Linking Knowledge with Action for Sustainable Development

Reflections on discussions at the

CARE-WWF Alliance Summit

Washington, DC – September 11, 2012

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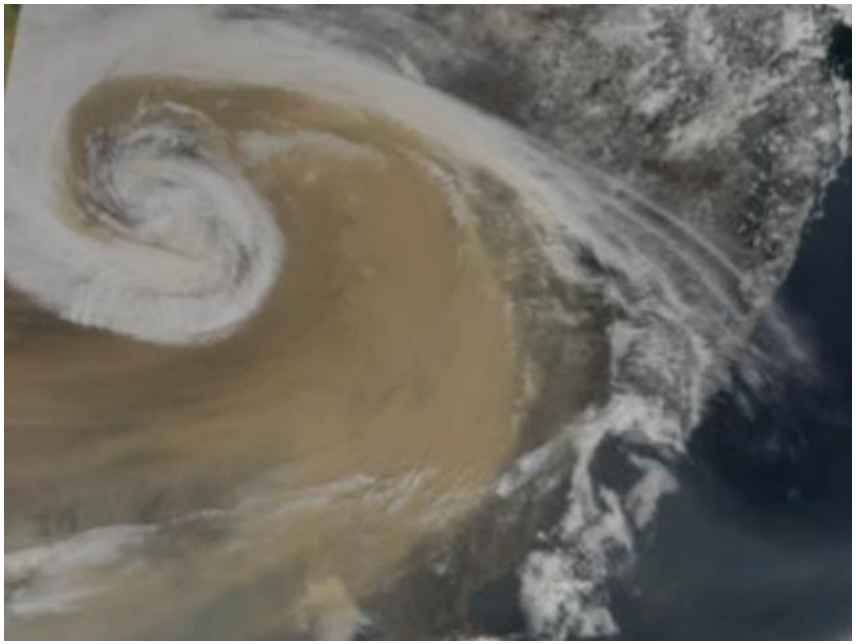
Knowledge for sustainable development

- Knowledge
  - Key for sustainable development (Sierra, Shapiro)
  - Much known about causes, consequences (+talks)
  - We fall short on linking knowledge to action (Gayle)
- Realizing the potential contribution of knowledge requires progress on at least 3 fronts (Leach):
  - Recognizing that knowledge is power, and thus that the struggle of mobilizing knowledge for SD is an inherently political one.
  - Engaging users to identify what knowledge **they** need to act
  - Mobilizing R&D to produce that knowledge, in ways that…
    - Integrate knowledge of practitioners, outside experts
    - Assure access by all to the fruits of such knowledge mobilization

How to get on with the job?
Avoid three Causes of Death…

1. **Fragmentation** of the knowledge system into disciplinary, organizational silos
2. **Failure to learn** from experience in a world of ignorance, complexity & surprise
3. **Mutual incomprehension** among even well-intentioned stakeholders, (conservationists, development experts, farmers, ministers, men/women…)

Symptoms of fragmentation: What has flattened yield increases in Asian rice?

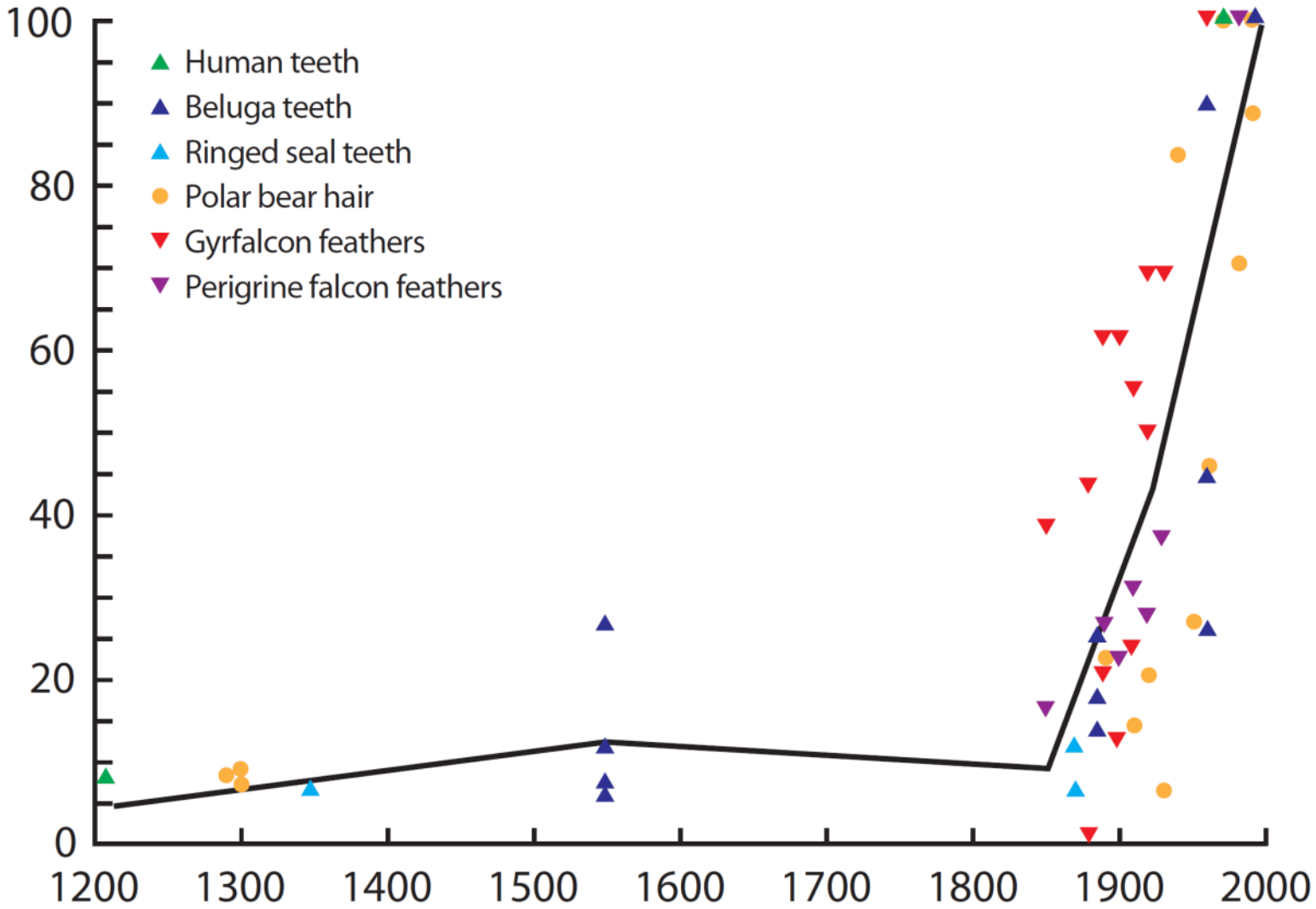


- Soil depletion?
- Resistant pests?
- Changed harvest practices…
- Climate change?

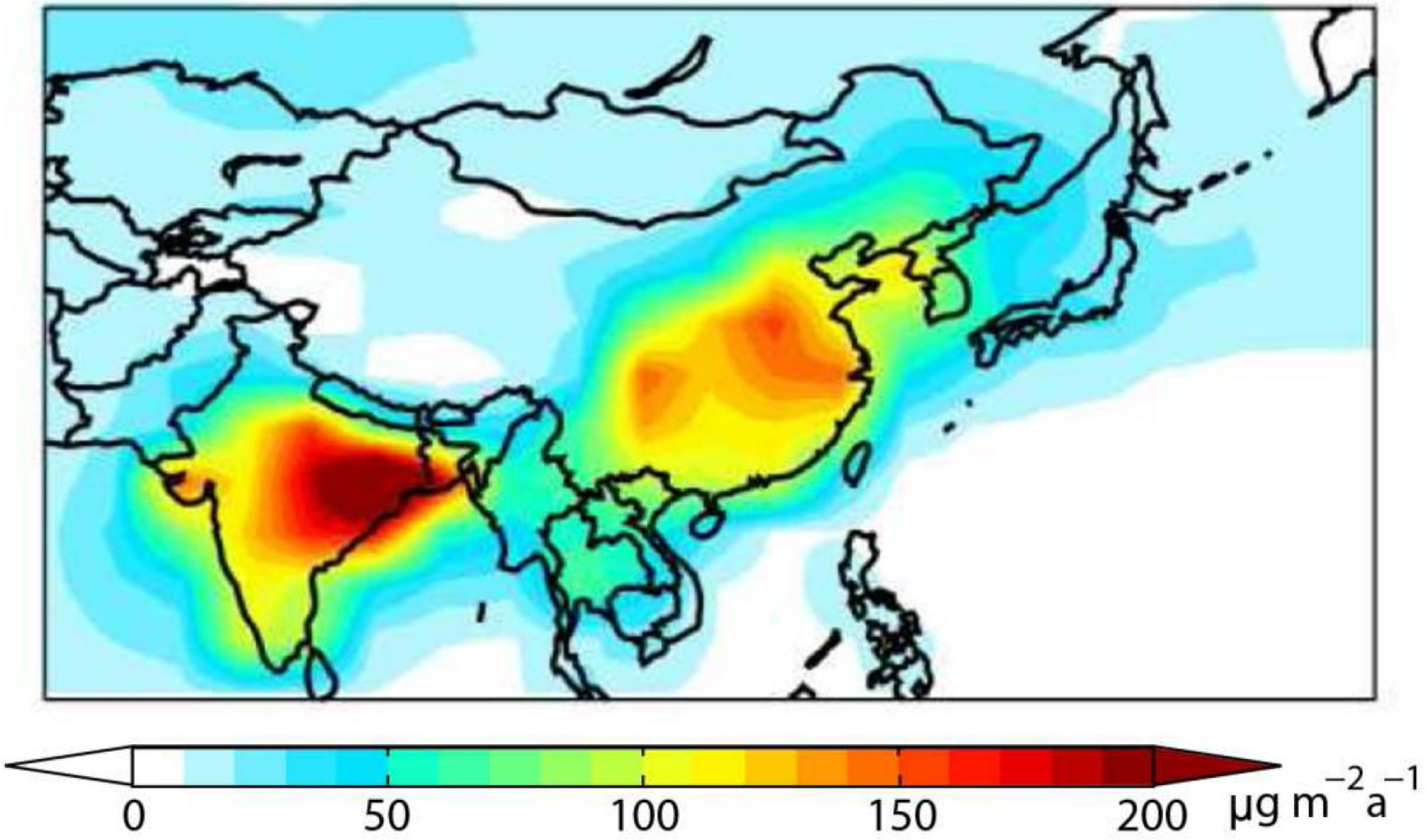
What will kill the last tiger?

1. Habitat fragmentation?
2. Climate change?
3. Other pollution?
4. Agricultural expansion?
5. Hunting?

Mercury in Arctic Wildlife

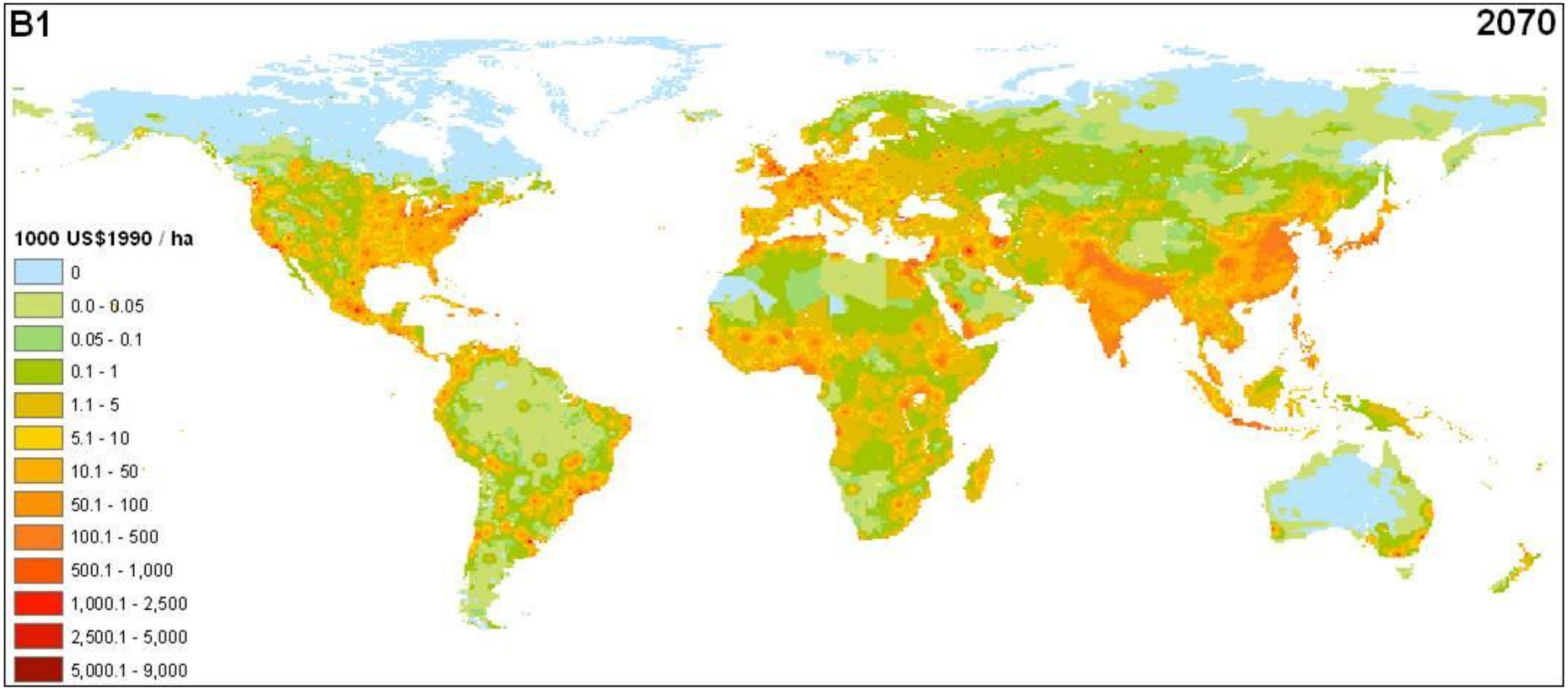


Mercury Deposition 2050 (A1B)



(Corbitt et al., 2011)

Intensity of Interactions between People and Nature (Foley panel)



GDP Density 2070

(Grubler at al., 2007)

Multiple stresses on people, too…

- Khawar Mumtaz….
  - Cropping patterns, agricultural inputs, forest services, dams and fish, etc.
- Suzanne Ehlers….
  - Climate change, decreased yields, scarce water, women's health….
- Others….

Fragmentation: Diagnosis

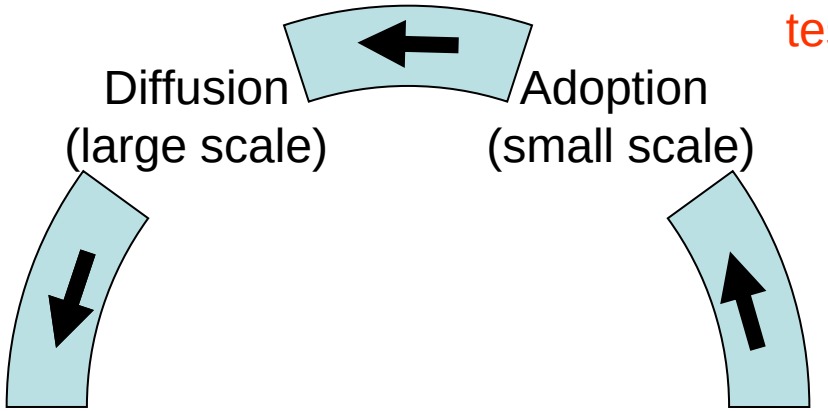
- Need to move beyond siloed focus on single stressors, causes, impacts…
- Toward integrated understanding of the multiple dimensions of sustainable development…

$$W = f\,[(C_n, C_h, C_m),\ P,\ I,\ K]$$

Fragmentation: Prescription

- Project-oriented management focused on achieving *specific* qualities of well-being, equity, ecosystem integrity… as valued by *particular* stakeholders (a la Leach talk) …

Project oriented management: Linking ENSO forecasts to farmers



Large scale deployment of decision support system

Initial field testing, revision

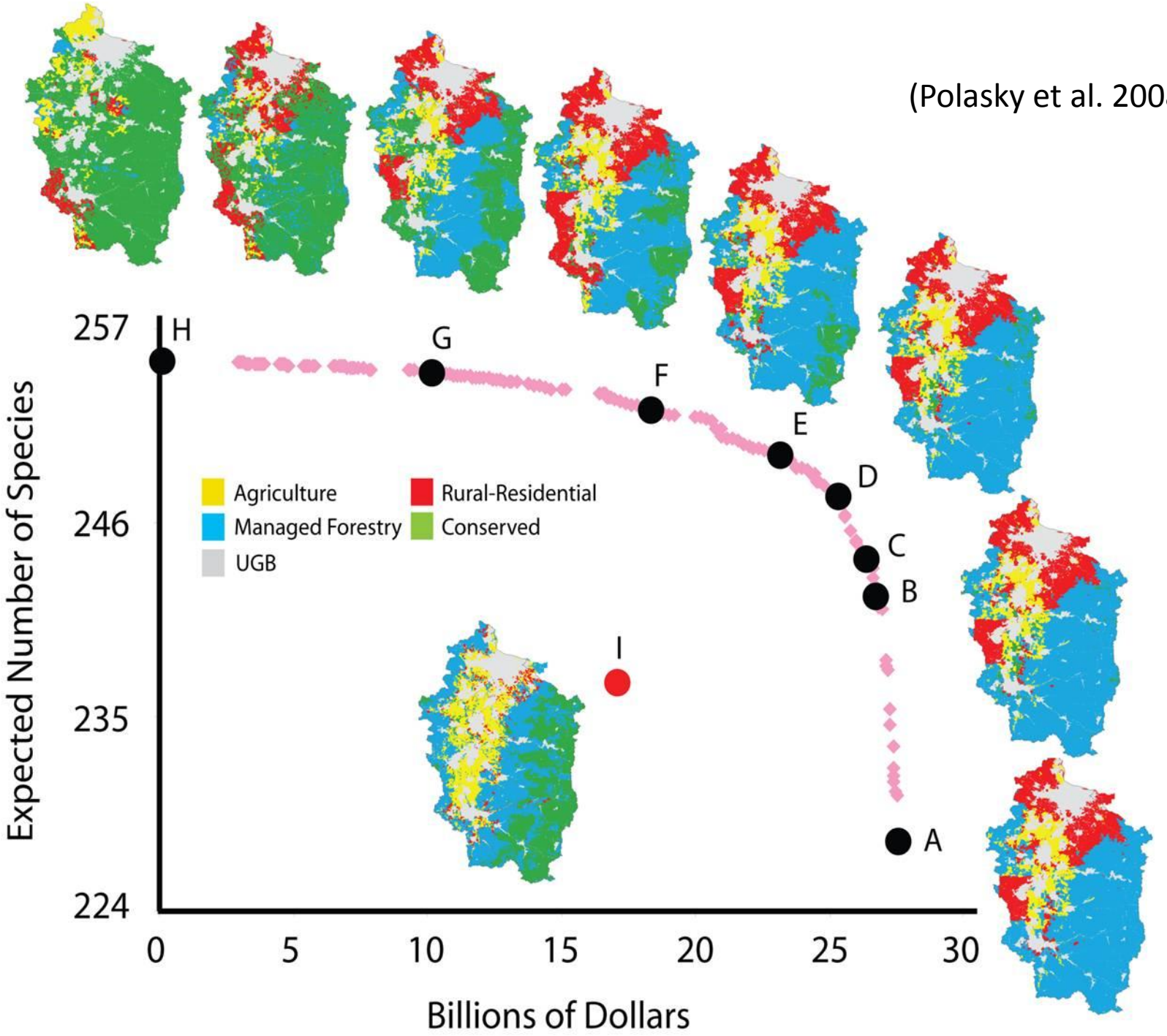
Farmers benefiting from forecasts

Development of decision support tools for farmers

Basic research on climate forecasting

Fragmentation: Prescription

- Project-oriented management focused on achieving *specific* qualities of well-being, equity, ecosystem integrity… as valued by *particular* stakeholders (a la Leach talk)
- Not decisions, but **decision-support tools** (a la de Abreu talk)… accessible to all.


(Polasky et al. 2008)
257
246
235
224
Expected Number of Species
0
5
10
15
20
25
30
Billions of Dollars
H
G
F
E
D
C
B
A
I
Agriculture
Managed Forestry
UGB
Rural-Residential
Conserved

Land Use Tradeoffs (Indonesia)

LAND USE SYSTEM	C storage (tC/ha)	Biodiversity (plant sps)	Taxable Profit ($/ha)	Local Livelihood
Forest	306	120	0	Hunter/ gatherer
Agroforest	80	90	110	$
Oil palm	60	25	120	$$
Cassava	2	15	60	Subsistence farmer

(CGIAR/ Tomich et al., 1998)

Cause of death #2: Failure to learn…

- Diagnosis (Why is there a problem?)
  - Human-environment systems are complex, adaptive… we won't get management right.
  - Experience of other times, places invaluable but few forums to learn from others
  - Incommensurate/incomplete data (Shah talk)
  - Incentives to hide failures rather than learn from them
  - Willful ignorance and motives to block learning

Failure to learn: Prescriptions

- Knowledge systems to *learning systems*
- *Polycentric (multi-level) governance* institutions, with capacity for
  - adaptive management, final decisions closely attuned to local realities (Mumtaz talk)
  - reflection (evaluations and metrics that reward improvement rather than pass judgment)
  - creating “safe spaces” needed for true experimentation…

My favorite “safe space”:
“Dock” of the Office of Naval Research

“Safe spaces” for experimentation

- Need for knowledge systems to create, and donors to support, “safe spaces” (Senge panel)
  - Vulnerable groups can have seat at the table
  - politically sensitive questions, experiments can be pursued
  - innovative scientists are protected from hostile takeovers
- Key roles played by associations, universities, international research centers in providing safe spaces for collaborative learning
  - *TWAS workshop on skilled practitioners “bad dreams”*
  - *ICRAF work on forest cover and hydrology*
- Safe space for work of CARE-WWF Alliance?

Cause of death #3: Mutual Incomprehension among stakeholders

- Diagnosis (What's the problem?)

"The elephant in the room is a cow" (Foley)

But what's a cow?

It depends on who you ask… (Leach)

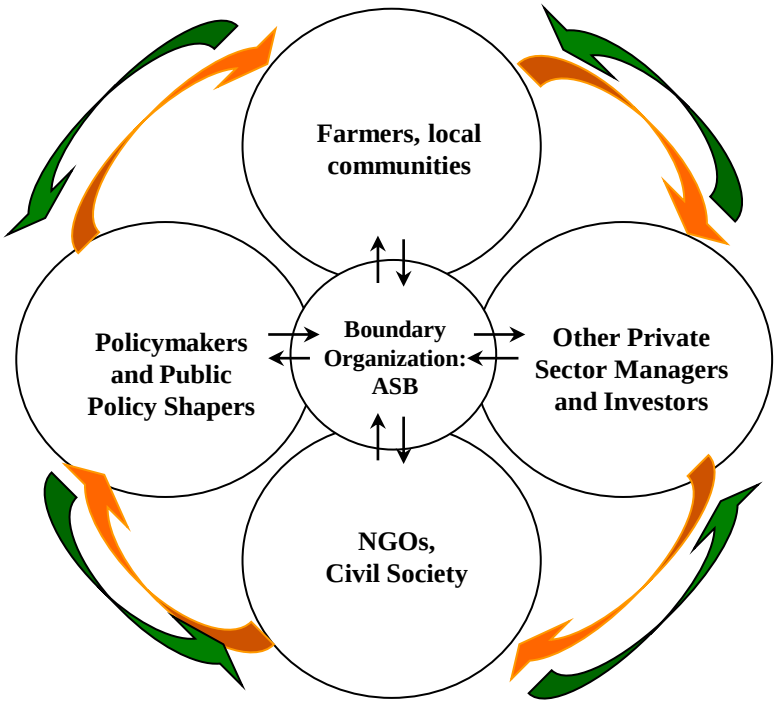
Mutual Incomprehension among stakeholders?

- Different stakeholders in the space where the Alliance and its cousins operate have different perceptions of problems, goals, solutions, and what constitutes reliable knowledge
- We say the same words (sustainability, resilience) but hear different things.
- We ***want*** to trust one another… but find trust strained when you act on your understanding (eg. of sustainability) in ways inconsistent with what I thought you meant by it…

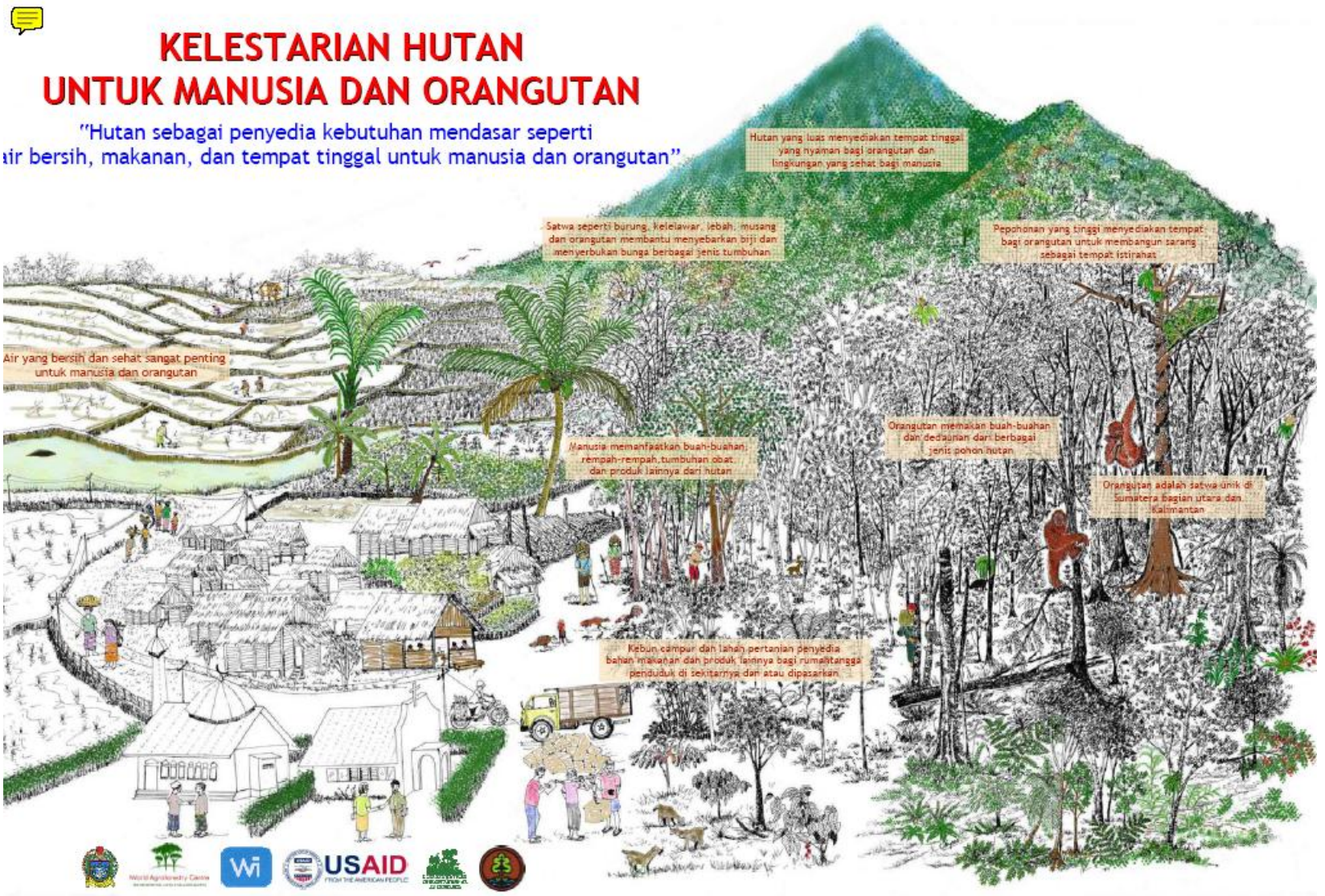
Mutual incomprehension: Prescription

- Reject pipe-line models of one-way knowledge transfer to users
- Promote *collaborative production* of use-driven R&D
- Foster a capacity for *boundary work* (Senge panel)….

Foster “boundary-spanning” capabilities?



A Boundary-spanning Object…



Capacity for Boundary Work?

- The essential feature of “dual accountability”…

Linking Knowledge with Action: *Summary Agenda for the Alliance*

- **Fragmentation** of the knowledge system
  - Systems integration via *project-oriented management* for specific goals, stakeholders
- **Failure to learn** from experience
  - From knowledge systems to learning systems, via *safe spaces* for useful failure
- **Mutual incomprehension**
  - *Collaborative production* of *trusted* (SCL) knowledge, facilitated by *boundary work*