



# Women and Climate Change

African Association of Women in  
Geosciences  
7<sup>th</sup> Conference  
Windhoek  
November 2014



# Women, Gender Equality and Climate Change

- Women, agriculture and food security  
Women, gender equality and biodiversity  
Women, gender equality and water resources
- Women, gender equality and health
- Women, gender equality and changes in human settlements and migration patterns due to environmental degradation
- Implications of climate change for women's human rights

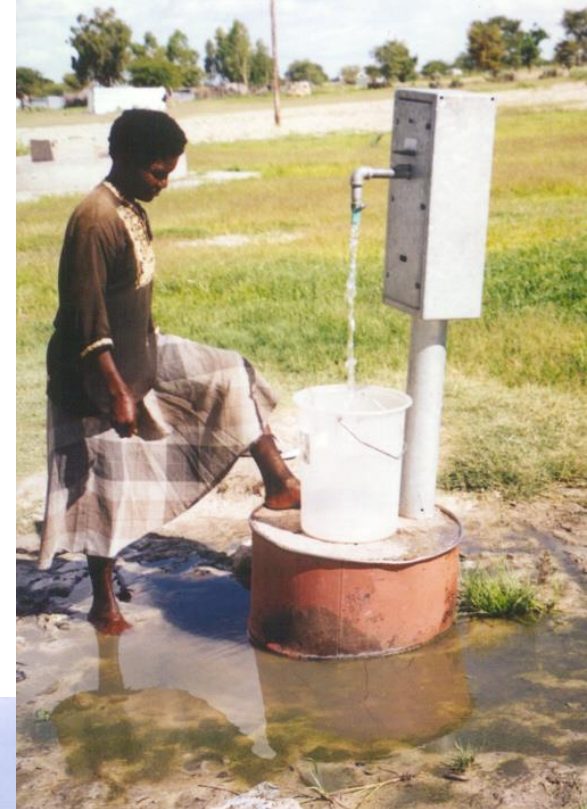
# Gender-sensitive responses to climate change

- Incorporating gender perspectives and involving women as agents of change in responses
- Women, gender equality and energy
- Women, gender equality and technology in adaptation responses
- Women, gender equality and financing of mitigation, adaptation and technology
- Women, gender equality and emergency measures during natural disasters

# Women, Gender Equality and Climate Change

- **Men**, agriculture and food security
- **Men**, gender equality and biodiversity
- **Men**, gender equality and water resources
- **Men**, gender equality and health
- **Men**, gender equality and changes in human settlements and migration patterns due to environmental degradation
- Implications of climate change for **men's** human rights



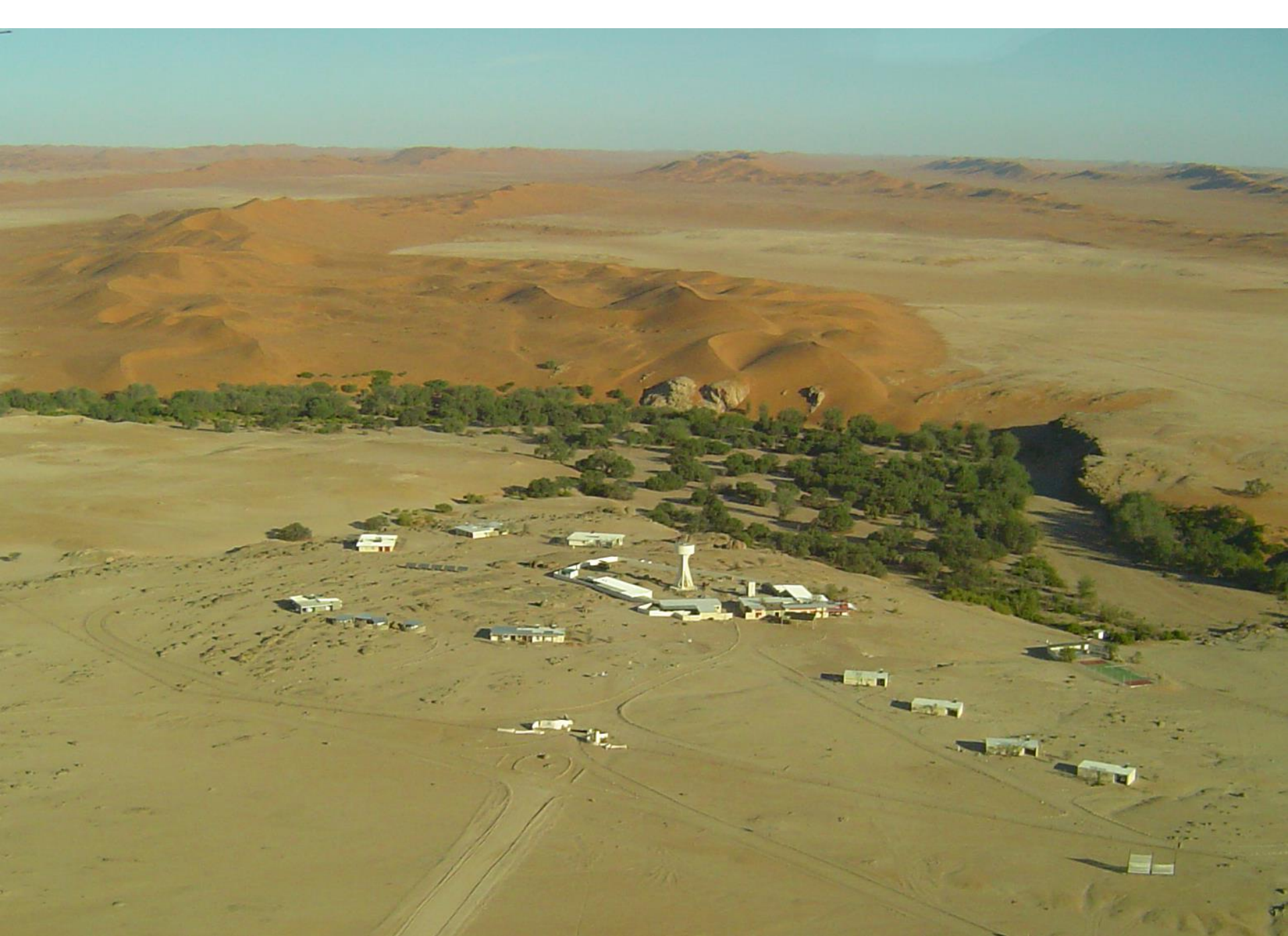




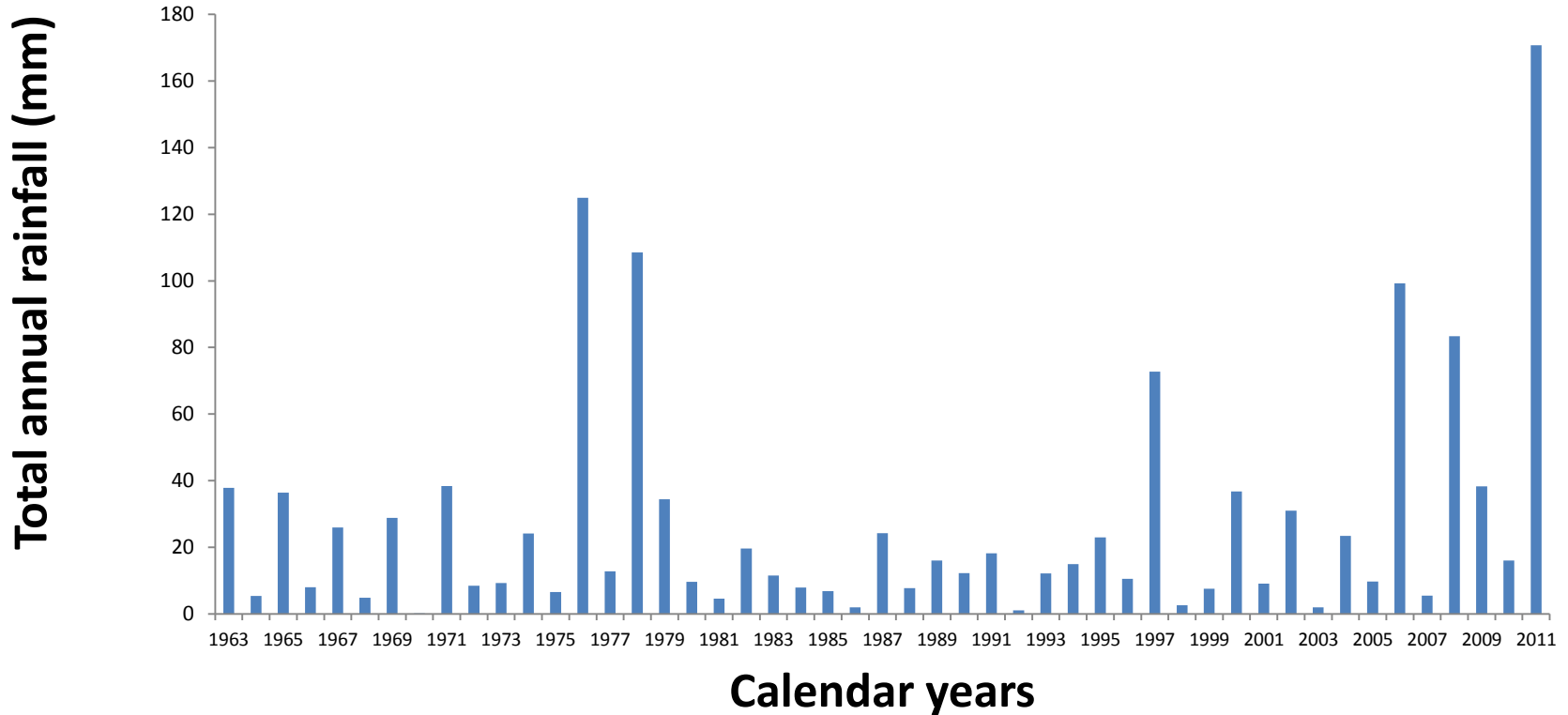
# Adaptation learning







## Gobabeb rainfall



# Keeping Climate Impacts at Bay: A 6-Point Strategy for Climate-Resilient Economies in Africa

- 1 Increased Investment in climate observations, science, and services
- 2 Strengthening effective climate policies and enabling the existence of strong institutions
- 3 Leveraging South-South Partnerships
- 4 Harnessing clean energy potential
- 5 Reforming agricultural and food systems through sustainable land management
- 6 Enhancing and maximising tourism potential

# Edna Plumstead



# Edna Plumstead

- 15 September 1903 Cape Town –  
23 September 1989 Johannesburg
- Palaeobotanist focused on Glossopteris
- Began defending theory of continental drift in 1950s
- One of SA's foremost scientists in field of Gondwana palaeobotany and geology
- Awarded the Christian Mica Gondwanaland Medal by the Geological Society of India
- Made Fellow of the Royal Society of SA
- 'A Woman's achievement in a man's world: profile of Edna Plumstead' (CSIR, 1970)

# Edna Plumstead

- Graduated in 1924 from Witwatersrand with BSc Hons in Geology and took up appointment in Department
- Her MSc degree was highly regarded by the Geological Society of SA leading to her being the first recipient of the Corstorphine Medal
- Joined Bernard Price Institute in 1965
- Realised that the plant fossils collected in Antarctica, South Africa, South America, India and Australia in same age sedimentary rocks were essentially identical

# Edna Plumstead

- Although this was long before general acceptance of 'continental-drift', plate tectonics and sea-floor spreading, the Antarctic fossil plants were seen as compelling evidence for Gondwana
- Five years later, James Kitching added evidence of vertebrate fossils when in 1970 he collected fossils in Antarctica similar to what he knew in the Karoo

Dr. Fatima Denton at CCDA-III  
21-23 October 2013  
(Economic Commission for Africa)





# Fatima Denton

- Nine out of the ten fastest growing economies in the world are in Africa.
- This growth generates few jobs and comes at a high environmental and social cost.
- Infrastructure, institutions and investments must become more climate resilient.
- Expect continued high population growth to 2 billion by 2050, and more than 3 billion in 2100.
- Africa can use climate change as a business opportunity to transform key sectors, such as agriculture, energy and water, and secure livelihoods.
- Good governance is key. Better governance depends on great leadership.
- Judging by the ethics, fearless intellect and powerful vision of some of the CC scientists, more women at the top of government in Africa may just make a difference.

**Prof. Coleen Vogel**

**Geography, Meteorology and Geoinformatics**

**University of Pretoria**



# Prof Coleen Vogel

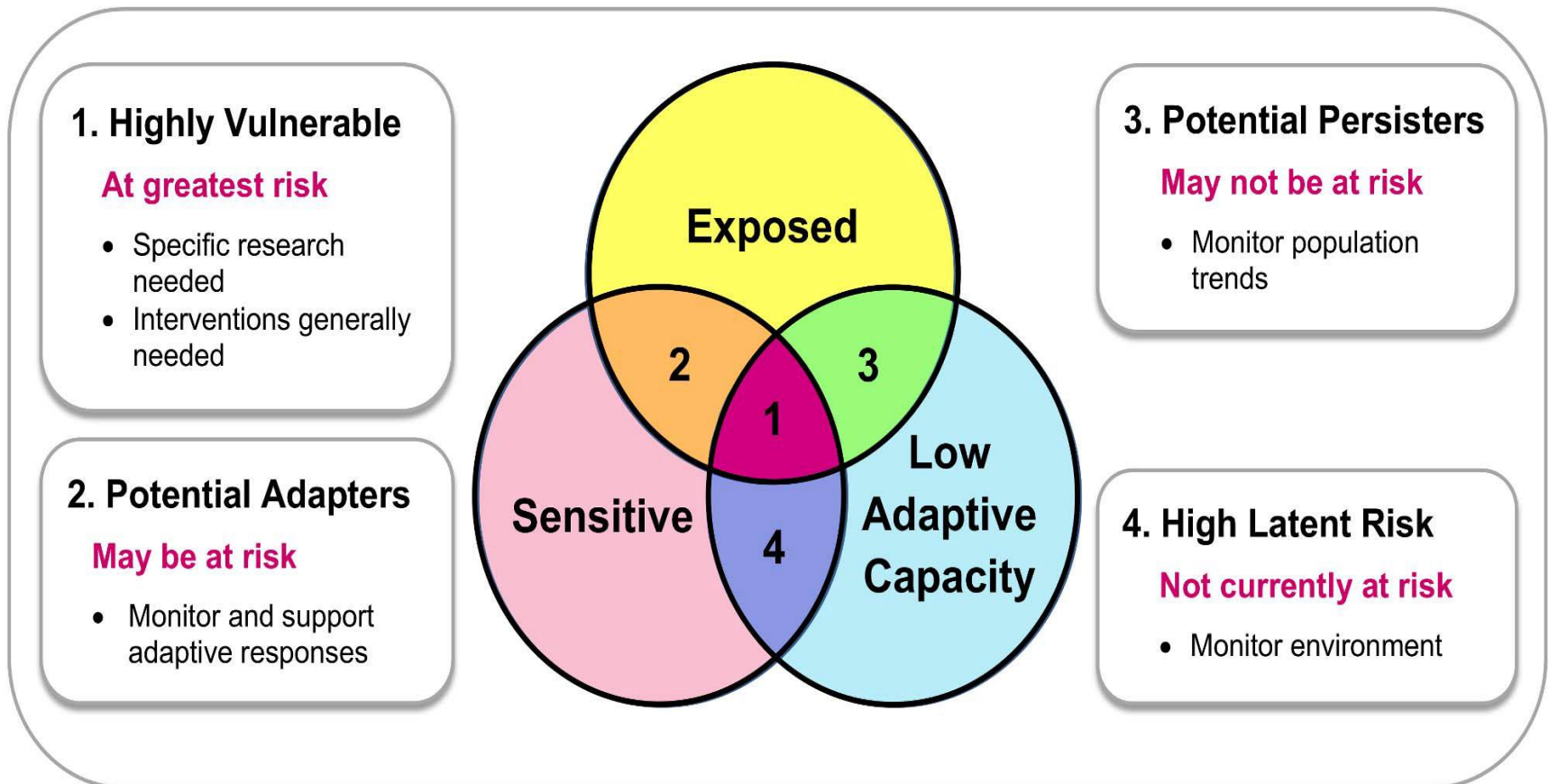
- Extraordinary Professor (Visiting) to the School of Public Leadership, University of Stellenbosch.
- Previous BMW Chair of Sustainability at the University of the Witwatersrand, Johannesburg
- Previous Chair of the international scientific committee of the International Human Dimensions Programme (IHDP) dealing with environmental change issues.
- Current research interests include transdisciplinarity dimensions of climate change, transformative education on global environmental change, urban risk reduction, climate change risk communication and climate change development issues.

# Dr Wendy Foden

## UCT, now IUCN

- A changing climate is eroding the geographical range of the Namib Desert tree Aloe through population declines and dispersal lags. *Diversity and Distributions*. (2007) 13, 645–653.
- Identifying the World's Most Climate Change Vulnerable Species: A Systematic Trait-Based Assessment of all Birds, Amphibians & Corals. (2013) *PloS ONE* 8(6): e65427.

# Three dimensions of climate change vulnerability: sensitivity, exposure and low adaptive capacity



# Dr Wendy Foden

- Climate change vulnerability assessment projects in East and Central Africa's Albertine Rift, West Africa and Madagascar.
- She carries out a range of activities to raise awareness about climate change impacts on biodiversity
- Foden has been guest lecturer on the University of Cambridge Conservation Leadership MPhil course since 2010

# Dr Seema Arora-Jonsson

- Climate change can be seen as the example *par excellence* of 'reflexive development' (Pieterse 1998) where development works to manage the problems created by itself.
- This prevents major challenges to the prevailing system and leaves the social order and the balance of power between and within nations more or less intact

Chambers (1997) claimed for example that development interventions have been/are still based on positivist, exclusive, expert knowledge, where technocratic elites sustain their own reality that they transfer to others



Seema Arora-Jonsson examines the politics of climate change in present day negotiations as the nexus where geopolitics, development and the environment intersect.



# “Women hold the key to Climate’s Future” - **Wangari Maathai**

- **Wangari Muta Maathai** (1 April 1940 – 25 September 2011) was a Kenyan environmental and political activist.
- In the 1970s, Maathai founded the Green Belt Movement, an environmental non-governmental organization focused on the planting of trees, environmental conservation, and women's rights.

In 1986, she was awarded the Right Livelihood Award, and in 2004, she became the first African woman to receive the Nobel Peace Prize for "her contribution to sustainable development, democracy and peace".



# Prof Camille Parmesan

- Dept. of Geology and the Environmental Sciences Institute, University of Texas
- National Marine Aquarium Chair in the Public Understanding of Oceans and Human Health Marine Institute; Plymouth University
  - Formerly
- Professor of Integrative Biology, University of Texas, Austin

Highly Cited Papers by Camille Parmesan and  
Colleagues, Published Since 1996

(Ranked by total citations)

| Rank | Papers  | Cites |
|------|---|-------|
| 1    | G.R. Walther, <i>et al.</i> , "Ecological responses to recent climate change," <i>Nature</i> , 416 (6879): 389-95, 2002.  | 1,228 |
| 2    | C. Parmesan, G. Yohe, "A globally coherent fingerprint of climate change impacts across natural systems," <i>Nature</i> , 421(6918): 37-42, 2003.                     | 1,123 |
| 3    | D.R. Easterling, <i>et al.</i> , "Climate extremes: Observations, modeling, and impacts," <i>Science</i> , 289(5487): 2068-74, 2000.                                  | 474   |
| 4    | C. Parmesan, <i>et al.</i> , "Poleward shifts in geographical ranges of butterfly species associated with regional warming," <i>Nature</i> , 399(6736): 579-83, 1999. | 434   |
| 5    | C. Parmesan, "Ecological and evolutionary responses to recent climate change," <i>Ann. Rev. Ecol. Evol. &amp; System.</i> , 37: 637-69, 2006.                         | 367   |

**\*Parmesan C.**  
Climate and species  
range. 1996. *Nature*  
**382:765-766.**  
(239 citations)

- Sierra Nevada califor – hiking up to the highest know populations of Edith's checkerspot (*Euphydryas editha*) – at Mono Pass, 12,400 feet. It went extinct in the big el nino of 1997/1998 because snow never melted that year, and next year an avalanche destroyed the habitat.



# Public contributions

- IPCC Third Assessment Report 2007
- As lead author shared in the Nobel Prize
- As of 2010, had 24 publications. Chose to work for the IPCC and talk to policy makers rather than push out numerous minor papers.
- Gives 10 lectures a year to select audiences
- Prefers to continue doing research on organisms and climate change

# 7 female & 14 male authors

- Geographical limits to species-range shifts are suggested by climate velocity  
*Nature* **507**, 492–495 (27 March 2014)
- Climate source areas indicate where locally novel conditions are not connected to areas where similar climates previously occurred, and are thereby inaccessible to climate migrants tracking isotherms
- Climate sink areas are where climate conditions locally disappear potentially blocking the movement of climate migrants

# But

- According to a survey conducted by IPCC WGI Co-Chairs and Technical Support Unit (TSU) on 25 April 2014, many of the authors saw the need for better gender balance.
- For the 5<sup>th</sup> IPCC report, only 27% of contributors to WGII, concerned with impacts, adaptation and vulnerability and 18,5% of contributors of WGI, concerned with the physical science basis, are female.



## But ... cont.

Only 7% of leaders in offices of National Weather Services are women.

Similarly, a study by the University of Oxford with the Nielsen Co. found that 18 of the 22 'most influential spokespeople on climate change' are male.

Female spokespeople were neither politicians nor scientists and their direct connection to climate change is therefore doubtful.

## Moreover .....

Some feminist scholars hold that the debate on climate change is not only dominated by men but also primarily shaped in 'masculine' principles, which limits discussions to focus on technical solutions.

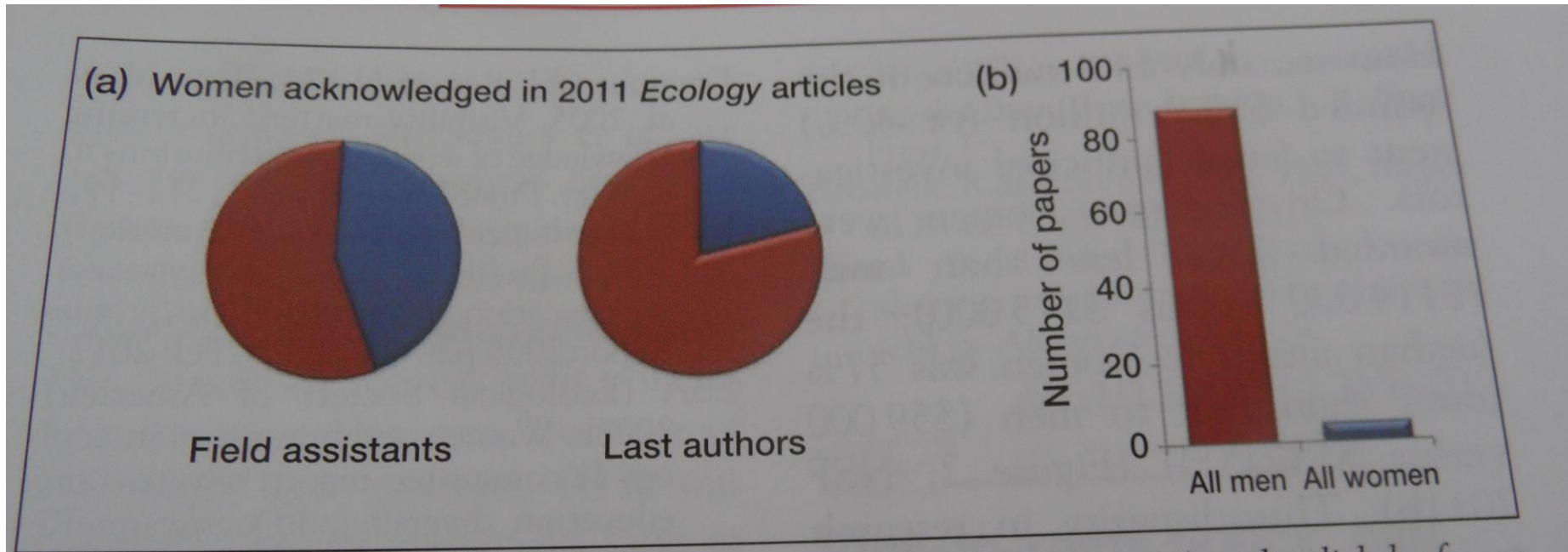
This perception of climate change hides subjectivity and power relations that actually condition climate change policy and science.

# Others say ....

By framing climate change as an issue of 'hard' natural scientific conduct and natural security, it is kept within the traditional domains of hegemonic masculinity.

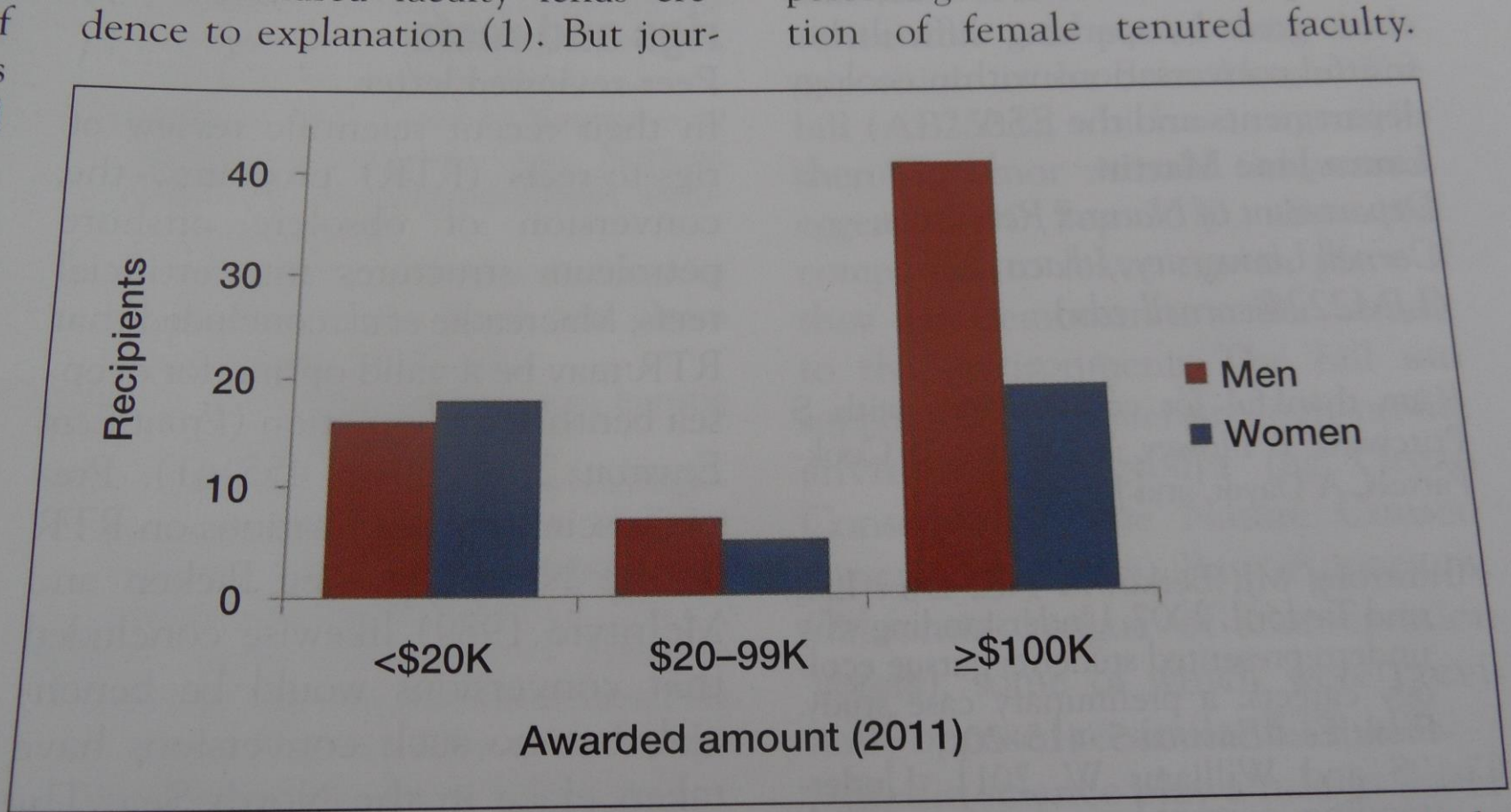
E.g. the 2°C aim is not a safe goal for all people on the planet. Rather it will ensure the stability of a patriarchal capitalism and subsequently the continuity of power for those who are powerful today.

# Authorship balance



**Figure 1.** In articles published in *Ecology* in 2011 ( $n = 258$ ), (a) only slightly fewer women (blue) were acknowledged than men (red) for assistance with fieldwork and data collection. Meanwhile, only 21% of last authors were women. (b) Many more articles were authored exclusively by men than exclusively by women.

# Funding balance



**Figure 2.** Proportion of recipients (principal investigators) of grants awarded in 2011 by gender and amount awarded.



# Attributes for successful contribution to addressing climate change

- Focused, driven
- Positive
- Believe in one's self
- Proactive
- Out-of-the-box thinking
- Fearless
- Attention to detail
- Address policy and policy makers

# Adaptation learning





# Unanswered questions

- Are female headed households really most vulnerable?
- If alcohol is a primary cause of poverty, and males are the primary consumers, how does this contribute to household vulnerability?
- How does risk perception influence response to climate change?



Thank you

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