

# Communicating uncertain science of global change to policy makers

Speaker: Anthony Patt

First stated that the topic is mainly about why isn't science used, how to make science better used and policy makers observe how science is used?

- 1) How to use the information? How information is used to benefit people?
- 2) How to communicate the information?

For example: from the African map to give a forecast which could be useful in the future to the water management and maximize the economic from the dam? The water authority can use the forecast.

Give some models of how people use information and problems that you will encounter.

Then according to the PPT, state the outline of the lecture and offer different models:

## *1 Neo-classical economic model and the utility function curve*

Utility functions have a concave form, always growing with the increase of "money". Marginal utility decreases.

Question: do you take account of the risk-aversion?

Answer: maximum willingness to pay is higher than the actuarially fair value

But sometimes, this theory can not be used in some conditions such as insurance contracts. Do people use the information wisely and get their decision?

## *2 Behavioral economic models*

In order to explain people's behavior, then come to the behavioral economic models.

How people respond to uncertainty and why people do not want to buy flood insurance? How people assess uncertainty? How to evaluate information?

"uncertainty as a conflict"

"model-based uncertainty"

## *3 Psychological Models*

Then there is an example about when we don't have enough information, how do you figure out how to get the ball?

In general, fatalism influences people's behavior and some information is useful to solve fatalism.

## *4 Social and political models*

The description of four groups of people who have different attitudes: Fatalist, hierarchist, individualists, egalitarian

How people view nature and how many percents of GDP loss by climate change?

Why they thought climate change happens? Why they have less incentives to adapt?

Why the farmers do not want to resettle and do not trust that the flood will come and they need to resettle?

How people compare climate risk to the other risks?

Whether El Nino will happen? How to interpret the information? Whether the trust increases over time and how participation works in this area?

Problems: Confirmation bias

Problems: People focus on what they worry about

Problems: Overconfidence

Problems: Lack of trust

Strategies: Read this book: “Why Some Ideas Survive and Other Die” Chip Heath

Strategies: Build a new mental model

Strategies: Participatory decision support

Questions:

How much time are the costs to fight climate change spread out on?

A: If you read the 3<sup>rd</sup> assessment, it's 50 years, so small prices.

Do targets make a difference? A target to halt the decline of biodiversity makes sense?

Hard targets are useful?

A: A target may not be useful if it is not coupled to something more concrete – something to which people can grab on and say “yes, I am going to do this”. Concrete steps. The exact issue of targets came up in the end of a recent climate change conference. The prime minister of Denmark recognized the need to hold CO<sub>2</sub> emissions and the reductions necessary for industrial countries. A researcher pointed out that the 2, 3, 5 degrees are non-negotiable (like the 80%).

Informing people a lot, giving all the information, looking for the real motivations behind decisions. What do you think about giving all the information versus keeping some information private?

A: No, you should not hide information, in general. In Denmark there's a group that studies “progressive disclosure of information”.

Do you think decision making gets better if you inform someone on the reasons why they behave or decide in a certain way?

A: That's empirical. Probably it wouldn't help.

I would like to hear your comments on how you deal with strong religious beliefs – not based on reason.

A: It's a tricky question. Religion is a way of helping us feel comfortable with our world view. It's a series of beliefs that make our world easier to live with. If you give information that people can use to help sustain the world, they tend to see that as consistent with their beliefs.

Once you observe confirmation bias, how do you use that?

A: There's no good answer. You should try to work with the people on solving concrete problems. If it's a farmer, in denial about climate change, you should go and say “well, maybe it is, maybe it's not, but with this information perhaps it would be better if this year you would do this...”

Concerning, public participation, do you have experience with problems during the process?

A: This process can change power balances in the community. This can be harmful for the trust relationship with the researchers.

The level of public participation could be maximized?

A: Public participation is expensive and takes time. That's why some decision makers choose not to do so much of it.

Particular world views are over represented with certain groups of people?

A: The cultural theory includes different views. Within certain clusters you tend to have one of these world views. Stereotypes may be helpful in order to prepare yourself.

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