

Co-producing Infographics for Climate Action in Aotearoa New Zealand

Dr. Stephen Flood

Wed May18th, 2016

The Australian-German Climate & Energy College



Roadmap of the Seminar

- Introduction to *the topic*
- Examples of infographics from *Climate Change*
- What makes *an effective infographic*
- *Effective Communication* on Climate Change
- Case study project (New Zealand)
- What we hope *outcomes* will achieve
- Summary

Introduction to *the topic*

What are we discussing?

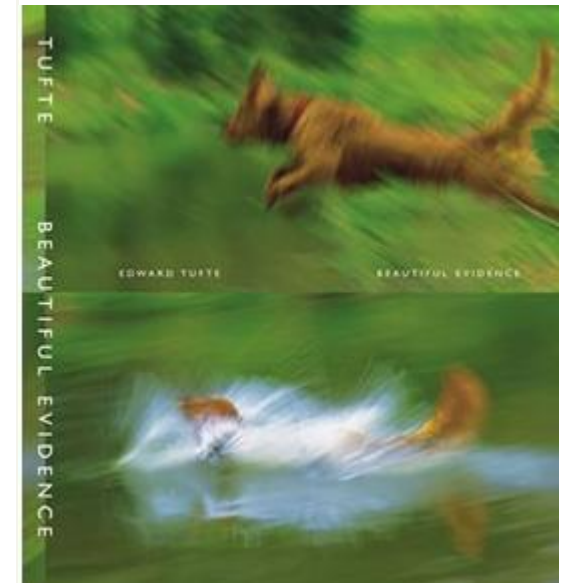
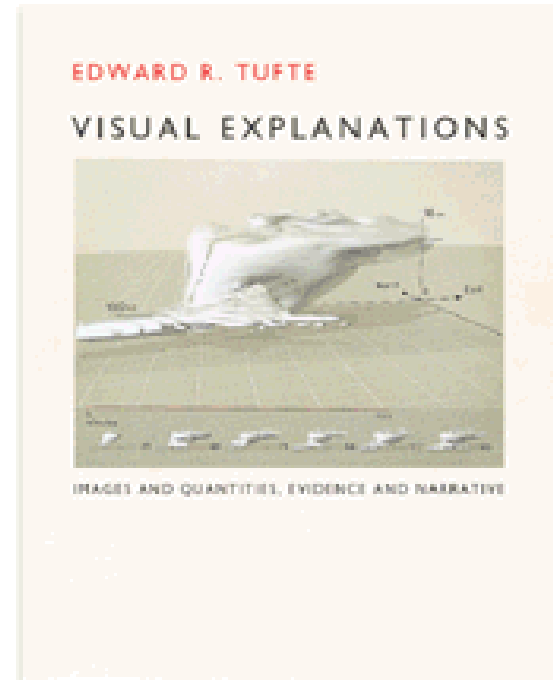
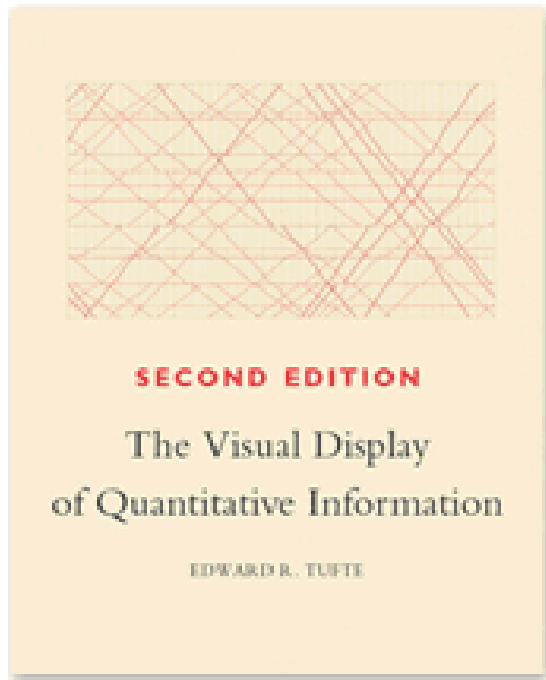
An infographic (information graphic) is a representation of information in a graphic format designed to make the data easily understandable at a glance.

Edward Tufte

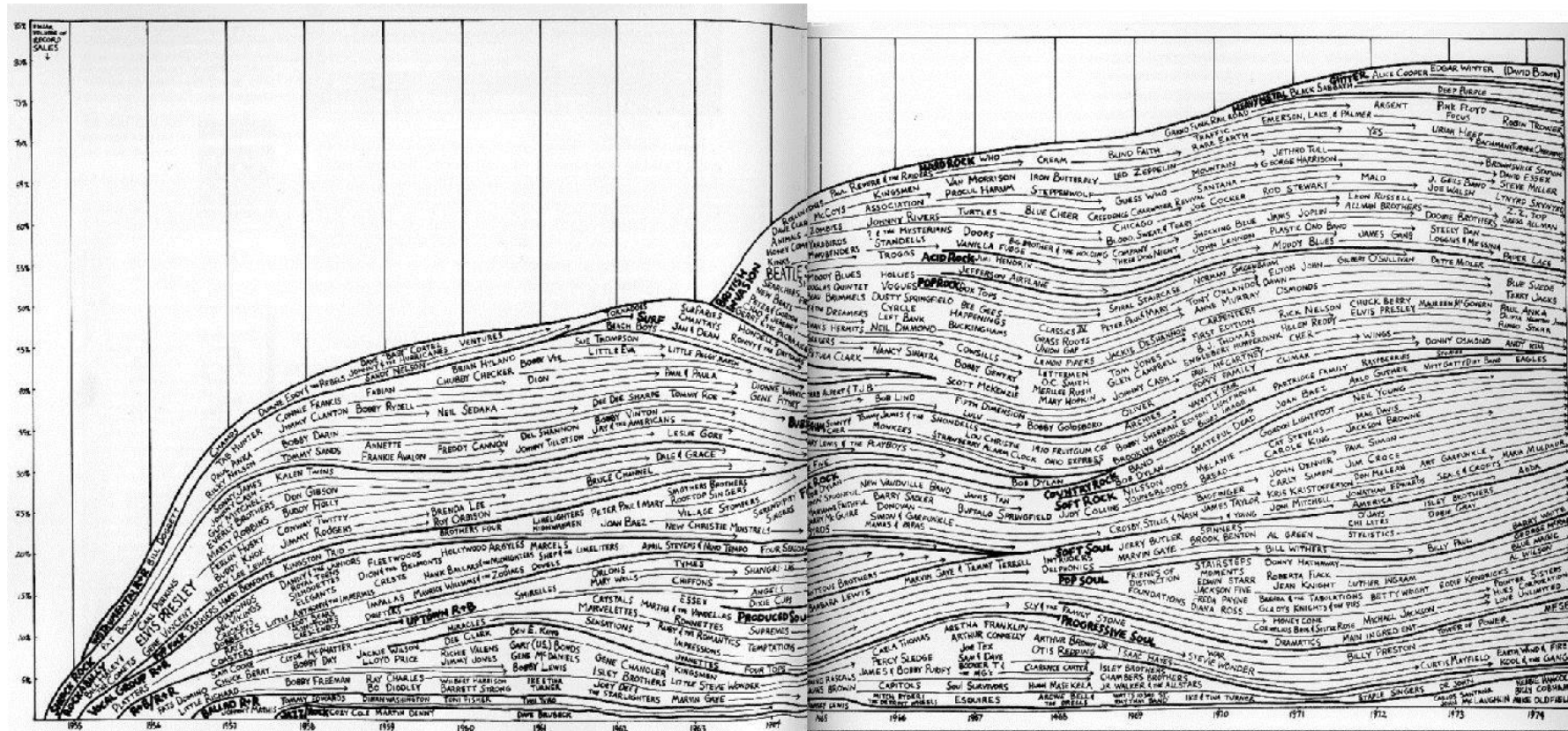


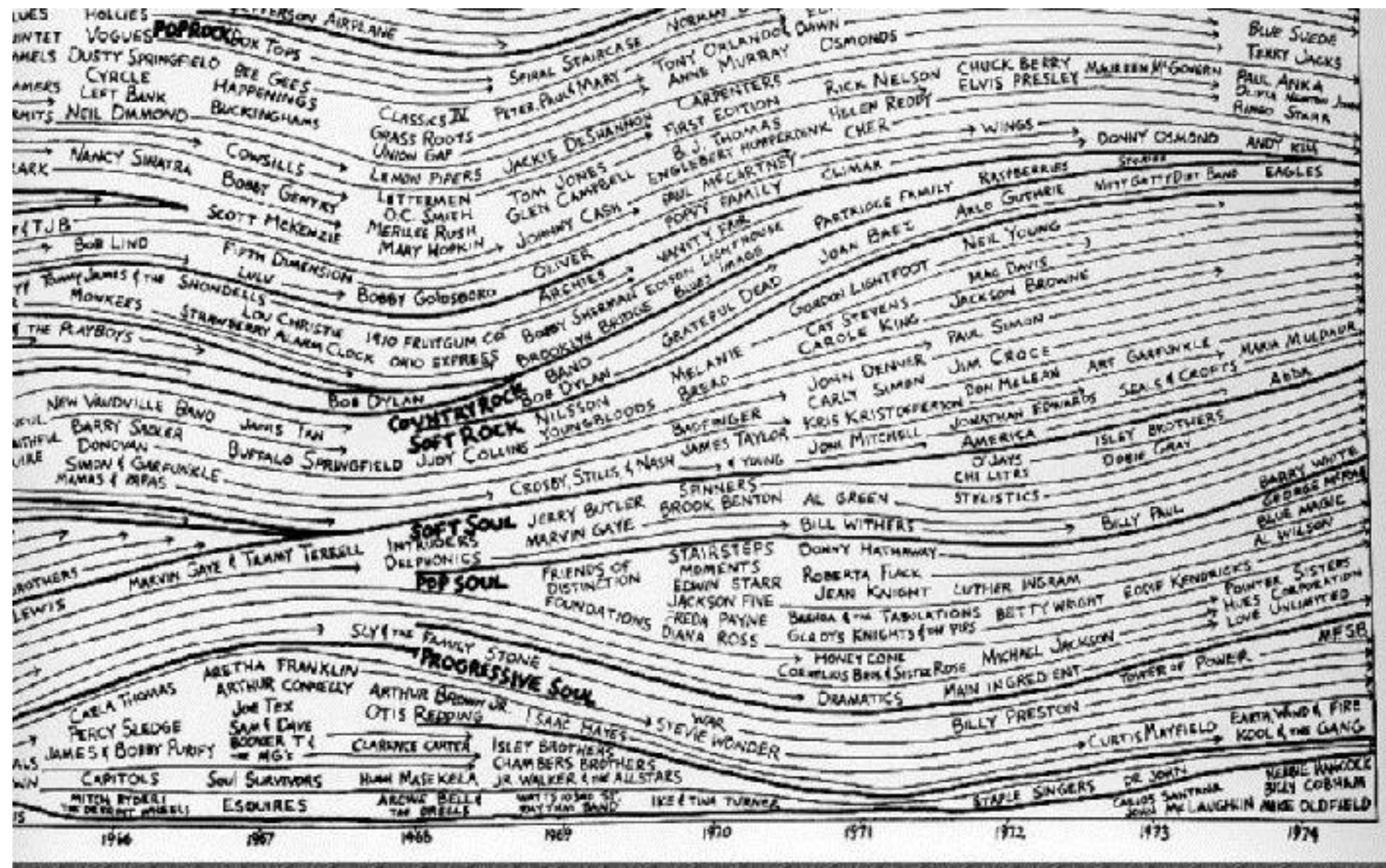
- American statistician and professor emeritus of political science, statistics, and computer science at Yale University
- Noted for his writings on information design and as a pioneer in the field of data visualization

“To tell your story, and tell it credibly, you must establish causality.”



The History of Rock 'n' Roll, 1955-74, from Edward Tufte's "Beautiful Evidence"





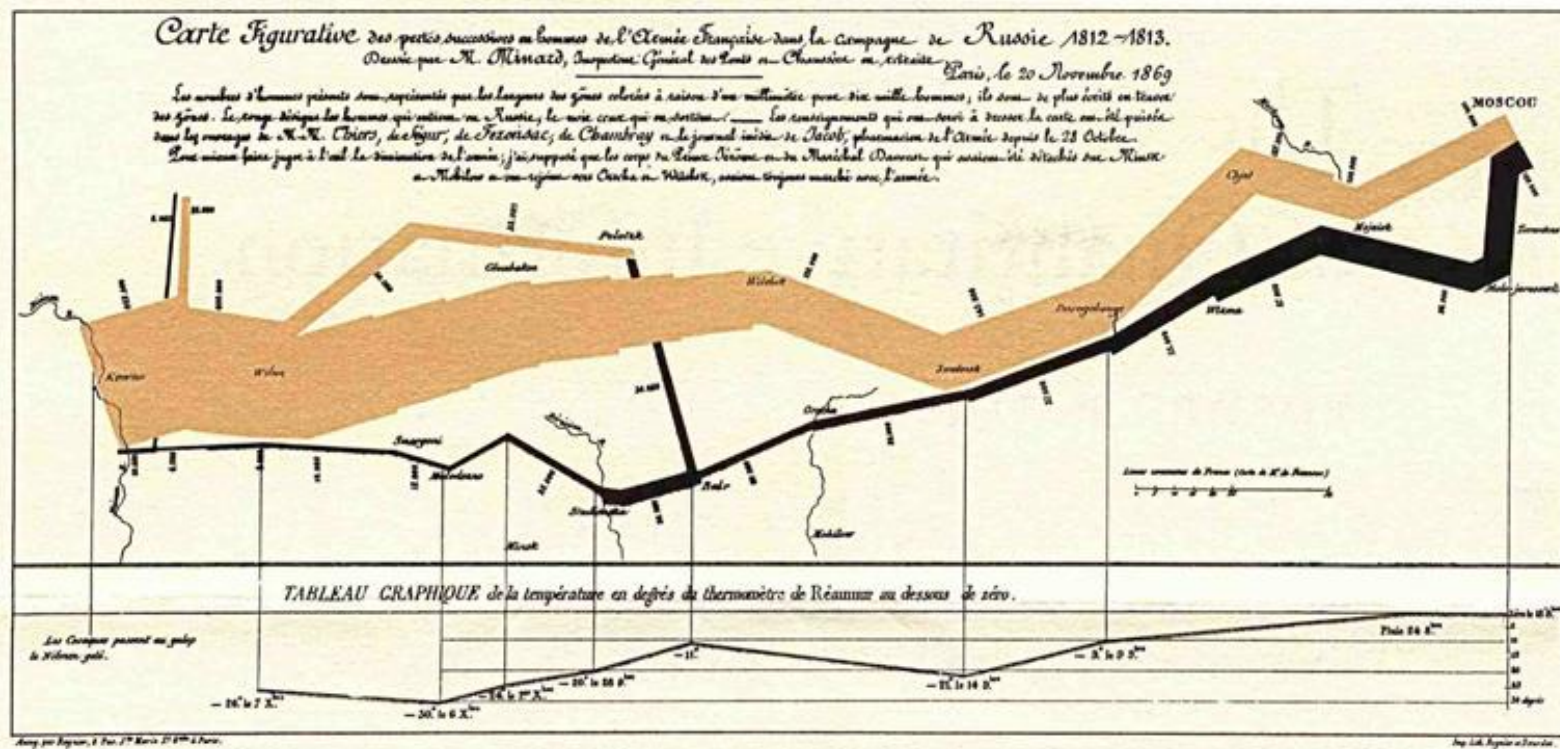
Napoleon's March to Moscow

A drawing made by Charles Joseph Minard in 1869, as one of the most effective graphic illustrations ever created.

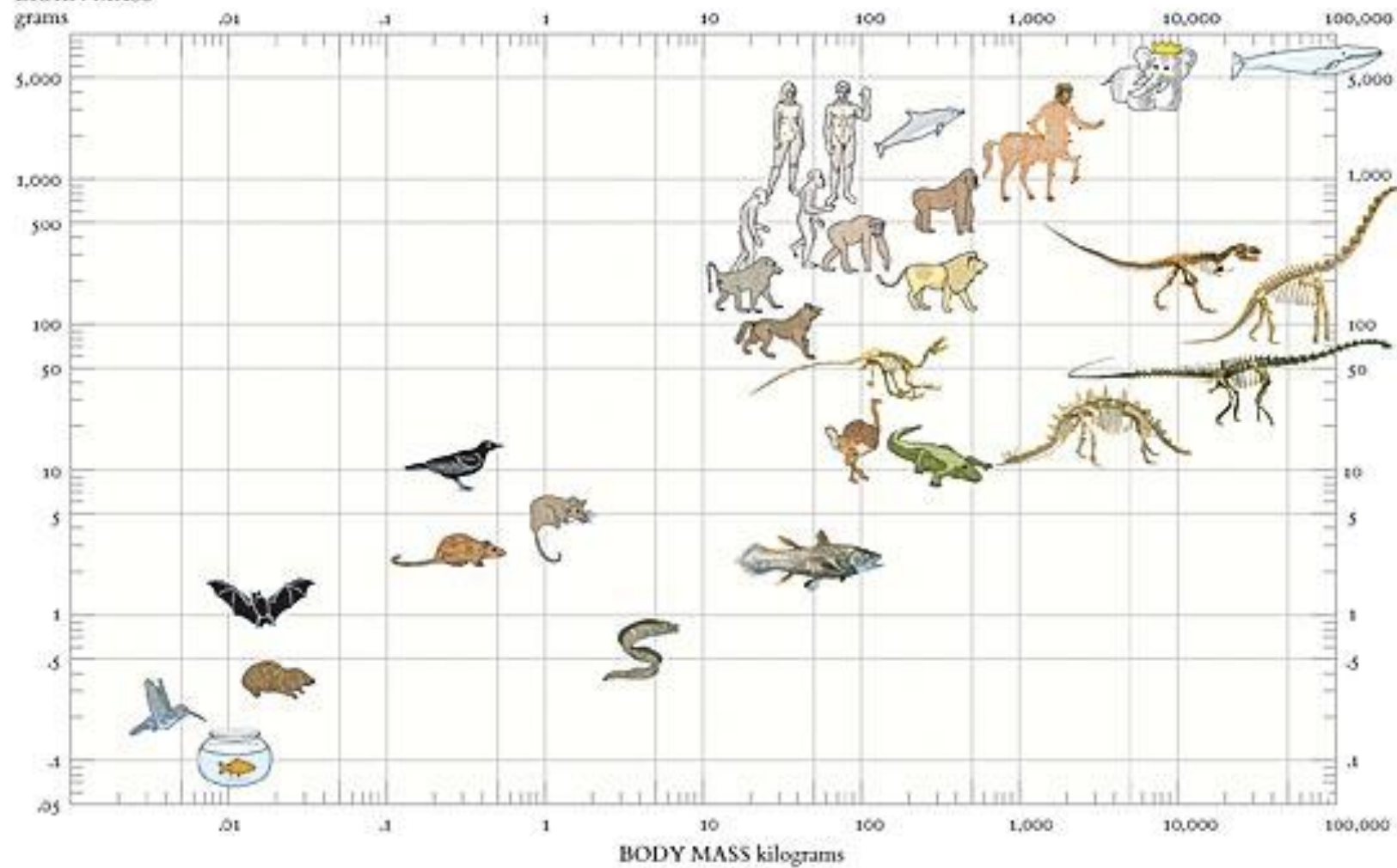
“Minard's presentation tells a rich, flowing story,” describes Tufte.

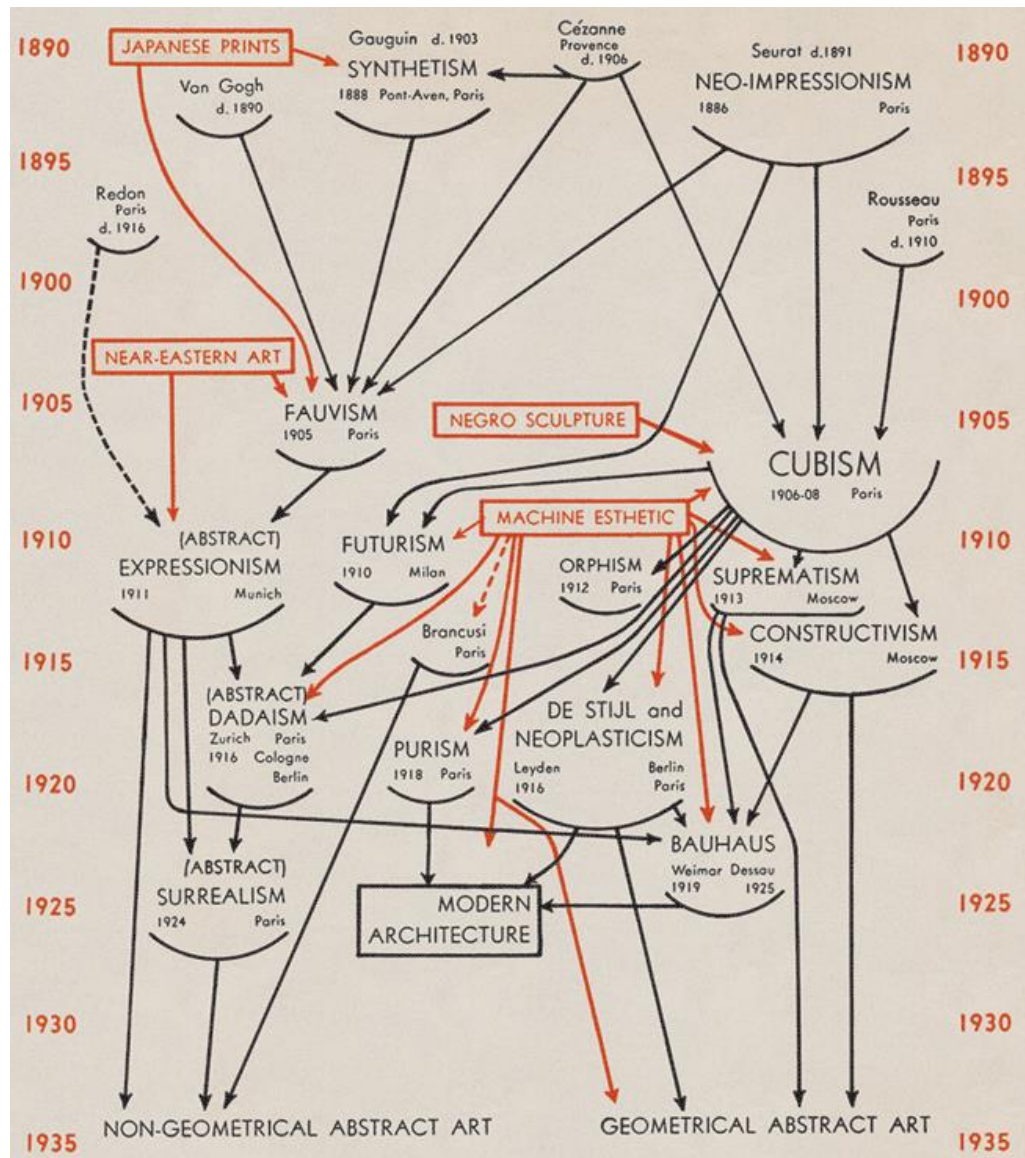
The chart, which depicts the losses of Napoleon's army during its 1812 invasion of Russia, begins on the left-hand side with 442,000 men en route to Moscow.

The black line, which moves in the reverse direction, signifies its retreat and the horrific losses.



BRAIN MASS





CUBISM AND ABSTRACT ART

How to Focus

by Anna Vital



95% of people say they struggle to focus

keep food at your desk



glucose helps your brain focus

turn off the phone



most phone calls are not urgent

get a good chair



there is a reason bosses don't sit in cheap chairs

time yourself



and see how much you did in 1 hour
reward yourself

shut off everything



that you are not really using

clear your desk



completely

put on headphones



classical music or no music is best for focusing

make a list



make it short



if you get focused, be proud of yourself

frame a picture of your goal



and look at it every morning before work

bring your pet with you



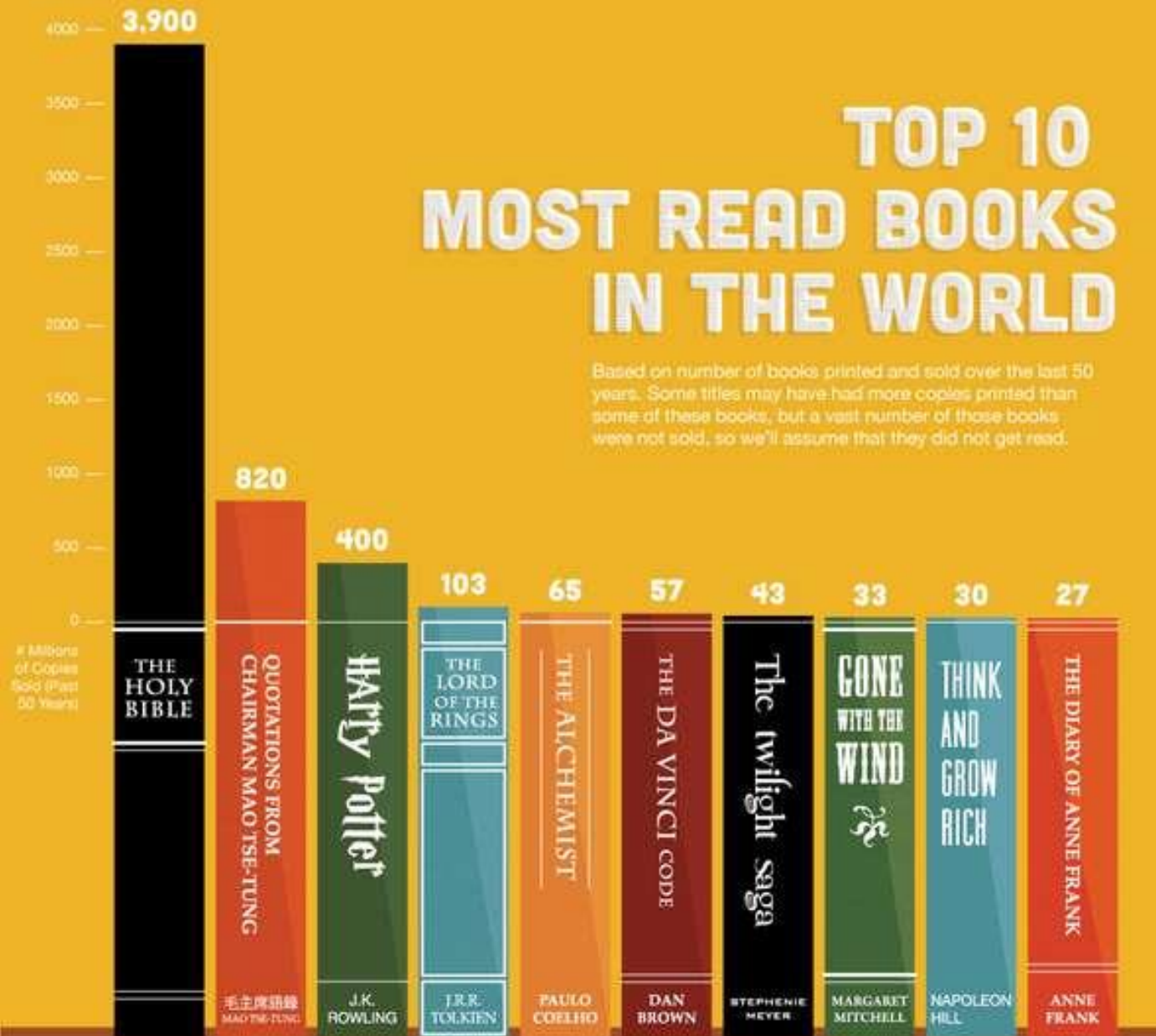
they help you focus



get more infographics at fundersandfounders.com

TOP 10 MOST READ BOOKS IN THE WORLD

Based on number of books printed and sold over the last 50 years. Some titles may have had more copies printed than some of these books, but a vast number of those books were not sold, so we'll assume that they did not get read.



JAREDFANNING.COM

Source: squidoo.com/mostreadbooks

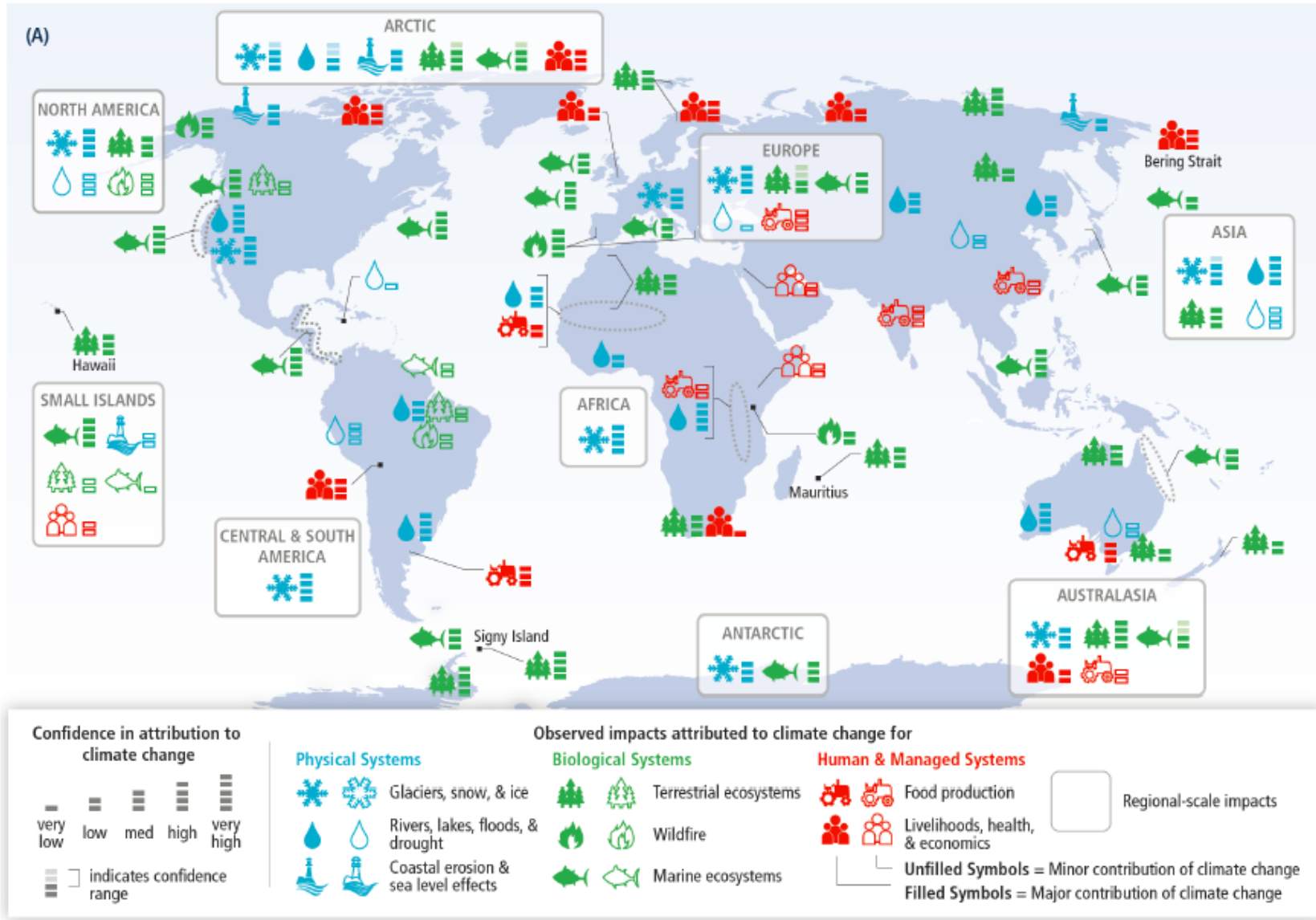


The 17 Sustainable Development Goals



Examples of infographics from *Climate Change*

Observed Impacts Attributed to Climate Change in AR5



Climate change, food and farming: 2010s

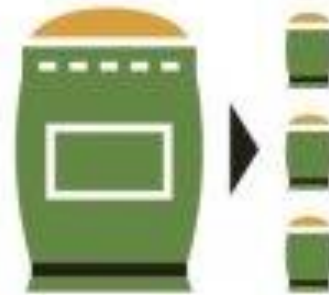
According to the Fifth Assessment Report of the IPCC, climate change is affecting food and farming now

Adaptation is happening, but is not enough

Farmers are:



Changing planting dates



Adjusting marketing arrangements



Using different crop cultivars and species

SOURCE: Vermeulen, 2014

The future of food and farming: 2050s



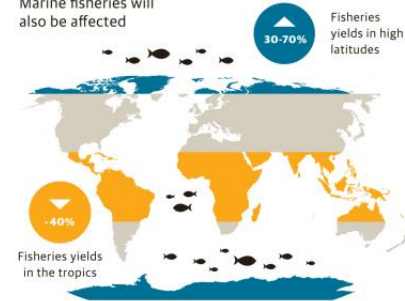
By 2050, climatic impacts on food security will be unmistakable. There are likely to be 9 billion people on the planet, most people will live in cities and demand for food will increase significantly.

Widespread impacts on food and farming are highly likely

Average decline in yields for eight major crops across Africa and South Asia

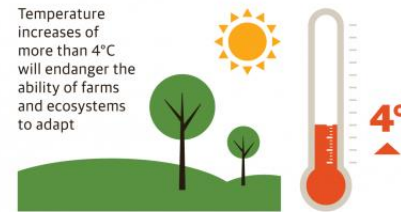


Marine fisheries will also be affected

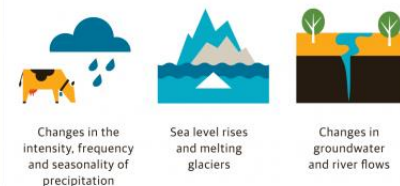


Heat and water may pass critical thresholds

Temperature increases of more than 4°C will endanger the ability of farms and ecosystems to adapt



Water cycles will be very different and less predictable



We will need major innovations in how we eat and farm

To cope with climatic changes, we may need to consider:



Completely different diets



Shifting production areas for familiar crops, livestock and fisheries



New approaches to managing waste, water and energy in food supply chains



Restoring degraded farmlands, wetlands and forests

SOURCES: Porter, J. R., Xie, L., Challinor, A., Cochrane, K., Howden, M., Iqbal, M. M., Lobell, D., Travasso, M. I. 2014. Food Security and Food Production Systems. In: Climate Change 2014: Impacts, Adaptation, and Vulnerability. Contribution of Working Group II to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change. <http://www.ipcc-wg2.gov/>
With data from Cheung et al 2010, Cochrane et al 2009, Knox et al 2012



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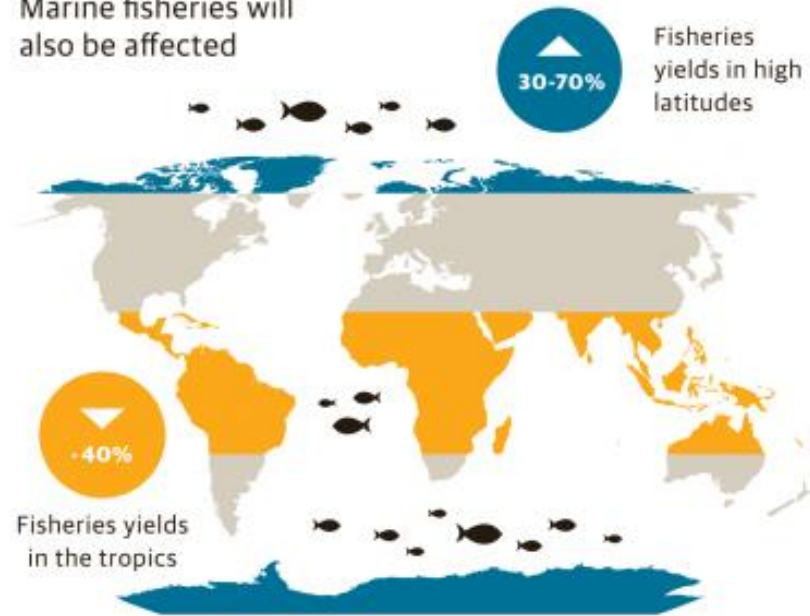


Widespread impacts on food and farming are highly likely

Average decline in yields for eight major crops across Africa and South Asia



Marine fisheries will also be affected



Heat and water may pass critical thresholds

Temperature increases of more than 4°C will endanger the ability of farms and ecosystems to adapt



Water cycles will be very different and less predictable



Changes in the intensity, frequency and seasonality of precipitation



Sea level rises and melting glaciers



Changes in groundwater and river flows

We will need major innovations in how we eat and farm

To cope with climatic changes, we may need to consider:



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RESEARCH PROGRAM ON
Climate Change,
Agriculture and
Food Security



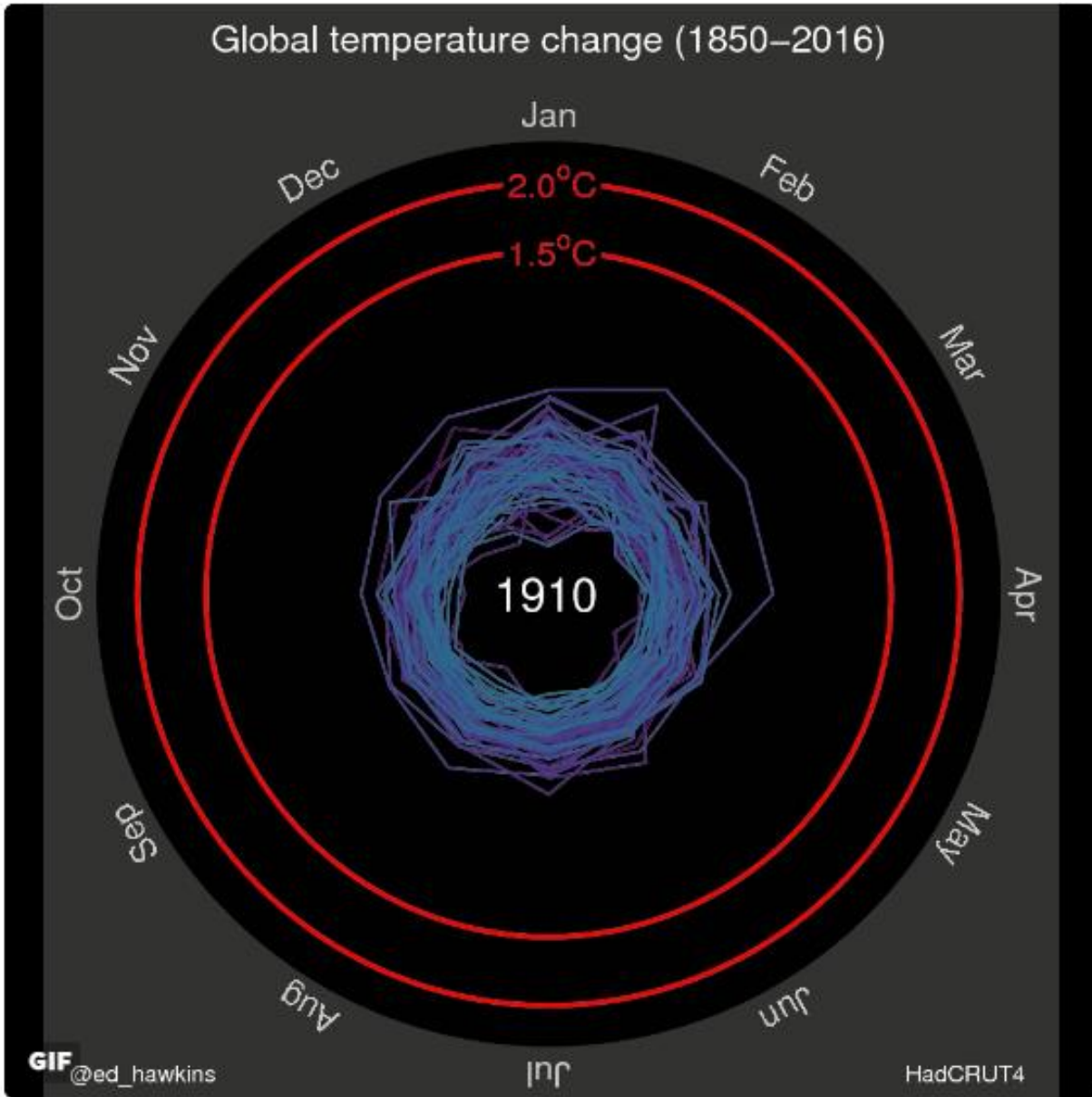


In the fall of 2009, The Museum of Modern Art and MoMA PS1 selected five interdisciplinary teams of architects, engineers and landscape designers to propose solutions to the effects of climate change on New York's waterfront.

The resulting proposals, exhibited at MoMA in 2010 in the exhibition *Rising Currents: Projects for New York's Waterfront*, emphasize "soft" infrastructure interventions that would make New York City and its surrounding areas more ecologically sound and more resilient in responding to rising sea levels and storm surges.

MoMA Rising Currents





https://uploads.guim.co.uk/2016/05/10/5_9_16_Andrea_Temp_SpiralEdHawkins.gif

What makes *an effective infographic*

What Makes an Effective Infographic

- **A Targeted Audience**
- **A Compelling Theme**
- **Actionable *Data***
- **Effective Graphics**
 - **Keep Graphics Simple**
 - **Tell story so it flows**
 - **Don't be too repetitive**
 - **Make them readable**



Effective Communication on Climate
Change

Effective Communication on Climate Change

Effective climate change communication closely linked with overcoming psychological barriers that limit adaptation and mitigation actions

➤ Robert Gifford and his *Dragons of Inaction*



Prof of Psychology and
Environmental Studies at
the University of Victoria,
British Columbia, Canada



Climate Change Starts Here

Effective Communication on Climate Change

General Psychological Barriers

Limited Cognition

Effective Communication on Climate Change

General Psychological Barriers

Limited Cognition

Ideologies

Effective Communication on Climate Change

General Psychological Barriers

Limited Cognition

Perceived Risks

Ideologies

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General Psychological Barriers

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Comparisons
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Effective Communication on Climate Change

General Psychological Barriers

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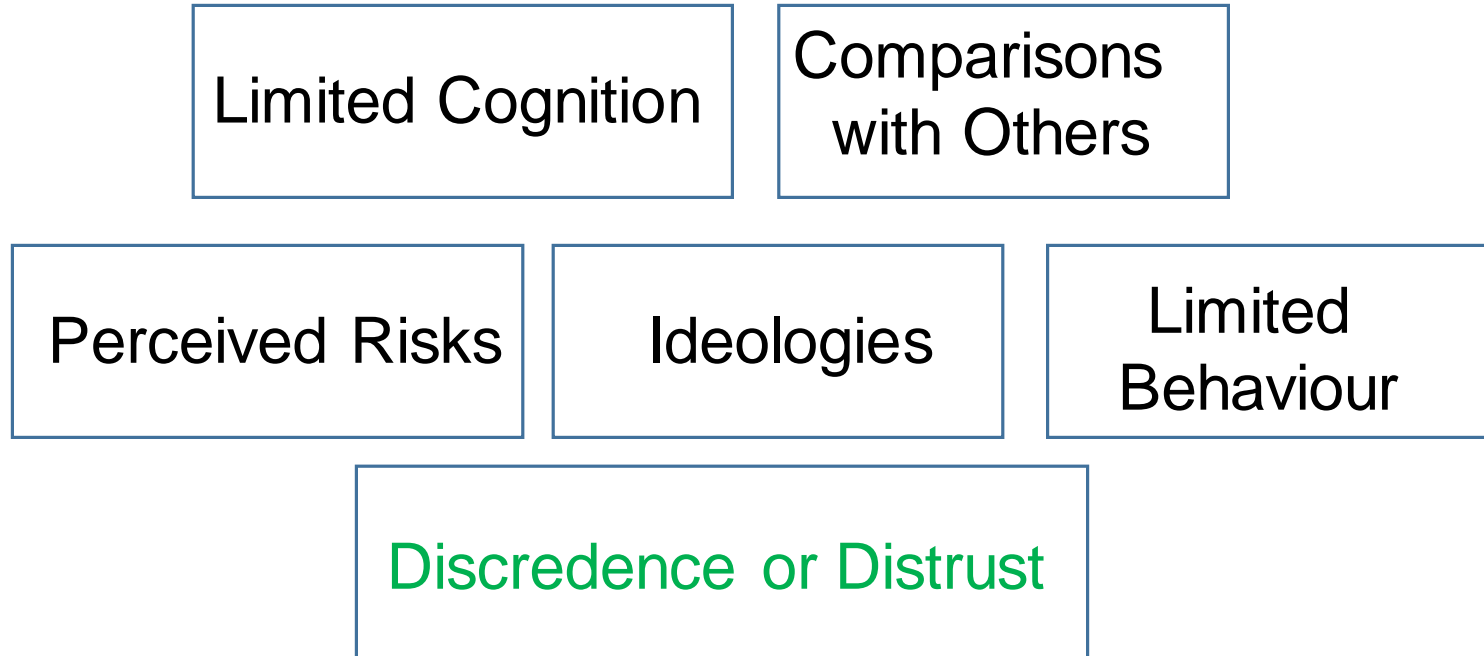
Perceived Risks

Ideologies

Limited
Behaviour

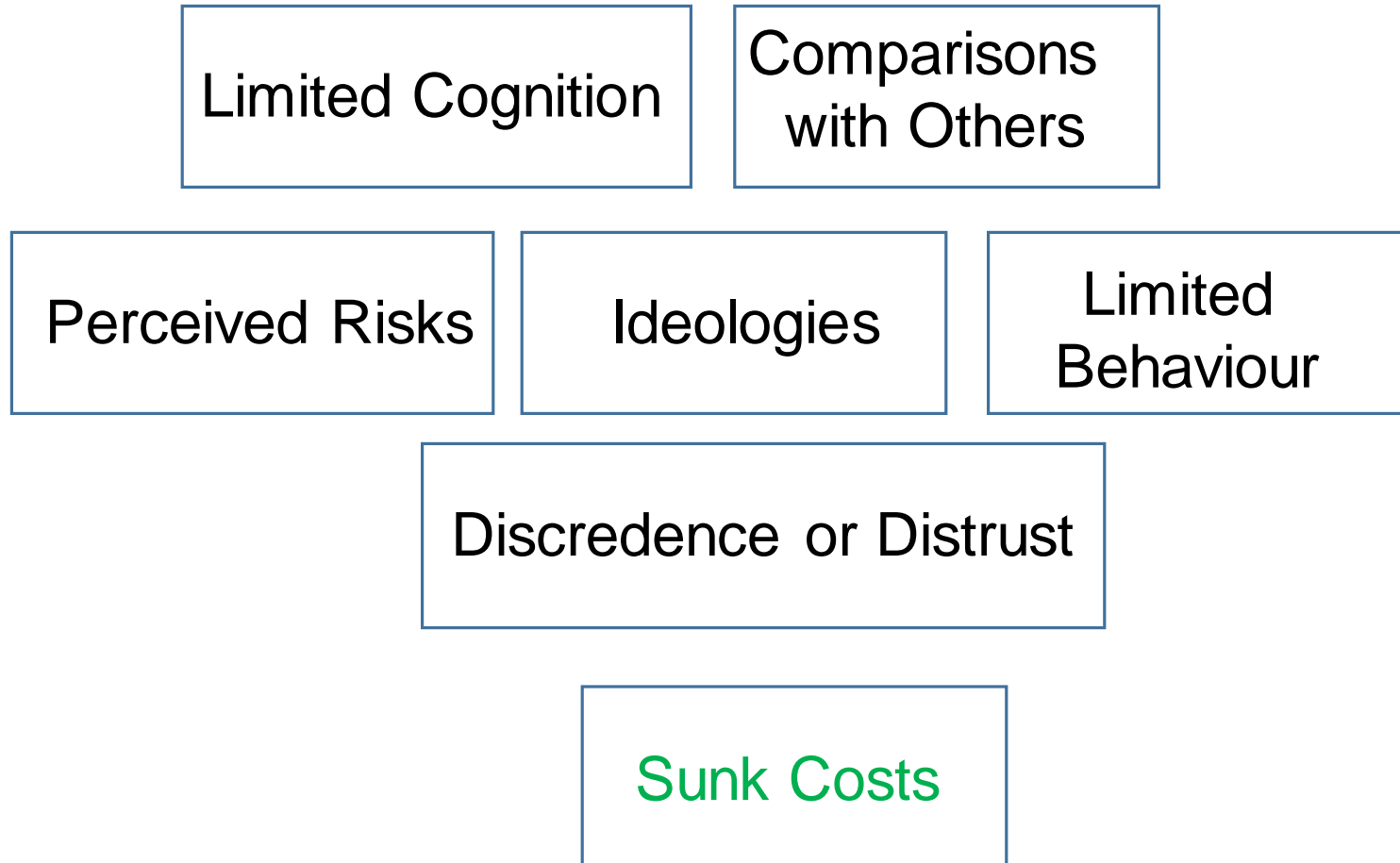
Effective Communication on Climate Change

General Psychological Barriers



Effective Communication on Climate Change

General Psychological Barriers



Effective Communication on Climate Change

Acceptance and acknowledgement of **The Human Condition**

Relevant for interactions with
general public, government
officials, peers!

Effective Communication on Climate Change

Steps for Effective Engagement*

1. Know your audience/stakeholders and get their attention

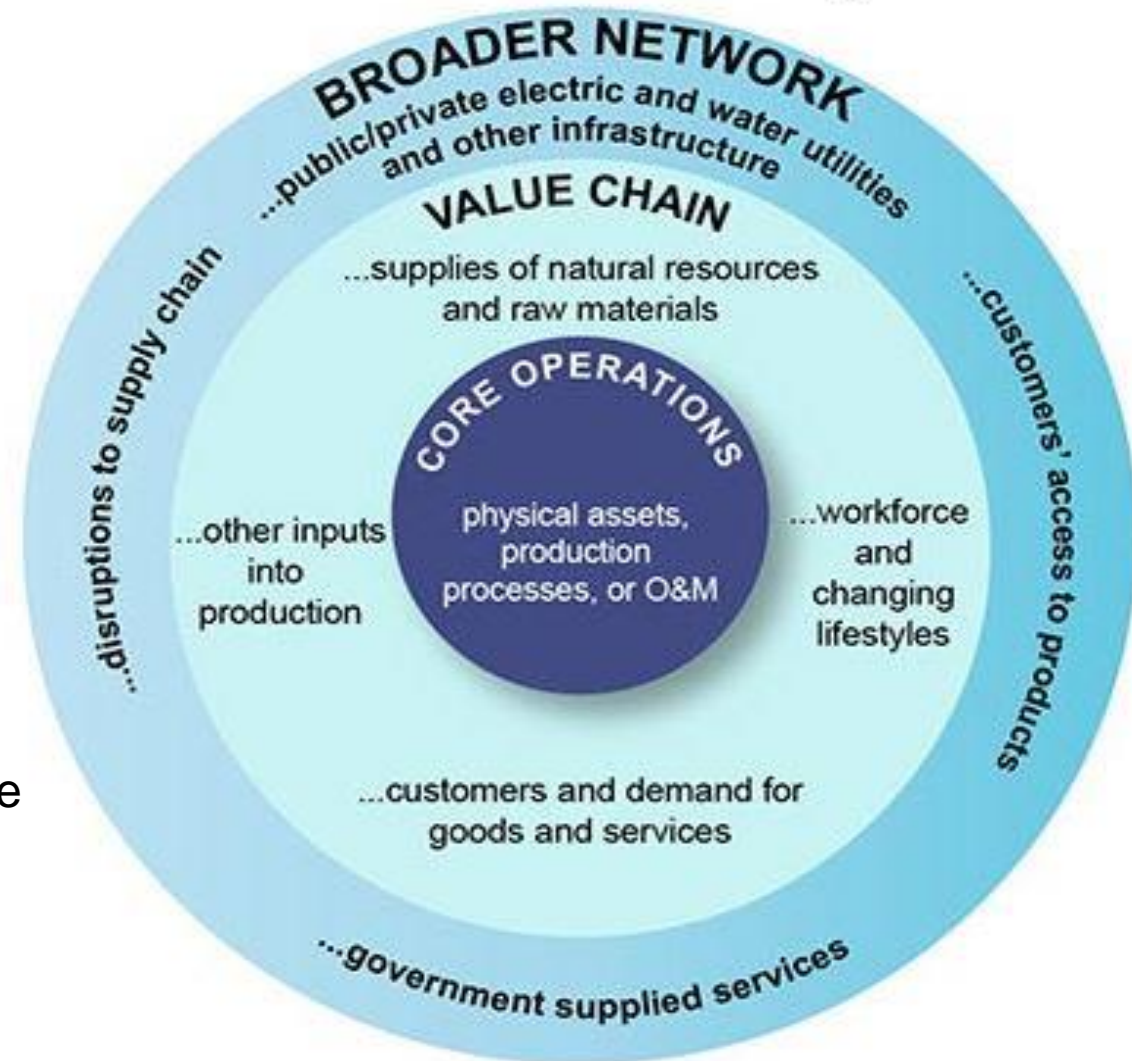


*The Psychology of Climate Change Communication,
Center for Research on Environmental Decisions,
Columbia University, 2009.

Steps for Effective Engagement

2. Move from impacts into implications

Effects of Climate Change on...



(Source: 3rd US National Climate Assessment, 2014)

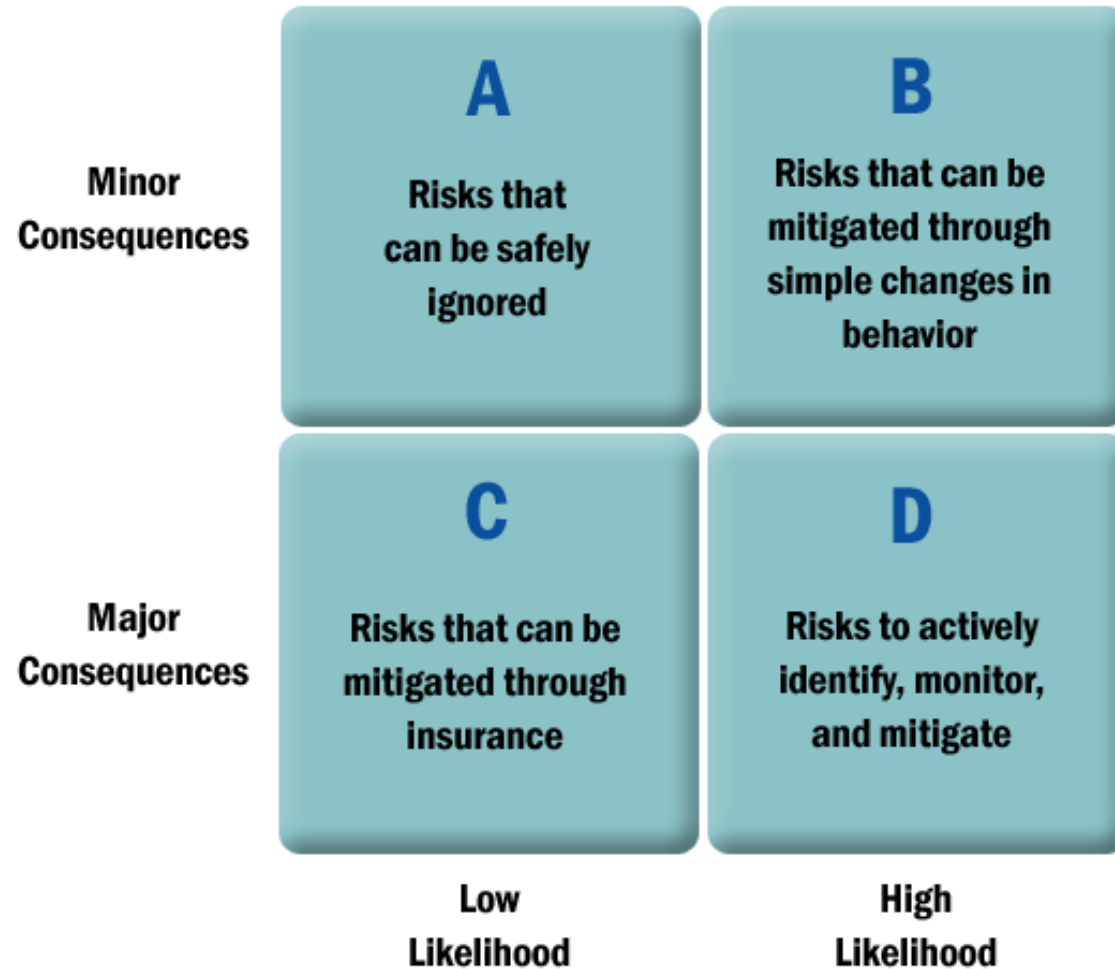
Steps for Effective Engagement

3. Consideration of risk and uncertainty



Steps for Effective Engagement

3. Consideration of **risk** and uncertainty



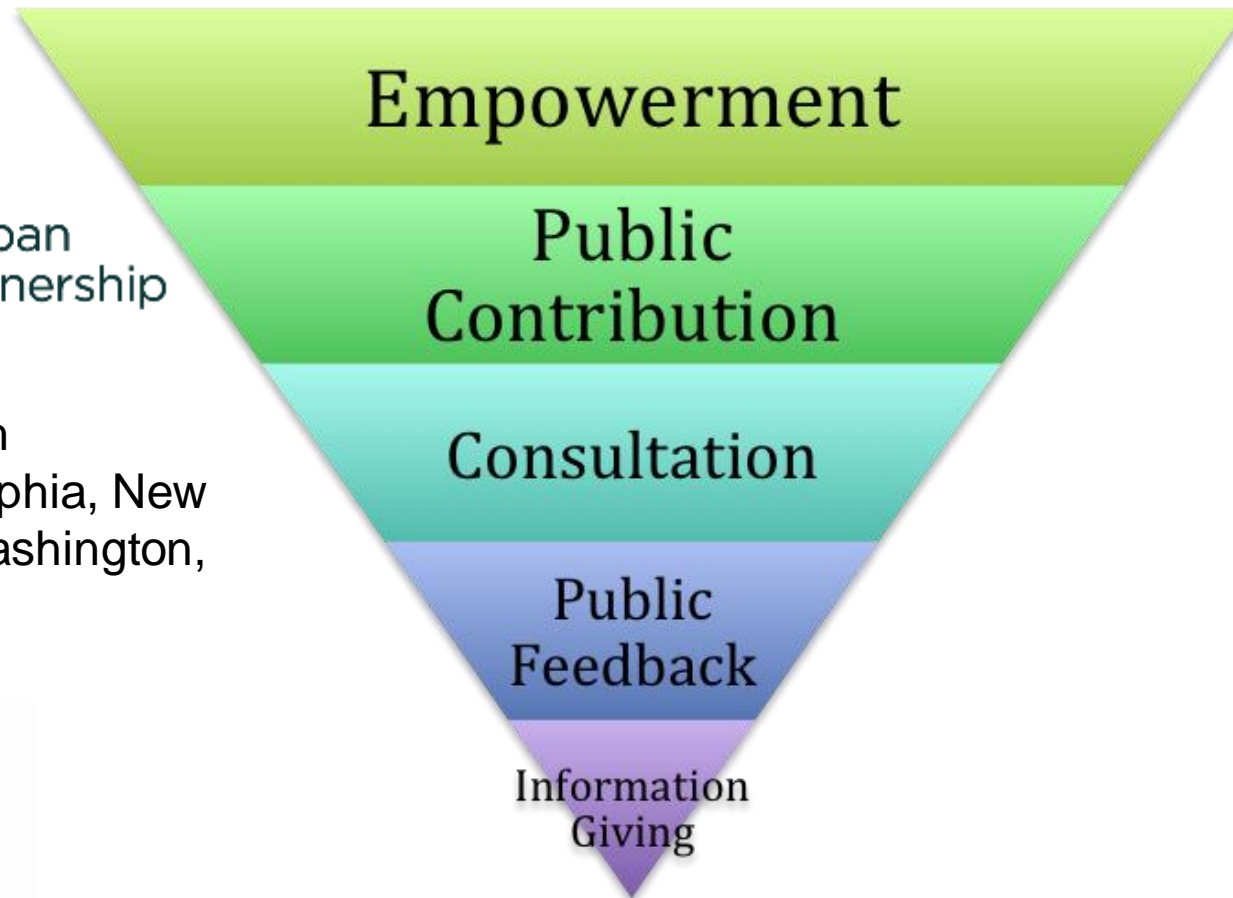
Steps for Effective Engagement

4. Tap into power of group participation and social identity



Climate & Urban
Systems Partnership

Funded by the NSF with
partnerships in Philadelphia, New
York, Pittsburgh and Washington,
DC



Case study project (New Zealand)



Climate Changes, Impacts & Implications for New Zealand

Home

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Research Aims

Our Partners

Calendar

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Climate Changes, Impacts & Implications for New Zealand



New Zealand Climate Change Research Institute
Te Pūtahi Hurihanga Taiao

Project Aim (one of them):

“Increasing the relevance of climate change science and decision-making capacity to consider climate change risks through collaborative learning processes”

Learning by Doing: Building Communities of Practice

Methods used:

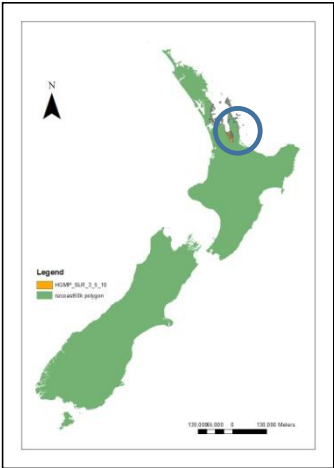
Interviews



Online Survey



Case Studies



Workshops



Key Learning Outcomes

Research Team Members

- Setting out CoPs from beginning of project
- Learning how to have different kinds of conversations
- An internal conversation with research group
- Building trust and building capacity
- Different conceptions of science across research group
- Developing different sorts of knowledge
- The importance of a simple yet comprehensive narrative
- Importance of networks and relationships



Key Learning Outcomes

Stakeholders (Outside of Research Team)

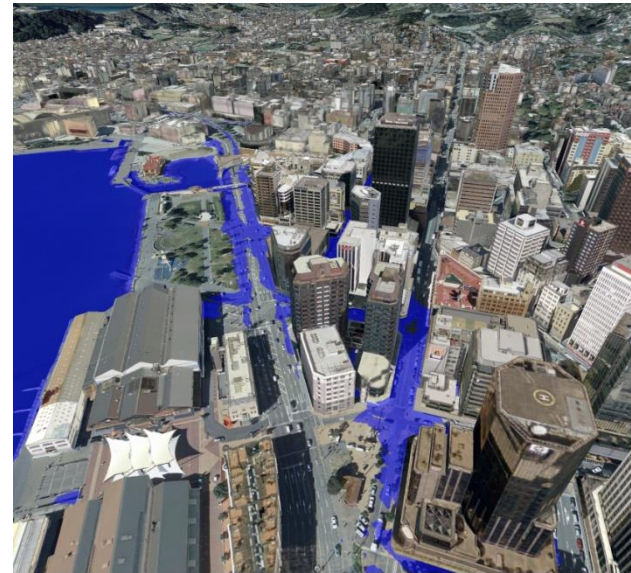
- Initial conversations with stakeholders shaped research
- Research collaboration with stakeholders providing data and models
- Focusing on decision processes – working within existing systems e.g. business risk
- Creating space for discussion
- An on-going conversation
- Ownership by stakeholders
- Moving from problem space to solution space



Key Learning Outcomes

Application to Urban focused decision-making

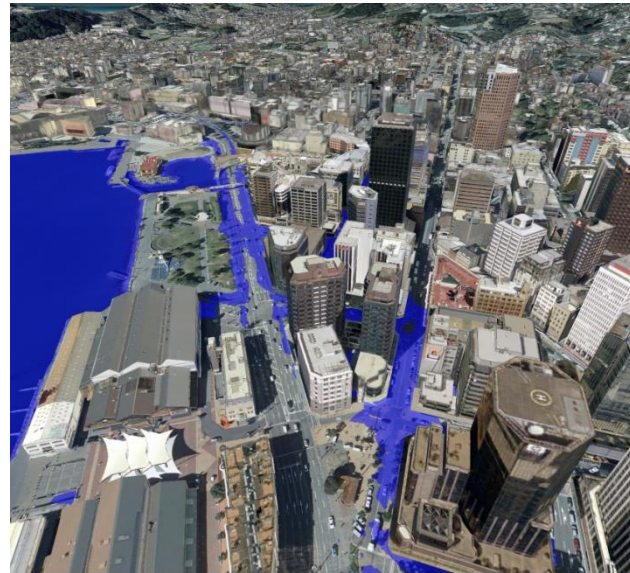
- Urban issues dominating for NZ Local Government
- Sea level rise and flooding impacting on underground utilities



Key Learning Outcomes




Application to Urban focused decision-making

- Urban issues dominating for NZ Local Government
- Sea level rise and flooding impacting on underground utilities
- **Climate change risks compounding hazards in Central Business Districts**

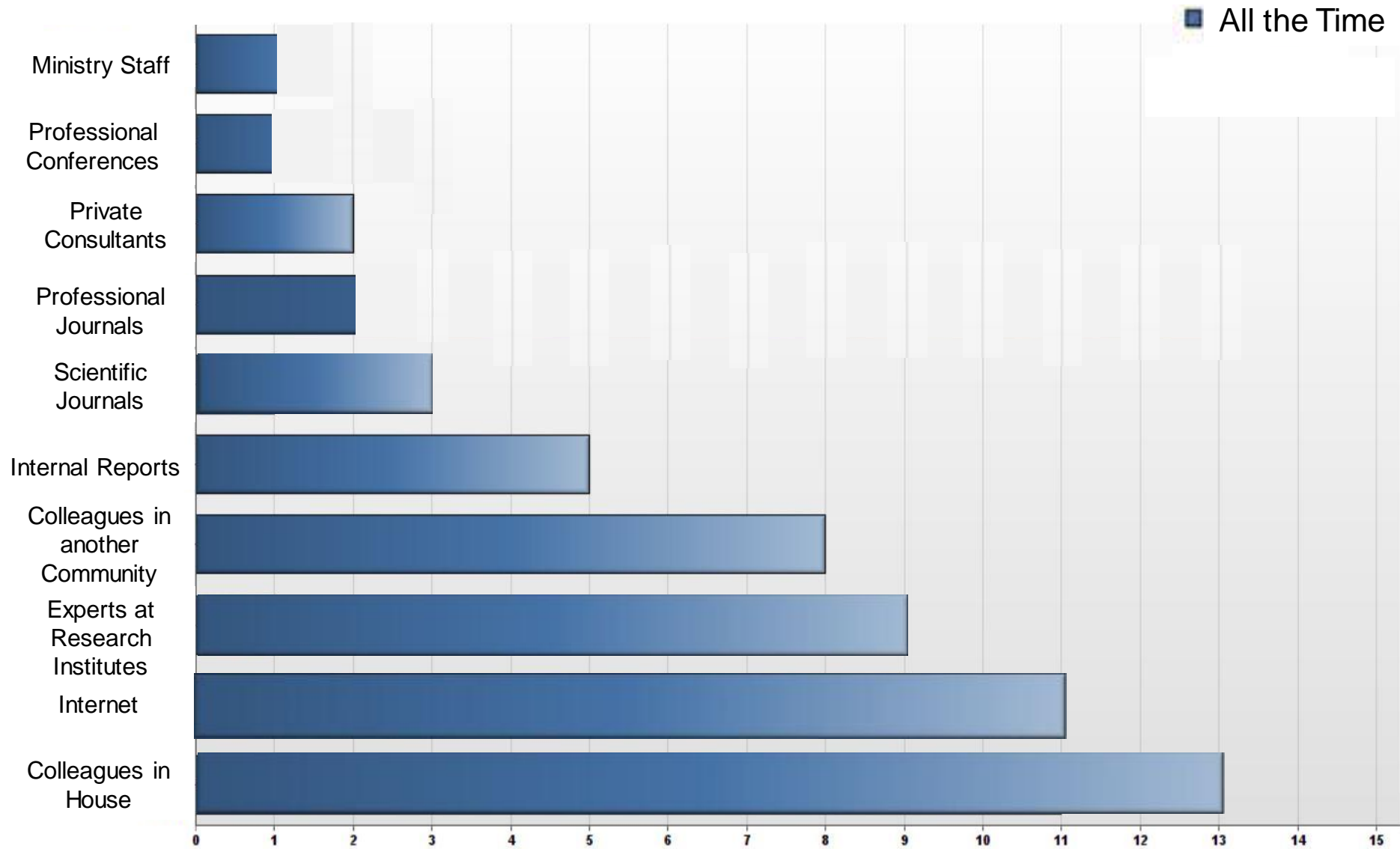


2015 Online Survey

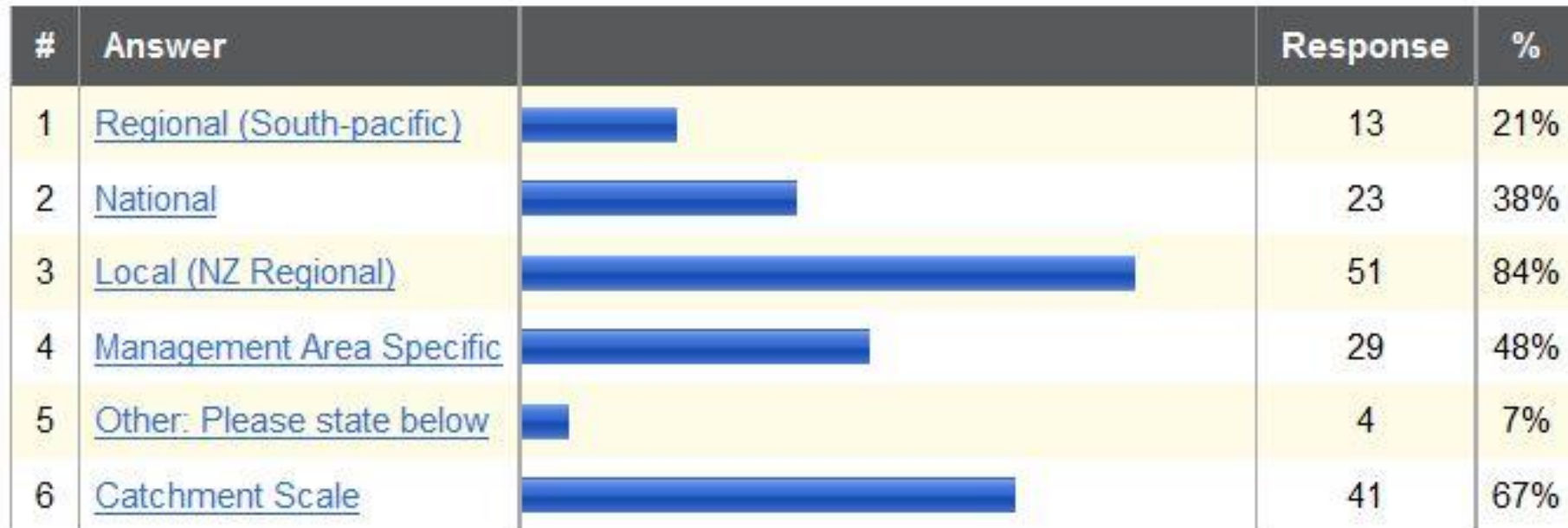
- 200 plus people contacted
- Issued at the start of Sept - 61 responses
- 16 Questions

#	Answer		Response	%
1	<u>Local or Regional Government</u>		48	79%
2	<u>Private Sector Organisation</u>		10	16%
3	<u>Non-Government Organisation or Community Group</u>		3	5%
	Total		61	100%

Information Sources

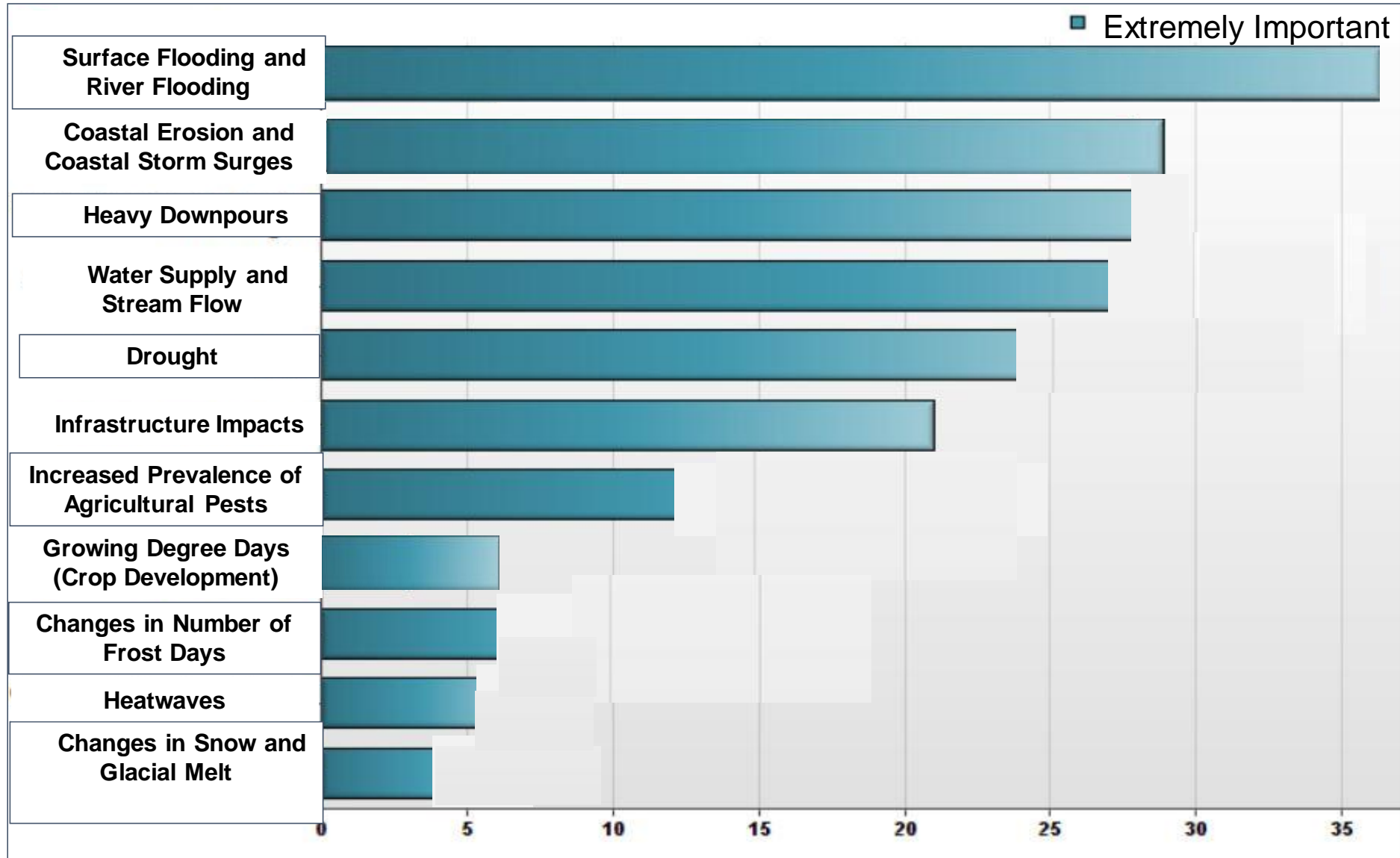


What scale is information most useful in planning for adaptation to climate change?

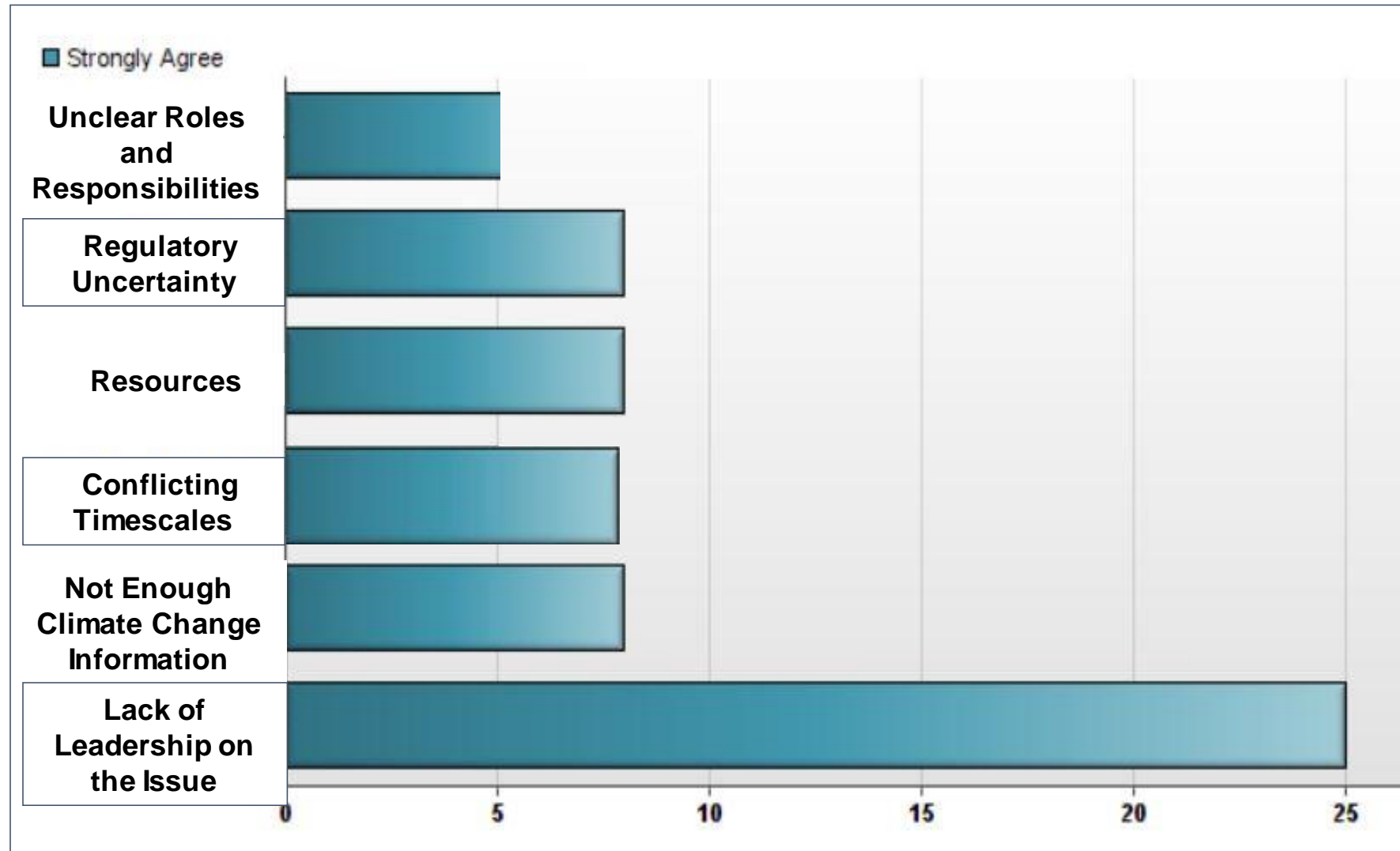


#	Answer	Response	%
1	<u>Regional (South-pacific)</u>	13	21%
2	<u>National</u>	23	38%
3	<u>Local (NZ Regional)</u>	51	84%
4	<u>Management Area Specific</u>	29	48%
5	<u>Other: Please state below</u>	4	7%
6	<u>Catchment Scale</u>	41	67%

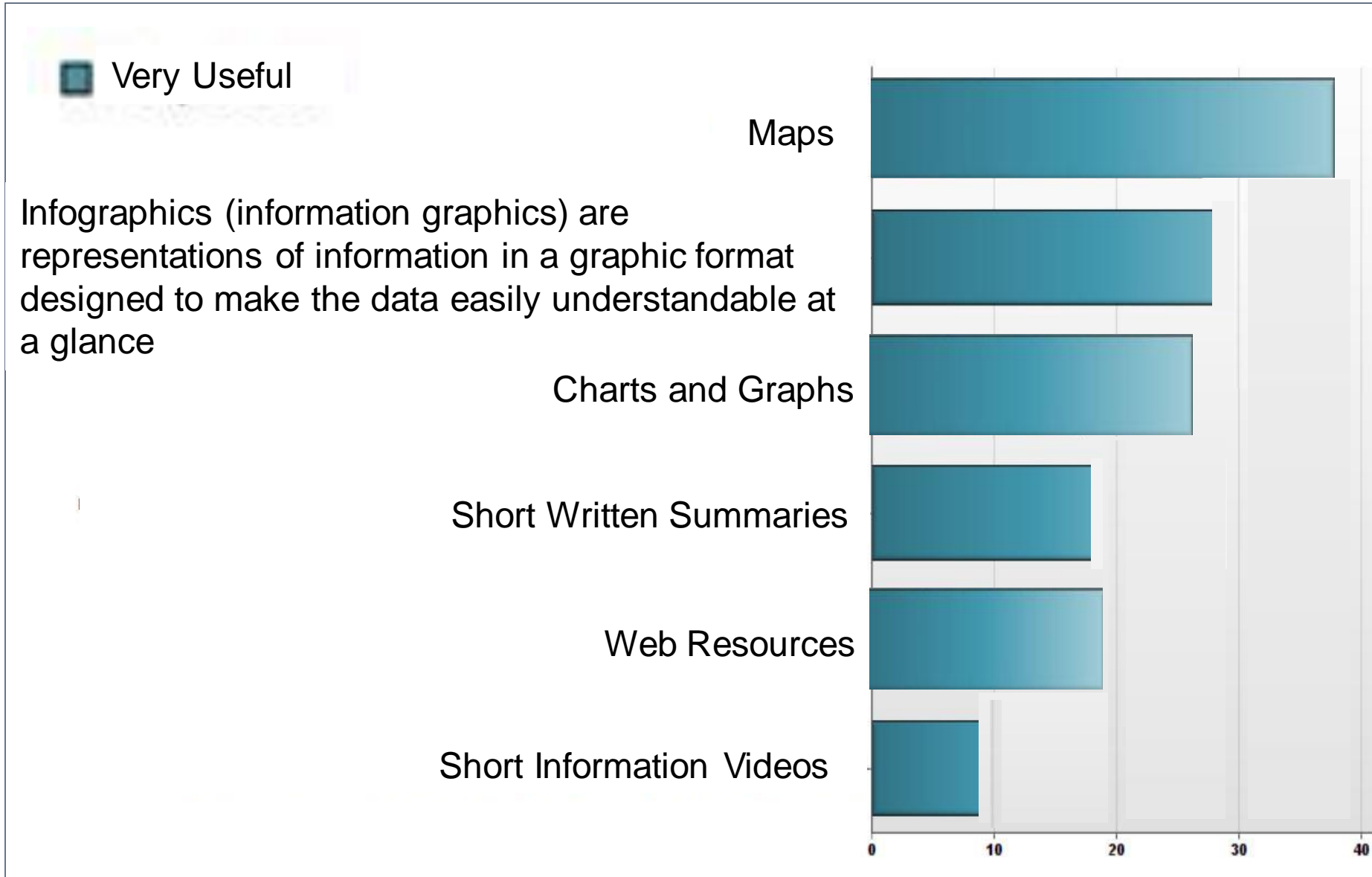
Ranking the importance of a range of climate impacts for decision-making



Which barriers listed, if any, prevent people from making decisions relating to climate change?



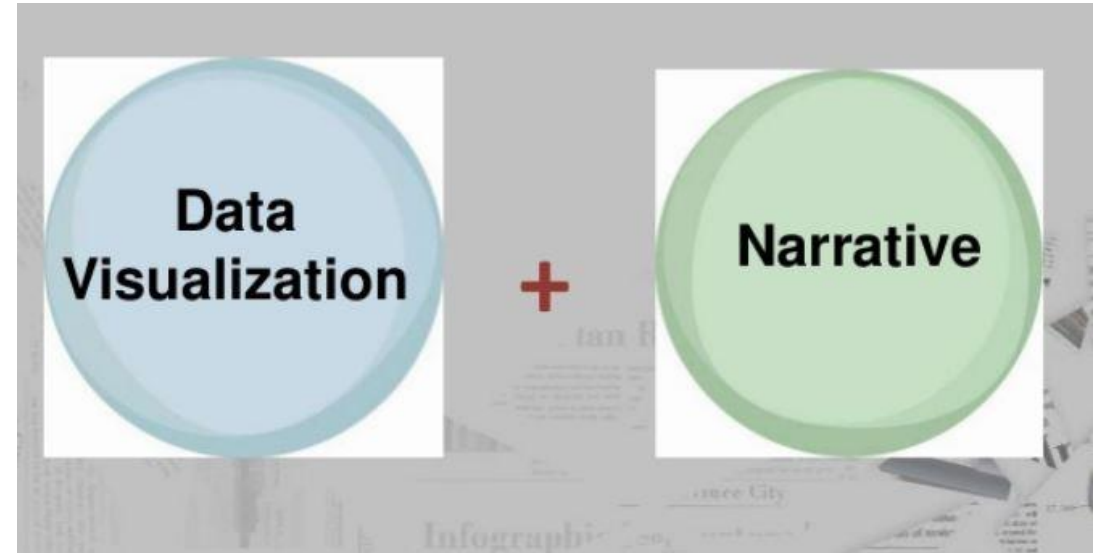
Rating the potential usefulness of a range of climate change products/outputs in decision-making



Data Driven Storytelling

- (Who)Audience
- (What)Outcomes
- (Why)Purpose

Container and Content
Spaces and Places



Data Driven Storytelling

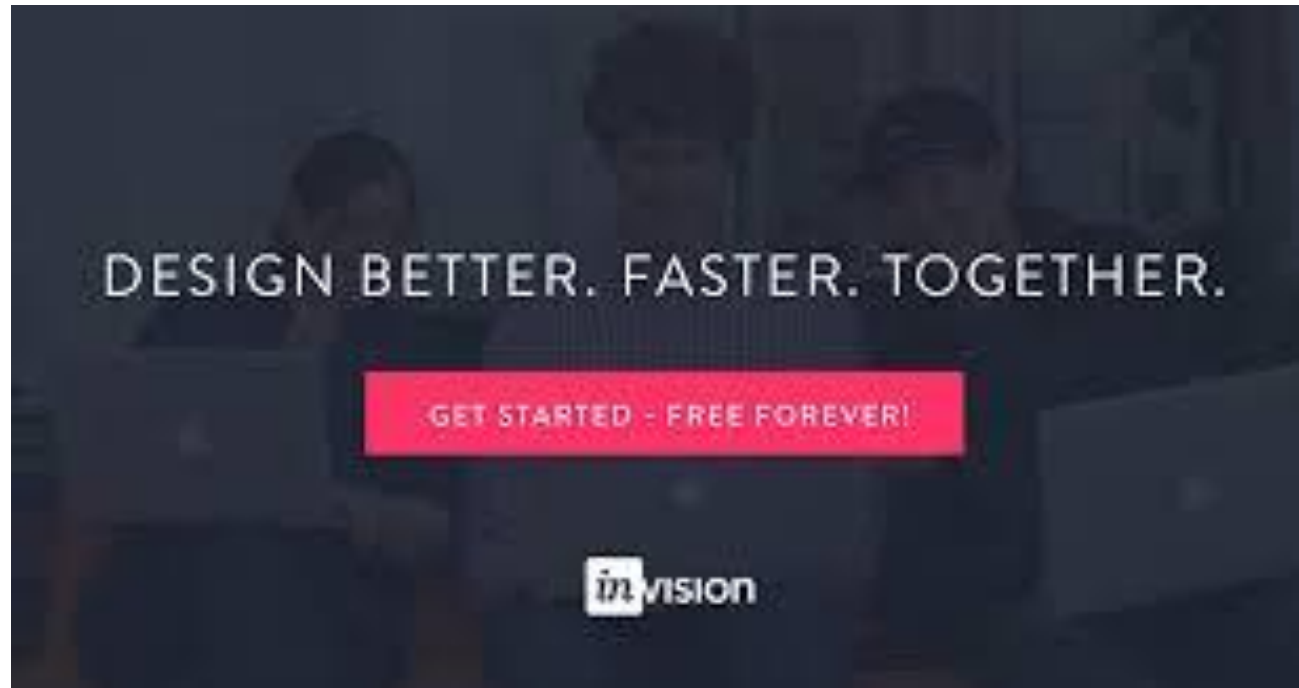


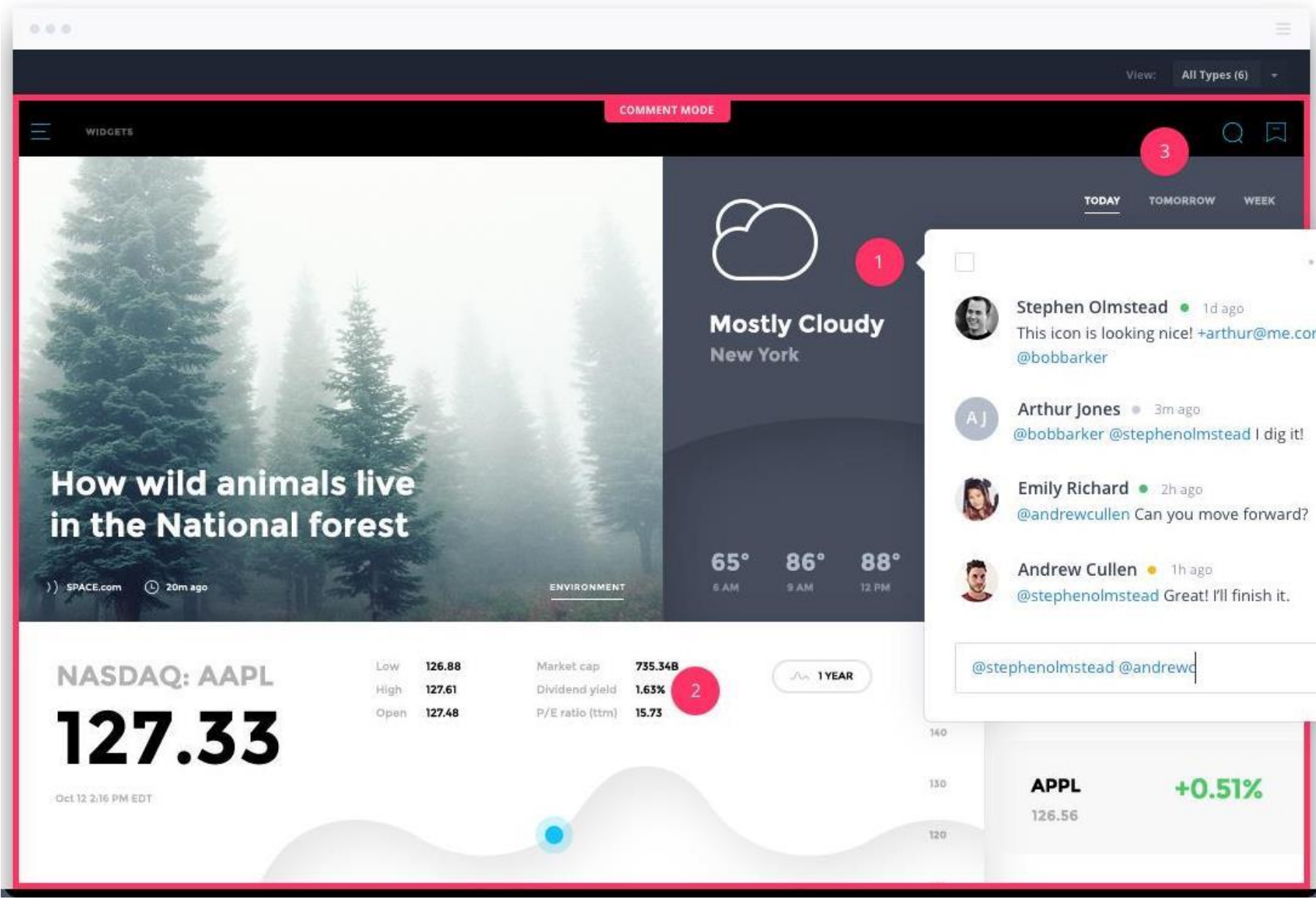
Reflections to Date

- Community of Practice
- Consultation
- Expectation management
- Managing feedback
- Reflective/active listening



Invision software





View: All Types (6)

WIDGETS

COMMENT MODE

3



TODAY TOMORROW WEEK



1

Mostly Cloudy
New York

65° 86° 88°
6 AM 9 AM 12 PM

How wild animals live
in the National forest

SPACE.com 20m ago

ENVIRONMENT

NASDAQ: AAPL

127.33

Oct 12 2:16 PM EDT

Low 126.88
High 127.61
Open 127.48

Market cap 735.34B
Dividend yield 1.63%
P/E ratio (ttm) 15.73

2

1 YEAR



Stephen Olmstead 1d ago
This icon is looking nice! +arthur@me.com @bobbarker



Arthur Jones 3m ago
@bobbarker @stephenolmstead I dig it!



Emily Richard 2h ago
@andrewcullen Can you move forward?



Andrew Cullen 1h ago
@stephenolmstead Great! I'll finish it.

@stephenolmstead @andrewc

APPL

+0.51%

126.56

What we hope outcomes will achieve

Outcomes?

- Creating new links
 - Strengthening existing ones
- Information dissemination
- Creating more interactions and conversations between social scientists and physical process scientists
- Fostering a community of practice
- Building capacity
- Starting new conversations
 - Improving quality and quantity of data

Summary

What Makes an Effective Infographic

- **A Targeted Audience**
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- **Effective Graphics**
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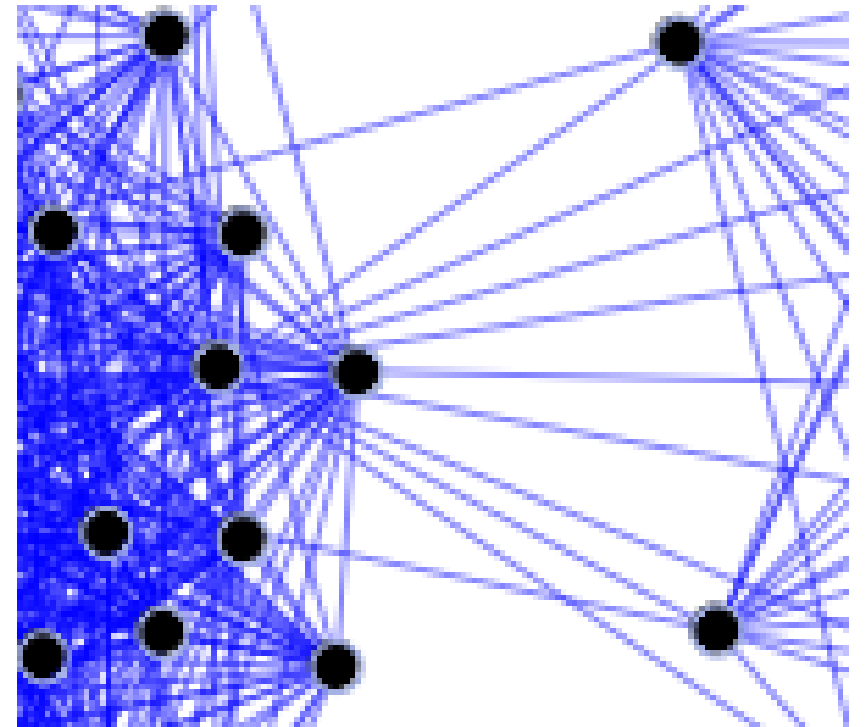
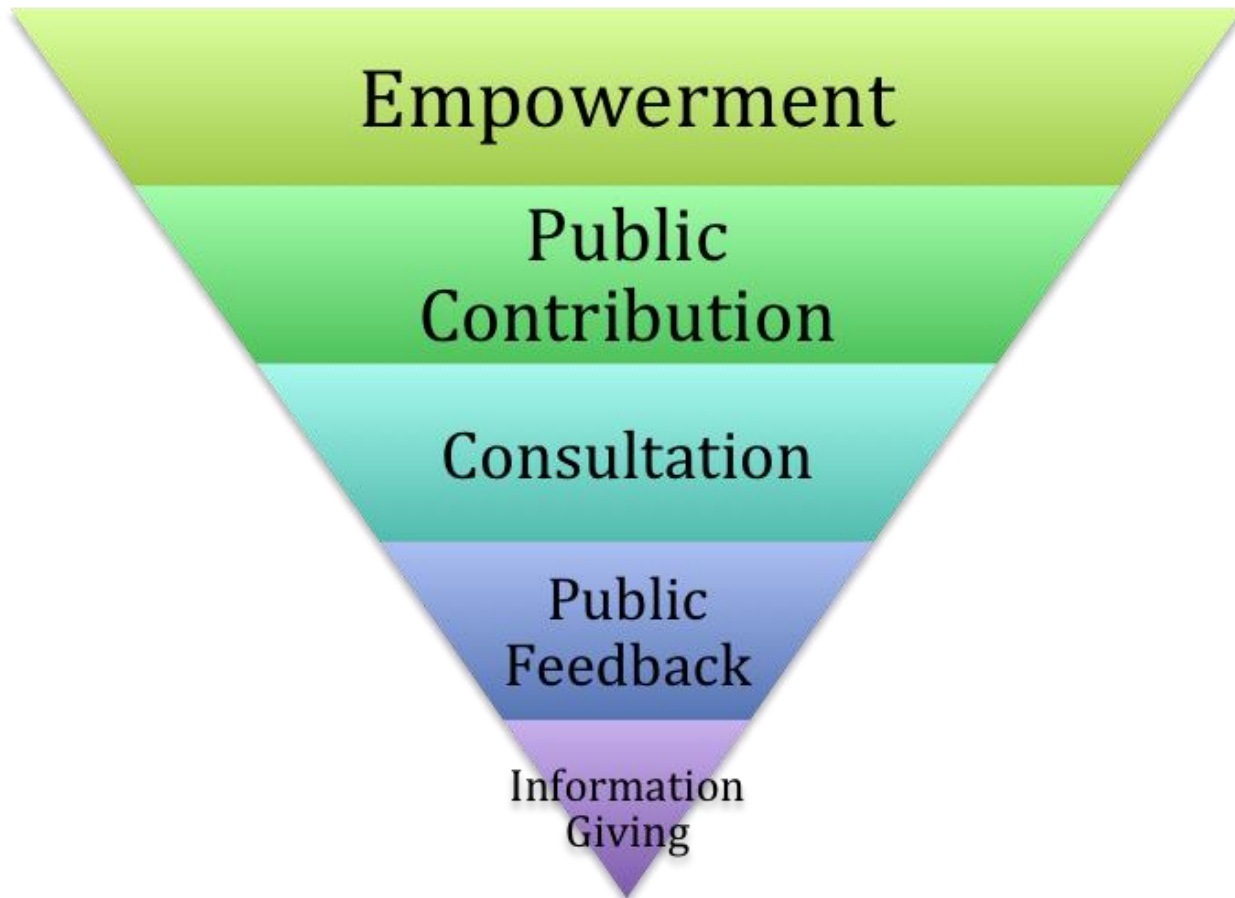


Effective Communication on Climate Change

Acceptance and
acknowledgement of **The
Human Condition**

Relevant for interactions with
general public, government
officials, peers!

The Power of Communities and Networks



Thanks



"If you want to go fast, go alone. If you want to go far, go together."

African proverb

Email: stephen.flood@vuw.ac.nz

