown, they are very limited compared to what a designer may use.'*

*'In my opinion, over the lifetime of equipment we don't consider climate change, we are not overly concerned about that. Our design is a little bit rough compared to the slow change of the climate'.*

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→ **Paradox**



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✓ *Understand the mechanisms of the adoption*

# Paradox

## Regulative rules :

Formal regulation shapes the climatic parameters engineers are looking for  
Ex: National Building Code

## Normative rules :

Engineer's identity and credibility is based on the use of precise numbers

*'It must be because I am an engineer but I want to see the tables, I want to see the numbers, I want to see the charts'.*

## Cognitive frameworks :

Engineer's formation creates core capabilities that became core rigidities  
Ex: Economic evaluation of the projects



External pressure to consider climate change



✓ *Suggest some actions to increase the adoption rate*

# Actions: resolving the paradox for engineers

Standard engineering practices and attitudes are generally not compatible with climate science and data limitations of making climate information available through online tools

Regulative Rules	Normative rules	Cognitive rules
Support the creation of new regulation (ex: climate change risk assessment in MFLNRO & MOTI)	Work with professional associations to diffuse success stories of engineer using climatic data that is not 'precise'	Communicate the risk and its economic implication  Partner with engineering schools



Thank you for your attention

✓ *Understand the mechanisms of the adoption*

# Social systems approach

- The adoption depends on the dynamics within the social systems of the user
- Social systems tends reproduce classic patterns but are open to their environments
- Adoption is the result of 2 dynamics : internal reproduction of the system and openness to the environment

