INFORMATION SHEET

Please read the following information carefully before proceeding with the survey. Click here to print a copy of the information sheet.

Project Title: Assessing attitudes and cognitive styles of stakeholders in environmental projects involving computer modelling

The purpose of this project is to better understand how to communicate scientific information related to environmental projects in which computer models are used.

This is important because effective communication of scientific knowledge and effective engagement with the public depends on the scientists being aware of and adapting to the range of views present within the community.

You will be asked questions regarding your worldviews, your preference for scientific communication, your cognitive styles and your attitudes towards science, complexity, the environment and computer models.

Researchers and organizations involved

This survey is funded by the CSIRO Marine and Atmospheric Division. Analysis of the information from this survey will be performed by the CSIRO.

What is involved in this survey?

The survey will be administered through the ORU. You have been specifically selected to participate in this survey because your thoughts and opinions are important to this research. Please note, you must be 18 years or over to participate.

The questionnaire consists of a series of questions. You will be asked to read and understand some information before answering a number of questions. The information is not long and the survey should take you between 30-40 minutes to complete.

Participation and withdrawal

Participation in this survey is completely voluntary and you are free to withdraw at any time. Your responses and personal information will be kept confidential. No external individual or organisation will have access to any of your personal information.

Risks

Participation in this survey should involve no physical or mental discomfort, and no risks

beyond those of everyday life. If, however, you should find any question or procedure to be invasive or offensive, you are free to omit answering that question. If you have any concerns about any aspects of the study, please contact Dr Fabio Boschetti (Tel 08 9333 6563 or Email Fabio.Boschetti@csiro.au).

Confidentiality

All information collected in this study will be confidential and your information will be assigned a random code. The data will only be seen by members of our research team and will be stored in a secured area that is not accessible to any individuals other than the research team.

How will my information be used?

The information you provide to us via the questionnaire will be used to write a scientific reports on the Australian public's preferences for climate change mitigation policies. The information will also be used to prepare manuscripts for academic publication. Your personal information will not be identifiable at any stage of the writing process.

Ethical clearance and contacts

This study has received ethical approval from the CSIRO Human Research Ethics Committee. We do not foresee any personal risks to you by taking part in this survey, however, if you have any questions, concerns or complaints, please contact Dr Fabio Boschetti on (08) 9333 6563 or the CSIRO Social Science Human Research Ethics Committee on CSSHREC@csiro.au

Thank you for your help with this very important research.

CONSENT FORM

Project Title: Assessing attitudes and cognitive styles of stakeholders in environmental projects involving computer modelling

Your involvement in this study is highly valued. Please review the information below in order to decide whether you wish to participate in the study.

I acknowledge that:

- I have agreed to participate in the project.
- I will not be identified personally at any stage of the project and all data will be kept confidential and only seen by researchers involved in the research project.
- Questions in regards to my participation have been answered to my satisfaction and I can obtain further information from the research team at any time during the project.
- I understand that this study has been cleared in accordance with the ethical review processes of the CSIRO. If I have any questions concerning my participation in the study I should feel free to contact the researchers involved. I understand that I can also speak to someone at the CSIRO not involved in the study, by contacting the CSIRO Social Science Human Research Ethics Committee on CSSHREC@csiro.au. I have been provided with the contact details of the investigating officers.
- I understand that I am able to stop taking part in this study at any time without penalty and without giving an explanation for my withdrawal.
- I understand that I may ask that part or all of my data be removed from the study without penalty or explanation. Data that is removed from the study will be deleted and not included in any of the further investigations.

If you do NOT consent to take part in this survey, please click here to exit

If you consent to take part in this survey, please click the 'Next' button below. By doing so, you implicitly consent to take this survey

1. Read each statement and decide whether you agree or disagree with each one of them.*
   There are no right or wrong answers so do not spend too much time deciding on an answer.
   The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I feel irritated when one person disagrees with what everyone else in a group believes.	○	○	○	○	○
I dislike unpredictable situations.	○	○	○	○	○
I prefer to think about small, daily projects to long-term ones.	○	○	○	○	○
I take risks regularly.	○	○	○	○	○
I enjoy thinking about ideas that challenge my views of the world.	○	○	○	○	○
I believe it is important for us to challenge our beliefs.	○	○	○	○	○
I try to anticipate and avoid situations where there is a likely chance I will have to think in depth about something.	○	○	○	○	○
I feel uncomfortable when I don't understand the reason why an event occurred in my life.	○	○	○	○	○
I find that establishing a consistent routine enables me to enjoy life more.	○	○	○	○	○

I often put myself in situations in which I can learn something new.

2. Read each statement and decide whether you agree or disagree with each one of them.*
   There are no right or wrong answers so do not spend too much time deciding on an answer.
   The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I view myself as a risk seeker.	○	○	○	○	○
I only think as hard as I have to.	○	○	○	○	○
I do not usually consult many different opinions before forming my own view.	○	○	○	○	○
I find that a well ordered life with regular hours suits my temperament.	○	○	○	○	○
I find little satisfaction in deliberating hard and for long hours.	○	○	○	○	○
I would rather do something that requires little thought than something that is sure to challenge my thinking abilities.	○	○	○	○	○
I like to experiment with new ideas, even if they turn out later to be a total waste of time.	○	○	○	○	○
I dislike it when a person's statement	○	○	○	○	○

could mean many
different things.

I don't like to have the responsibility of handling a situation that requires a lot of thinking.	○	○	○	○	○
I enjoy having a clear and structured mode of life.	○	○	○	○	○

3. Read each statement and decide whether you agree or disagree with each one of them.*
    There are no right or wrong answers so do not spend too much time deciding on an answer.
    The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I like to find out why things happen.	○	○	○	○	○
I enjoy spending time discovering new things.	○	○	○	○	○
I would quickly become impatient and irritated if I would not find a solution to a problem immediately.	○	○	○	○	○
When I have made a decision, I feel relieved.	○	○	○	○	○
I don't like to be with people who are capable of unexpected actions.	○	○	○	○	○
I prefer to avoid risks.	○	○	○	○	○
I really dislike not knowing what is going to happen.	○	○	○	○	○

If I do not understand something, I find out about it.	○	○	○	○	○
I do not take risks with my health.	○	○	○	○	○
I usually view risks as a challenge.	○	○	○	○	○

4. Read each statement and decide whether you agree or disagree with each each one of them.*
   There are no right or wrong answers so do not spend too much time deciding on an answer.
   The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
When I am confronted with a problem, I'm dying to reach a solution very quickly.	○	○	○	○	○
I dislike questions which could be answered in many different ways.	○	○	○	○	○
I don't like to go into a situation without knowing what I can expect from it.	○	○	○	○	○
Thinking is not my idea of fun	○	○	○	○	○
I would prefer complex to simple problems	○	○	○	○	○
Safety first.	○	○	○	○	○
I don't like situations that are uncertain.	○	○	○	○	○

5. How much do you think humans contribute to climate change?*

   ○   0%

○ 15%

○ 30%

○ 45%

○ 60%

○ 75%

○ 90%

○ 100%

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6. Read each statement and decide whether you agree or disagree with each one of them.*
There are no right or wrong answers so do not spend too much time deciding on an answer.
The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I only act to satisfy immediate concerns, figuring the future will take care of itself.	○	○	○	○	○
My behaviour is only influenced by the immediate (i.e., a matter of days or weeks) outcomes of my actions.	○	○	○	○	○
I think it is important to take warnings about negative outcomes seriously even if the negative outcome will not occur for many years.	○	○	○	○	○
I generally ignore warnings about possible future problems because I think the problems	○	○	○	○	○

will be resolved
before they reach
crisis level.

I think that sacrificing now is usually unnecessary since future outcomes can be dealt with at a later time.	○	○	○	○	○
I only act to satisfy immediate concerns, figuring that I will take care of future problems that may occur at a later date.	○	○	○	○	○
Since my day to day work has specific outcomes, it is more important to me than behaviour that has distant outcomes.	○	○	○	○	○

7. Read each statement and decide whether you agree or disagree with each one of them.*
   There are no right or wrong answers so do not spend too much time deciding on an answer.
   The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
The natural environment will become unstable if humans exceed the limits identified by experts.	○	○	○	○	○
Individuals should follow environmental rules and regulations regardless of whether they think it's fair.	○	○	○	○	○
Ultimately, there's nothing individuals	○	○	○	○	○

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
can do to manage or change the natural environment.					
Technology can solve environmental problems.	○	○	○	○	○
The natural environment is unpredictable.	○	○	○	○	○
The natural environment is able to cope with a lot more than it is given credit for.	○	○	○	○	○
The natural environment can be managed if there are clear rules about what is allowed.	○	○	○	○	○
The Government and scientists should be responsible for managing the natural environment.	○	○	○	○	○
The natural environment is strong and stable, but only up to a certain point.	○	○	○	○	○
Sustainable development is the most rational strategy for managing the natural environment.	○	○	○	○	○

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8. Read each statement and decide whether you agree or disagree with each one of them.*
   There are no right or wrong answers so do not spend too much time deciding on an answer.
   The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree

Conservation and protection is the most rational strategy for managing the natural environment.	○	○	○	○	○
The natural environment is in a constant state of change with things only existing for a short time.	○	○	○	○	○
The natural environment is capable of recovering from any damage humans may cause.	○	○	○	○	○
There are plenty of resources for humans to use in the natural environment.	○	○	○	○	○
The natural environment can be harsh and unfair.	○	○	○	○	○
Individuals should have freedom of choice regardless of the environmental impacts.	○	○	○	○	○
If we push the natural environment beyond what it can cope with there will be no turning back.	○	○	○	○	○
Doing nothing is the most rational strategy for managing the natural environment.	○	○	○	○	○
Economic markets are more than capable of managing the natural environment sustainably.	○	○	○	○	○
Reducing the amount of environmental regulations will allow society to benefit and grow.	○	○	○	○	○

9. Read each statement and decide whether you agree or disagree with each one of them.*
   There are no right or wrong answers so do not spend too much time deciding on an answer.
   The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
If the balance of the natural environment is upset the whole system will collapse.	○	○	○	○	○
When pushed beyond the limits identified by experts the natural environment will not recover.	○	○	○	○	○
Humans are part of the natural environment, not separate from it.	○	○	○	○	○
Human industry and technology has not caused significant damage to the natural environment.	○	○	○	○	○
Often there's no explanation or reason for the things that happen in the natural environment.	○	○	○	○	○
We all have a moral obligation to protect the environment and consume fewer resources.	○	○	○	○	○
The natural environment can only be protected if there are large changes in human behaviour and society.	○	○	○	○	○

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Attempts to manage the natural environment usually end in failure.	○	○	○	○	○
The natural environment is manageable within the known limits.	○	○	○	○	○
Economic competition and deregulation is the most rational strategy for managing the natural environment.	○	○	○	○	○

10. Read each statement and decide whether you agree or disagree with each one of them.*
There are no right or wrong answers so do not spend too much time deciding on an answer.
The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Environmental rules and regulations are just a way for the authorities and environmentalists to control individuals.	○	○	○	○	○
There's no point wasting time, energy and resources on trying to manage the natural environment.	○	○	○	○	○
The natural environment is strong and can easily adapt to human activity.	○	○	○	○	○
The natural environment can remain healthy if we follow environmental regulations and laws.	○	○	○	○	○

All things in the natural environment are interconnected and dependent on each other.	○	○	○	○	○
Environmental regulations often result in outcomes that are unfair to the natural environment.	○	○	○	○	○
Authorities managing the natural environment frequently make unethical decisions.	○	○	○	○	○
The natural environment operates in strange and unknown ways.	○	○	○	○	○
Humans can't control what happens in the natural environment.	○	○	○	○	○
The natural environment is fragile and the balance can be easily upset.	○	○	○	○	○

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11. Please indicate how you identify your political views.*

   ○ Very liberal

   ○ Moderately liberal

   ○ Neither liberal nor conservative

   ○ Moderately conservative

   ○ Very conservative

12. Read each statement and decide whether you agree or disagree with each one of them.*
    There are no right or wrong answers so do not spend too much time deciding on an answer.
    The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
Being kind to bludgers or criminals will only encourage them to take advantage of your weakness, so it is best to use a firm, tough hand when dealing with them.	○	○	○	○	○
In setting priorities, we must consider all groups.	○	○	○	○	○
Our customs and national heritage are the things that have made us great, and certain people should be made to show greater respect for them.	○	○	○	○	○
Group equality should be our ideal.	○	○	○	○	○
Our prisons are a shocking disgrace. Criminals are unfortunate people who deserve much better care, instead of so much punishment.	○	○	○	○	○
Obedience and respect for authority are the most important virtues children should learn.	○	○	○	○	○
Superior groups should dominate inferior groups.	○	○	○	○	○
We should not push for equality between groups.	○	○	○	○	○
Organisations like the army have a pretty unhealthy effect upon men because they require strict	○	○	○	○	○

obedience of commands from supervisors.					
The courts are right in being easy on drug offenders. Punishment would not do any good in cases like these.	○	○	○	○	○

13. What are the 5 issues which concern you the most about the future Australia in 2050?*

14. What 5 words or phrases would you use to describe Australia in an ideal 2050? *

15. What 5 words or phrases would you use to describe Australia in the worst imaginable 2050?*

16. What decisions and actions are we making now that may create a worse future for Australians in 2050?*

17. What decisions and actions are we making now that may create a better future for Australians in 2050?*

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[text area with scrollbars]
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18. How safe do you think Australia will be in 2050?*

○ Much less safe than now

○ Less safe than now

○ More or less as safe as now

○ Safer than now

○ Much safer than now

19. How honest do you think Australians will be in 2050?*

○ Much less honest than now

○ Less honest than now

○ More or less as honest as now

○ More honest than now

○ Much more honest than now

20. How friendly do you think Australians will be in 2050?*

○ Much less friendly than now

○ Less friendly than now

○ More or less as friendly as now

○ Friendlier than now

○ Much friendlier than now

21. How skilled do you think the Australian society will be in 2050?*

○ Much less skilled than now

○ Less skilled than now

○ More or less as skilled as now

○ More skilled than now

○ Much more skilled than now

22. How do you think the standards of living in Australia will be in 2050?*

○ Much lower than now

○ Lower than now

○ More or less the same as now

○ Higher than now

○ Much higher than now

23. If it takes 5 machines 5 minutes to make 5 widgets, how long would it take 100 machines to make 100 widgets?
(If you think the question is too hard, simply skip this question)

24. In a lake, there is a patch of lily pads. Every day, the patch doubles in size. If it takes 48 days for the patch to cover the entire lake, how long would it take for the patch to cover half of the lake?
(If you think the question is too hard, simply skip this question)

25. A bat and a ball together cost 110 cents. The bat costs 100 cents more than the ball. How much does the ball cost?
(If you think the question is too hard, simply skip this question)

26. Read each statement and decide whether you agree or disagree with each each one of them.*
There are no right or wrong answers so do not spend too much time deciding on an answer.
The first thing that comes to mind is probably the best response.

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I strongly believe in science	○	○	○	○	○
I believe science can provide solutions to environmental problems.	○	○	○	○	○
I do not believe science can provide solutions to social problems.	○	○	○	○	○
Science has caused more problems than it has resolved.	○	○	○	○	○
I am reluctant to use technology (including computers and models) to address complex natural and social problems.	○	○	○	○	○

27. What best describes your thoughts about climate change?*

○ I don't think that climate change is happening

○ I have no idea whetherclimate change is happening or not

○ I think that climate change is happening, but it's a natural fluctuation in Earth's temperatures

○ I think that climate change is happening, and I think that humans are largely causing it

28. Which of the following statements best matches you?*

- ○ I do not know what computer modelling is
- ○ I have a rough idea of what computer modelling is
- ○ I have seen computer modelling at work or its results in some occasions
- ○ I am familiar with computer modelling

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Attitude to environmental projects 3

29. Read each statement and decide whether you agree or disagree with each each one of them.*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I trust the results of computer models	○	○	○	○	○
The results of computer models can help with making decisions about important matters	○	○	○	○	○
Using computer models can teach how real systems work	○	○	○	○	○
Using computer models is like playing a game - it doesn't mean anything in the real world	○	○	○	○	○
I would like to learn how to do computer modelling	○	○	○	○	○
Computer modelling will become more and more common in the future	○	○	○	○	○

30. We all need information to form our opinion about environment and social problems; how much do you trust the information provided by*

	A lot	Reasonably well	I am not sure	Not much	Not at all
Scientists	○	○	○	○	○
Environmental organisations	○	○	○	○	○
Federal Government	○	○	○	○	○
Local Government	○	○	○	○	○
Family and friends	○	○	○	○	○
Your doctor	○	○	○	○	○
People from your community	○	○	○	○	○
Television, Newspapers & Internet	○	○	○	○	○
Books & other publications	○	○	○	○	○

31. Read each statement and decide whether you agree or disagree with each each one of them.*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
I am personally committed to preventing environmental problems	○	○	○	○	○
I am personally committed to actively address environmental	○	○	○	○	○

problems and make improvements				
Environmental problems are not as important as many other problems facing the world today	○	○	○	○	○

32. I am concerned about environmental problems because of the potential consequences on*

	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree
My wealth	○	○	○	○	○
My lifestyle	○	○	○	○	○
My health	○	○	○	○	○
My community	○	○	○	○	○
The World	○	○	○	○	○

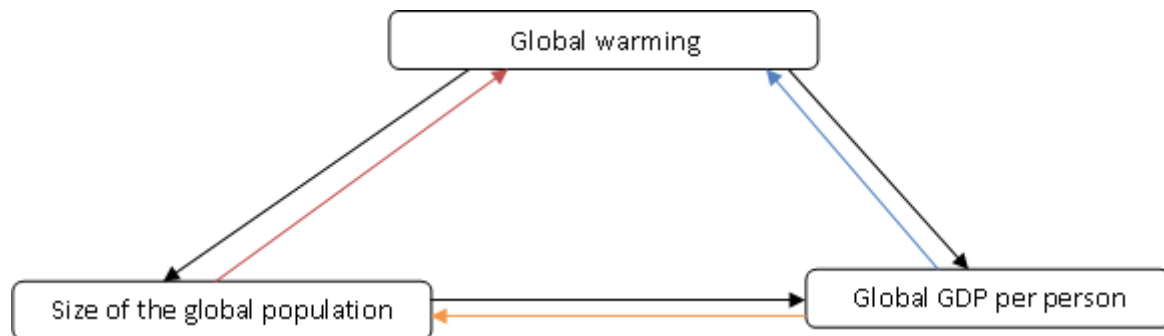Mental model used to reason about climate change

Consider a global system made up of three variables:

1) **The global economy** (represented by the global Growth Domestic Product (GDP) per person. As the global GDP per person is the value of all the goods and services produced in the world divided by the number of people, it indicates the strength of the economic activity)

2) **The size of the global population**

3) The state of the **climate** (represented by the global warming).

We assume that:

Impact of the global economy on Population:

When GDP per person increases, the birth rate decreases. It is empirically shown (at least in developed countries) that the wealthier people become the less children they have. This in turns may lead to population decline.

Impact of the global economy on the Environment:

When GDP per person increases, energy use per capita increases. As a result, the amount of CO_2 in the atmosphere increases.

Impact of Population on the Environment:

When the global population increases, the amount of CO_2 in the atmosphere increases.

33. These three relationships come from reliable observations and as there is little debate on them, we assume they are correct for this exercise.*
How much do you trust these statements?

○ Not at all

○ Not much

○ I am not sure

○ Reasonably well

○ A lot

34. Would you like to comment on these statements?

35.

Relationships affected by beliefs:

However, there is no consensus on the following issues. Please give your opinion for each of them:

Maximum number of people who could live on the Earth (Earth carrying capacity):
We all know the Earth is finite in size and resources. Thus, it can't support an infinite number of human beings. In your opinion, what is the maximum number of people who could live on the Earth? (In 2012, there are approximately 7 billion people in the World)

○ 15 billion

○ 27 billion

○ 40 billion

○ I'm skipping the question

36.

Critical temperature:
We believe that if global warming reaches a certain value (the "critical temperature value") the human activity will be affected and the GDP per person will decrease. However, scientists don't agree on the value of this critical temperature.

- The most optimistic believe that we won't see any effect on the economy until global warming reaches 5°C.
- The most pessimistic believe that climate change will start to affect the economy from a global warming of 1.7°C

In your opinion, what statement is the most likely?
Climate change will start to affect the economy from a global warming of:

○ 1.7°C

37.

Climate sensitivity:

Scientists don't agree on how much the rise of CO2 in the atmosphere affects the global temperature.

- The most optimistic believe that if the amount of CO2 in the atmosphere doubled, global warming would be 1°C.
- The most pessimistic believe that if the amount of CO2 in the atmosphere doubled, global warming would be 3.4°C.

In your opinion, if the amount of CO2 in the atmosphere doubled, global warming would be:

○ 1°C (weak sensitivity)

○ 2.2°C (mild sensitivity)
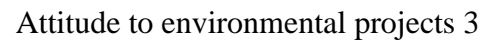
○ 3.4°C (strong sensitivity)

○ I'm skipping the question

Relationships affected by opinions

According to your beliefs regarding the parameters above, give your opinion about the following policies:

38. We should reduce the human global emissions of CO2 by:

○ There is no need to reduce our emissions

○ 5%

○ 45%

○ 90%

○ I'm skipping the question

39. 90% of the goal chosen above should be achieved by:

○ 2020

○ 2060

○ 2100

○ I'm skipping the question

40. If we manage to reach the goal you chose, how much do you think it will cost:

○ 0% of the GDP

○ 10% of the GDP

○ 20% of the GDP

○ I'm skipping the question

41. Assuming the policies you chose are implemented, what do you think it will happen by 2100 compare to nowadays?

	Strongly decrease	Slightly decrease	Stay stable	Slightly increase	Strongly increase	I'm skipping the question
The global population will:	○	○	○	○	○	○
The global GDP per person will:	○	○	○	○	○	○
The global temperature will:	○	○	○	○	○	○

Demographics

42. Please indicate your age. *

    ○ 18-30

    ○ 31-45

    ○ 46-60

    ○ 61-75

    ○ >75

43. What is your gender?*

    ○ Male

    ○ Female

44. What is the highest level of education you have achieved? *

    ○ Primary School

    ○ High School

    ○ Trade/TAFE

    ○ Tertiary Undergraduate

    ○ Tertiary Postgraduate

45. Do you consider yourself an environmentalist?*

    ○ No, not at all

    ○ No, not much

    ○ A little

    ○ Yes

    ○ Yes, definitely

Attitudes to environmental projects

Survey Completed

Thank you for completing the survey!

Please click below to complete the survey

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