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

<table>
<thead>
<tr>
<th>Quantitative survey</th>
<th>Qualitative survey</th>
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<tbody>
<tr>
<td>Online survey</td>
<td>Semi structured interviews</td>
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<tr>
<td>425 answers</td>
<td>21 interviews</td>
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<tr>
<td>Distribution of the survey</td>
<td>Selection of the interviewees</td>
</tr>
<tr>
<td>PCIC and PICS social media</td>
<td>Respondent of the online survey</td>
</tr>
<tr>
<td>Personal contacts of keen users</td>
<td>Spontaneous volunteers who came to us</td>
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<tr>
<td>Participant to the webinar on online tools</td>
<td>Targeted profiles</td>
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**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
Why do people use PCIC tools?

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

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

‘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.’
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
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?
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.

**Awareness**
- Users know the existence of the tools

**Interest and information**
- The first information given to the user shows the interest the tool has for them

**Evaluation**
- The tool is reliable
- The tool is useful

**Trial**
- The interface is easy to use at first

**Adoption**

✓ 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

Understand the mechanisms of the adoption

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.
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.

Understand the mechanisms of the adoption

> ‘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.’
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.'
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’

‘I used it, but it’s not as simple’.
Suggest some actions to increase the adoption rate

### Actions: online tools

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<th>Awareness</th>
<th>Interest and Information</th>
<th>Evaluation</th>
<th>Trial</th>
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<td>Increase awareness</td>
<td>Inform about the concrete interest of the tool</td>
<td>Increase reliability</td>
<td>Simplify the interface (for the RAT replacement)</td>
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- **Increase awareness**
  - Inform potential users of PCIC’s online tools via the network of keen users
  - Communicate about PCIC’s online tools in a really short format, that can be easily forwarded by email

- **Inform about the concrete interest of the tool**
  - Highlight the webinar on online tools
  - Deliver concrete examples of adaptation projects involving the use of tools
  - Conduct workshops and training seminars

- **Increase reliability**
  - Update to CMIP5

- **Simplify the interface (for the RAT replacement)**
  - Provide guidance about how to choose timeslice and experiment variable
  - Allow to enter latitude and longitude to draw the region of interest
  - Make regions of interest available when users return
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.’

‘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.’

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.’
Focus on engineers

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⇒ Paradox

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Social group
- Regulative Rules
- Normative Rules
- Cognitive framework

Environment
- Other social groups
- Individualities of the actors

Reproduction

Openness
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

Influence of the environment

Repetition of old habits within the social system

External pressure to consider climate change
**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.

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<th>Normative rules</th>
<th>Cognitive rules</th>
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<td>Support the creation of new regulation (ex: climate change risk assessment in MFLNRO &amp; MOTI)</td>
<td>Work with professional associations to diffuse success stories of engineer using climatic data that is not ‘precise’</td>
<td>Communicate the risk and its economic implication</td>
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<td></td>
<td></td>
<td>Partner with engineering schools</td>
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Thank you for your attention
Social systems approach

• The adoption depends on the dynamics within the social systems of the user

• Social systems tend to 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

✓ Understand the mechanisms of the adoption