SOCIAL - ECOLOGICAL FISHERIES RESEARCH

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Balancing the production and communication of science – personal reflections from a case in fisheries

Prof. Dr. Robert Arlinghaus[1,2]

[1] Department of Biology and Ecology of Fishes, IGB

[2] Division of Integrative Fisheries Management & Integrative Research Institute on Transformations of Human-Environment Systems, Humboldt-Universität zu Berlin

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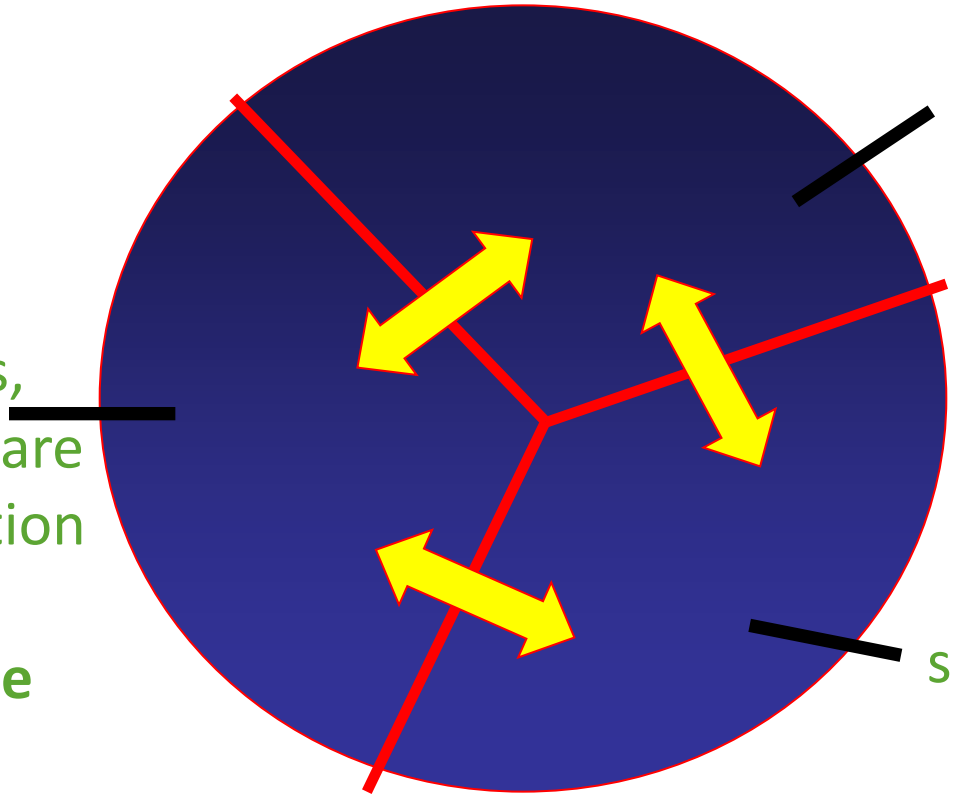
Ingredients to success in academia?

1. Science – theory, papers, models, software – communication to immediate peers – **science inreach**

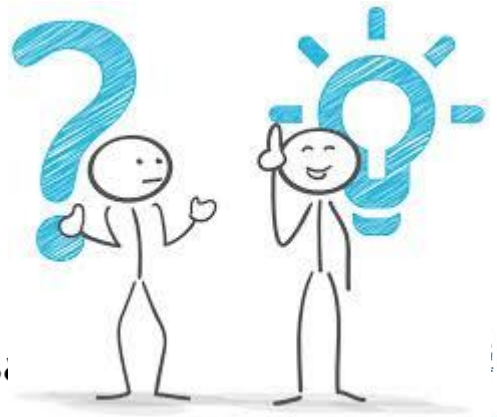


2. Scholarship – training the next generation of scientists, leadership – **science crossreach**

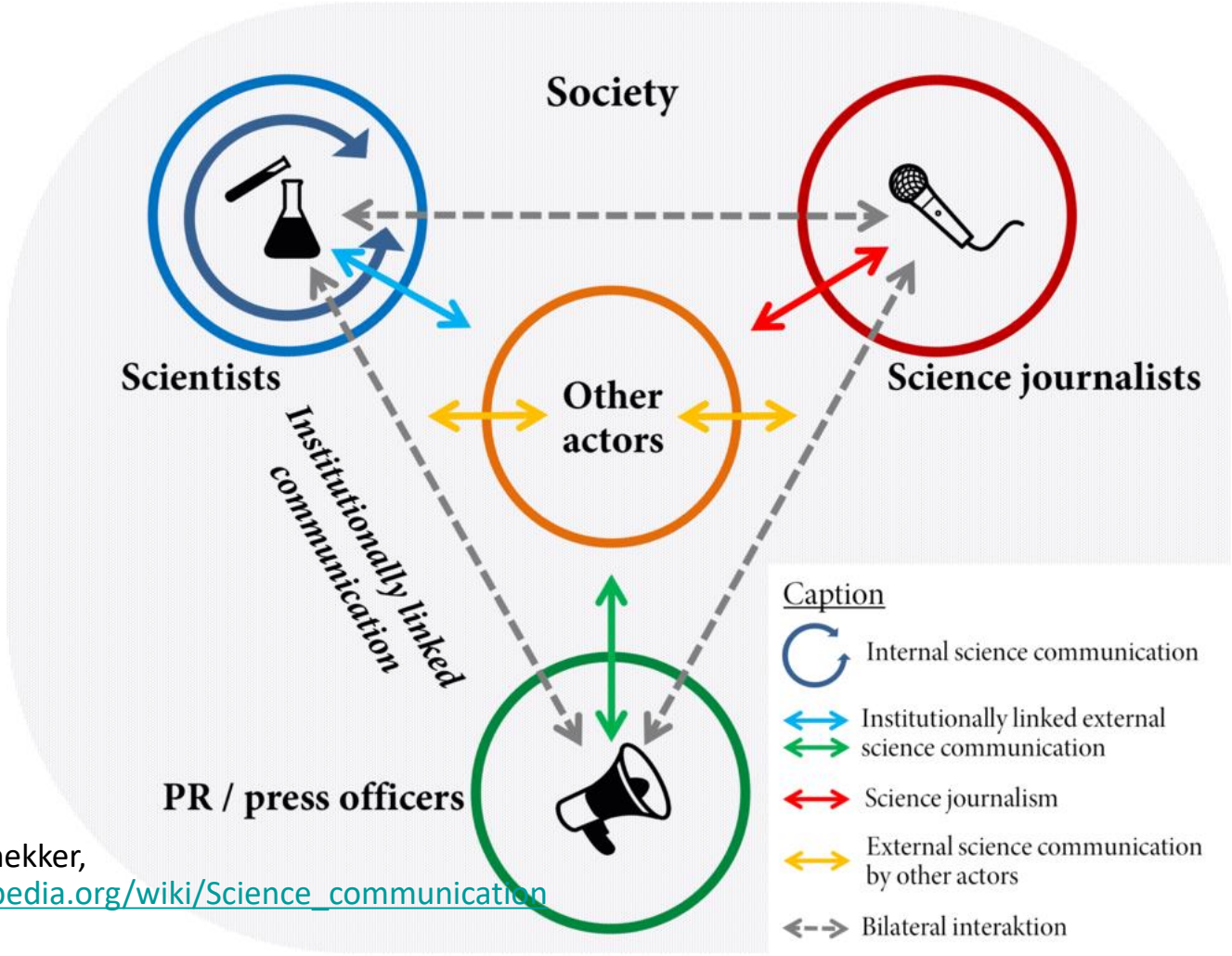
3. Policy and management – social impact, public understanding of science, **science outreach**

Production vs. communication of science

- **Science in- and crossreach** = keeps you in business
- **Science outreach** = becoming relevant in society outside science
- **Science communication (SciCom) –** the use of skills, media, activities and dialogue to produce: awareness, enjoyment, interest, opinion-forming, understanding (Burns et al. 2003, Public Under. Sci.) (… and I add ….) better decisions



Should I (as researcher) get involved?



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https://en.wikipedia.org/wiki/Science_communication

Applied Sciences in Germany

„The BMBF [German Ministry for Education and Research] will elevate science communication to a central component of the BMBF-related funding“ (BMBF 2019)

Minister Karliczek in press release 2019:

„Science communication must become a self-evident component of scientific work“

Survey by Association of German Universities

DEUTSCHER HOCHSCHUL VERBAND

Köpfe die Wissen schaffen

A non-representative poll on the question „Do you think this [making science communication a criterion of science funding] is a good idea?“ revealed:

98.1 % Nos (N = 647)

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Benefits

- Social rewards: linking scientific and other knowledge bases, improving the competencies of others, integrating knowledge into decision making, highlighting issues before they cause problems

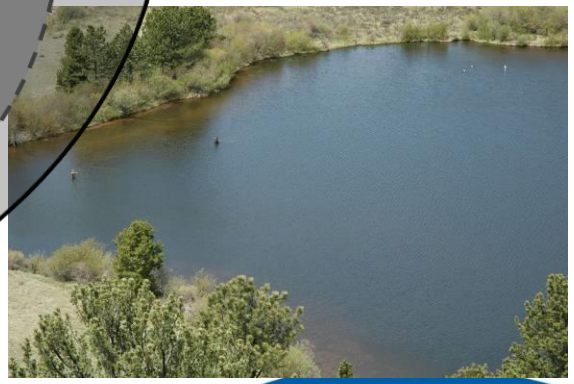
- Organizational rewards: Justifies tax money investment in science, elevated visibility

- Personal rewards: fun, being relevant, helps identifying (socially) important messages/topics, improved communicator

Costs

- Important trade off with time
- Access to competencies and resources
- Strong competition in attention with other news
- You will not make everybody happy
  - Acceptability among immediate peers may decline
  - May loose standing as “honest knowledge broker”

Example of fisheries science and SciCom



Arlinghaus et al. (2013), FME

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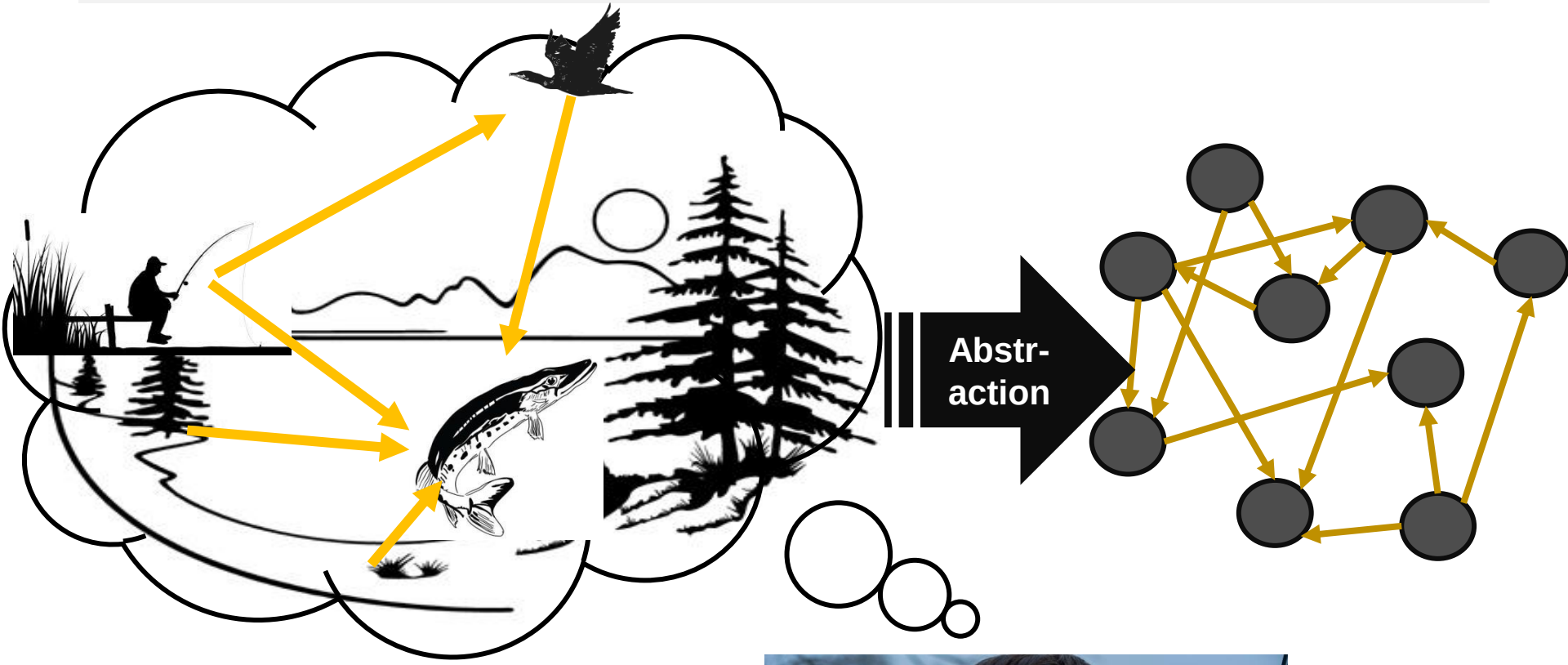
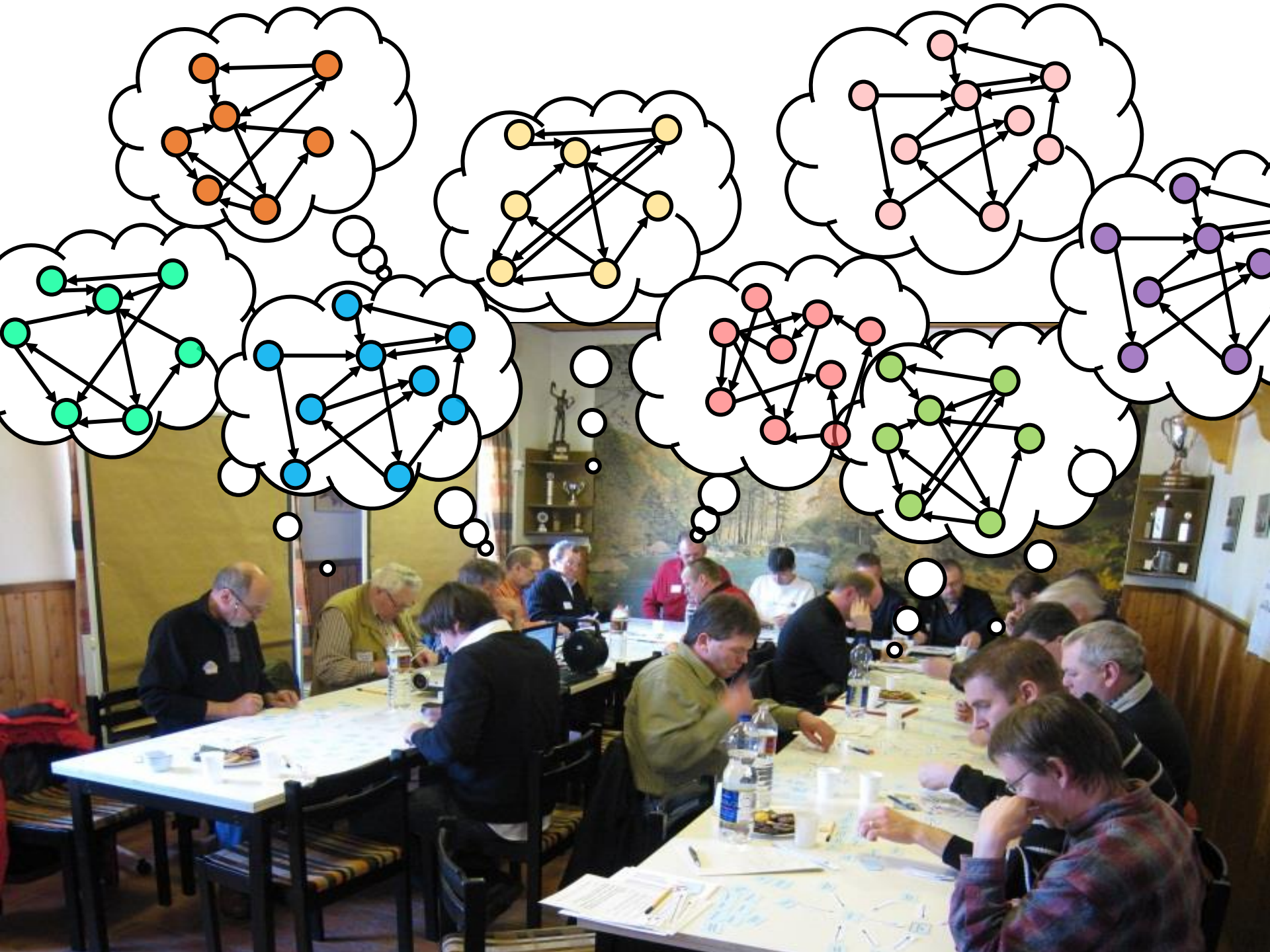
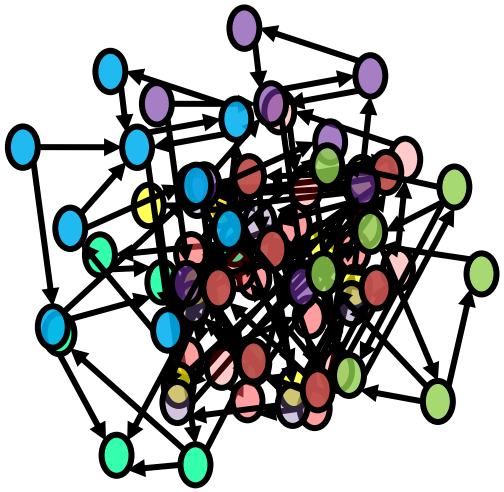
How fisheries scientists think

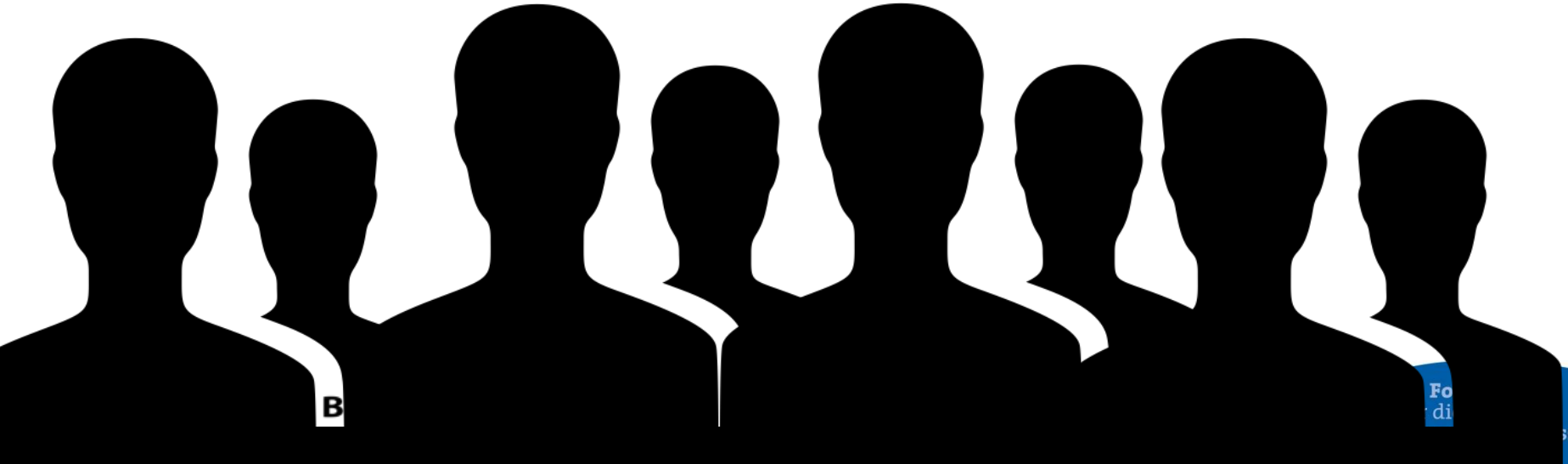


How fisheries stakeholders think

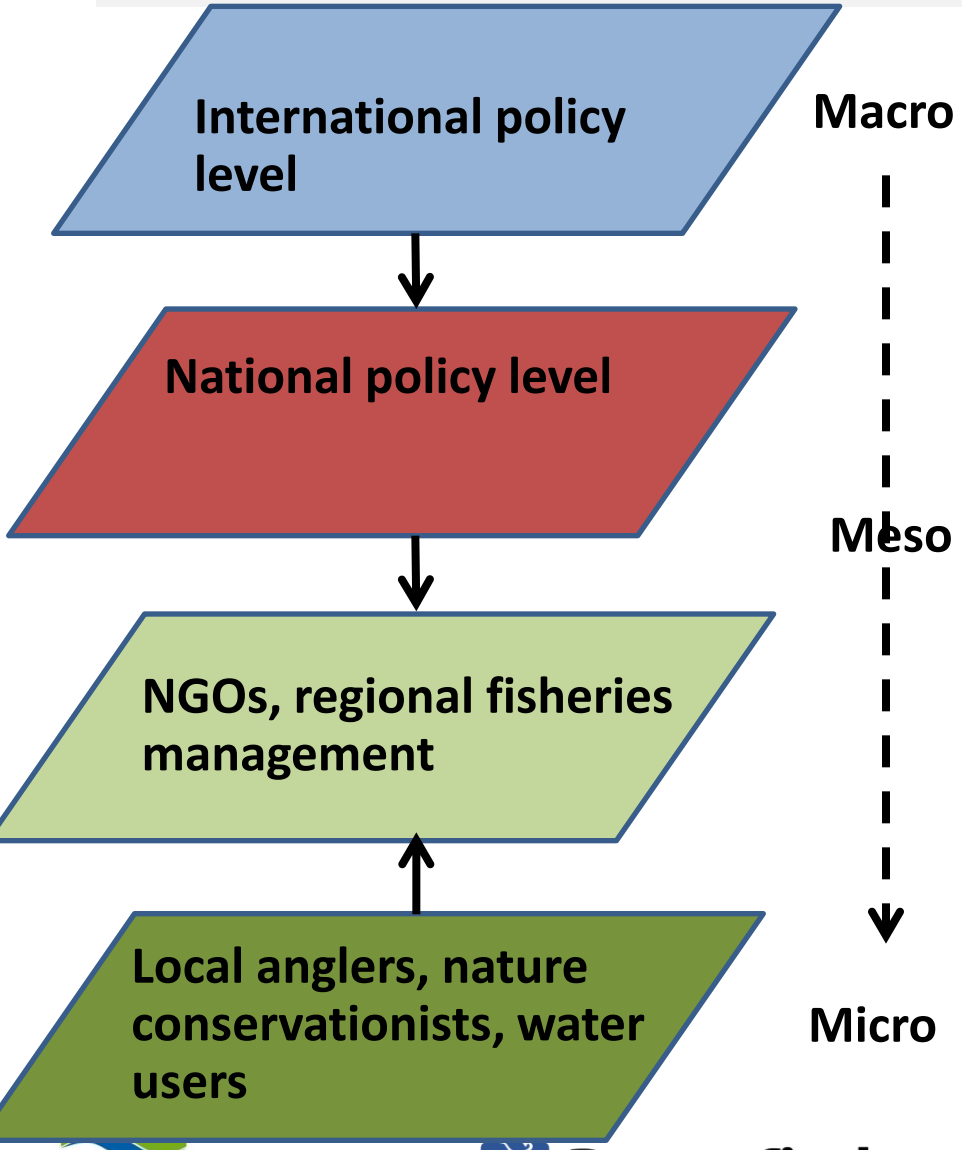


Fostering common understanding?



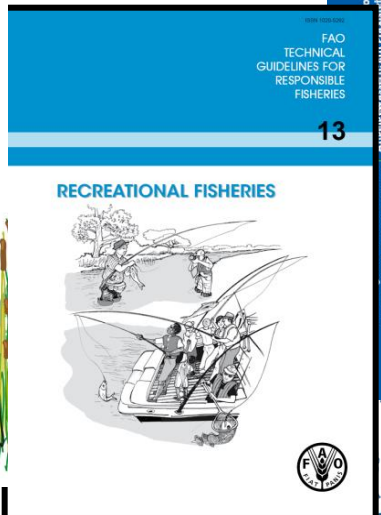


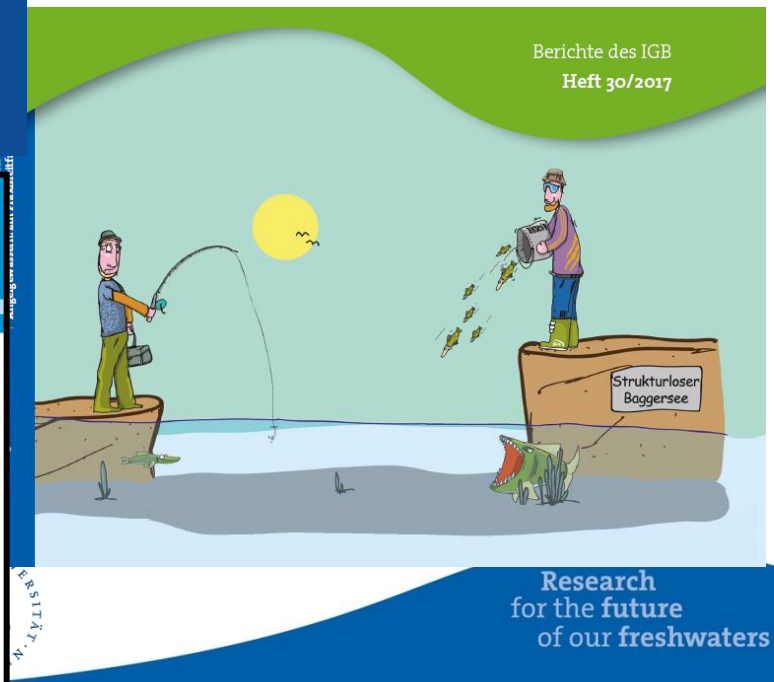
Target audiences



1. Macro likes standard science products, presented in an accessible way
2. Meso gets fired up not by dry papers but by problems and media reports
3. Micro-level enjoys stories in lay language, administered through various channels and with a grain of humour

Multiple channels, co-production of knowledge & transdisciplinarity





Effective science communication entails: (Fischhoff 2013, PNAS)

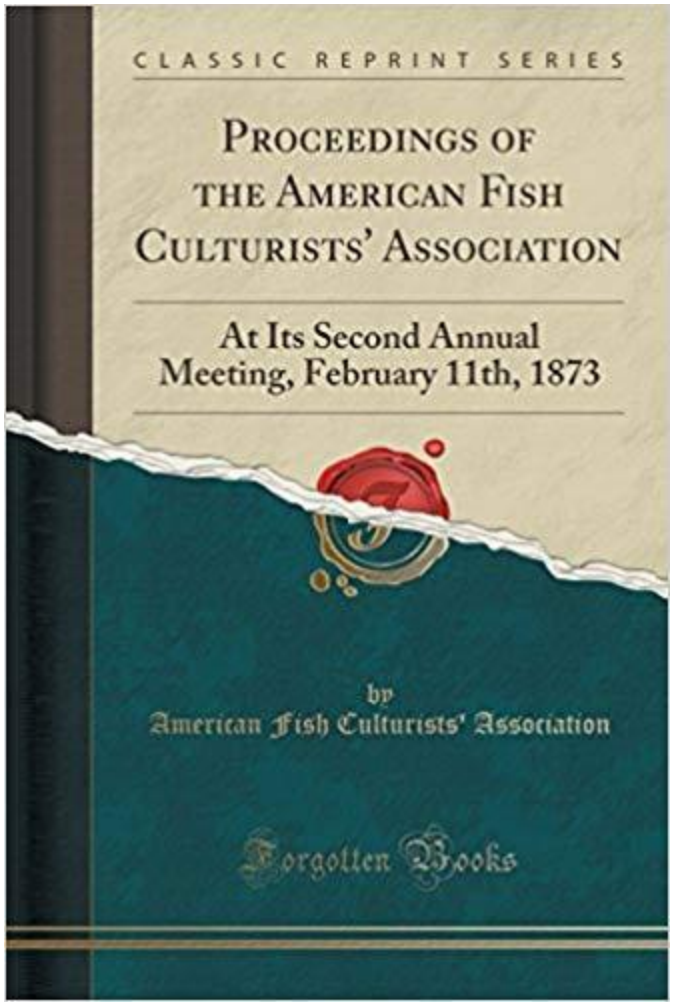
Task 1: Identify the science most relevant to the decisions that people face.

Task 2: Determine what people already know.

Task 3: Design communications to fill the critical gaps (between what people know and need to know).

Task 4: Evaluate the adequacy of those communications.

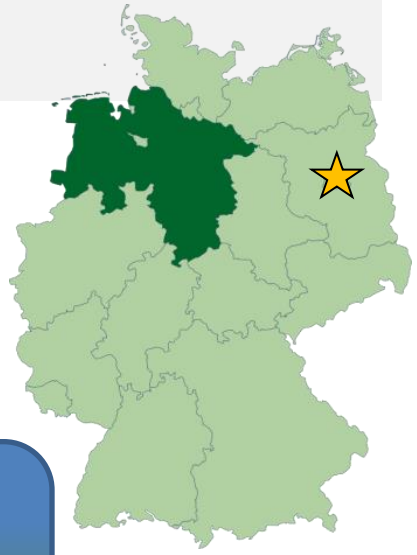
Fish stocking = DNA of inland fisheries management



- Stakeholders love it
- Rarely works
- Has environmental costs
- How can we learn together?

Joint learning experiment

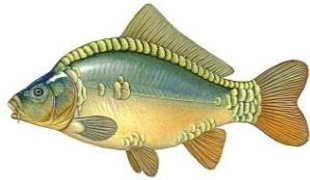
17 Angling Clubs in Lower Saxony
randomly assigned to



6 Control Lecture Clubs

6 Stocking Lecture Clubs

5 Clubs with Stocking Lecture + Transdisciplinary Cooperation



Pre- Questionnaire

Control Lecture (1.5 hours)

Stocking Lecture (4.5 hours)

Post-Lecture Questionnaire

n = 86

n = 115

Retention Questionnaire

Research for the future of our freshwaters

Planning and evaluation of experiments

Sampling fishes with anglers

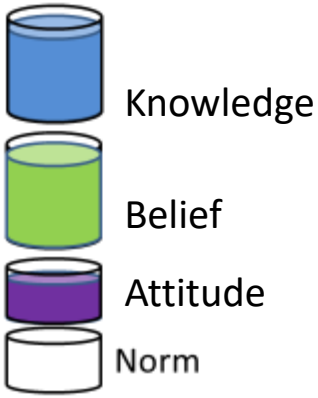
Repeated questionnaire-based assessments of learning outcomes


Besatzfisch
Umfrage
Ihre Meinungen und Erfahrungen zu Fischbestandshege, Besatz und Gewässerpflege interessieren uns
Angelsportverein "Gut Fang" Stapel e.V.
Bei Fragen melden Sie sich bitte bei:
Andrew McFall
Telefon: 030 / 64 181 725
Email: mcfall@igb-berlin.de
Leibniz-Institut für Gewässerökologie und Binnenfischerei
Abteilung Biologie und Ökologie der Fische
Projekt Besatzfisch
Müggelseedamm 310
12587 Berlin
FONA
IGB
Leibniz-Institut für Gewässerökologie und Binnenfischerei

Stakeholder learning effects

Fujitani et al. (2017), Sci. Adv.

Immediate post seminar



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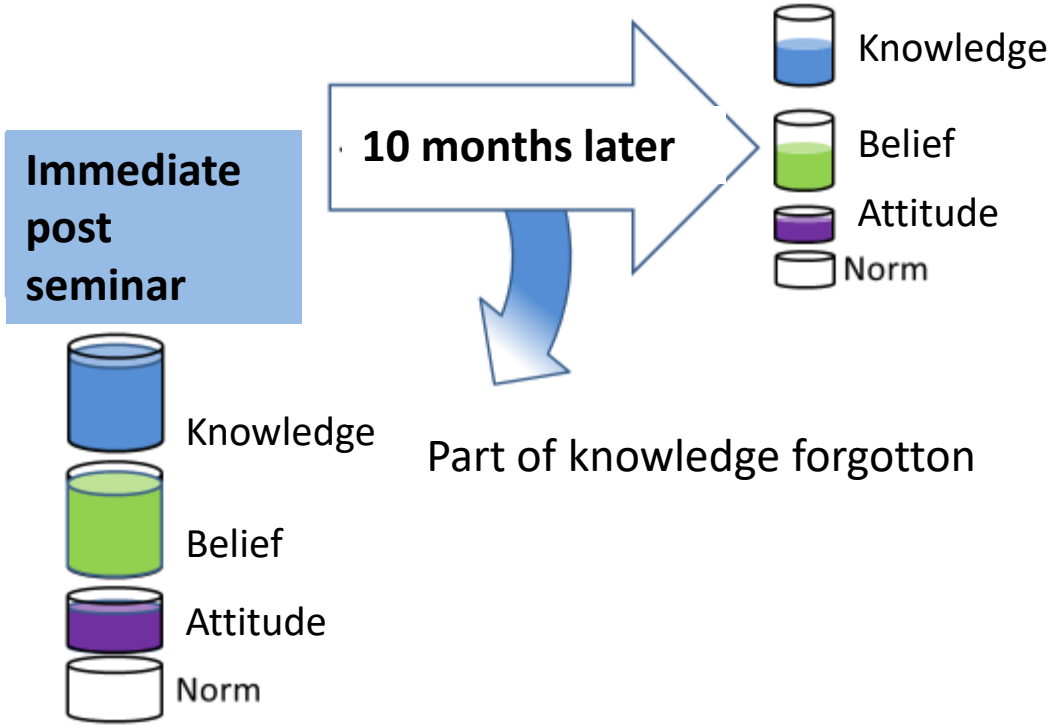
Stakeholder learning effects

Fujitani et al. (2017), Sci. Adv.



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Stakeholder learning effects

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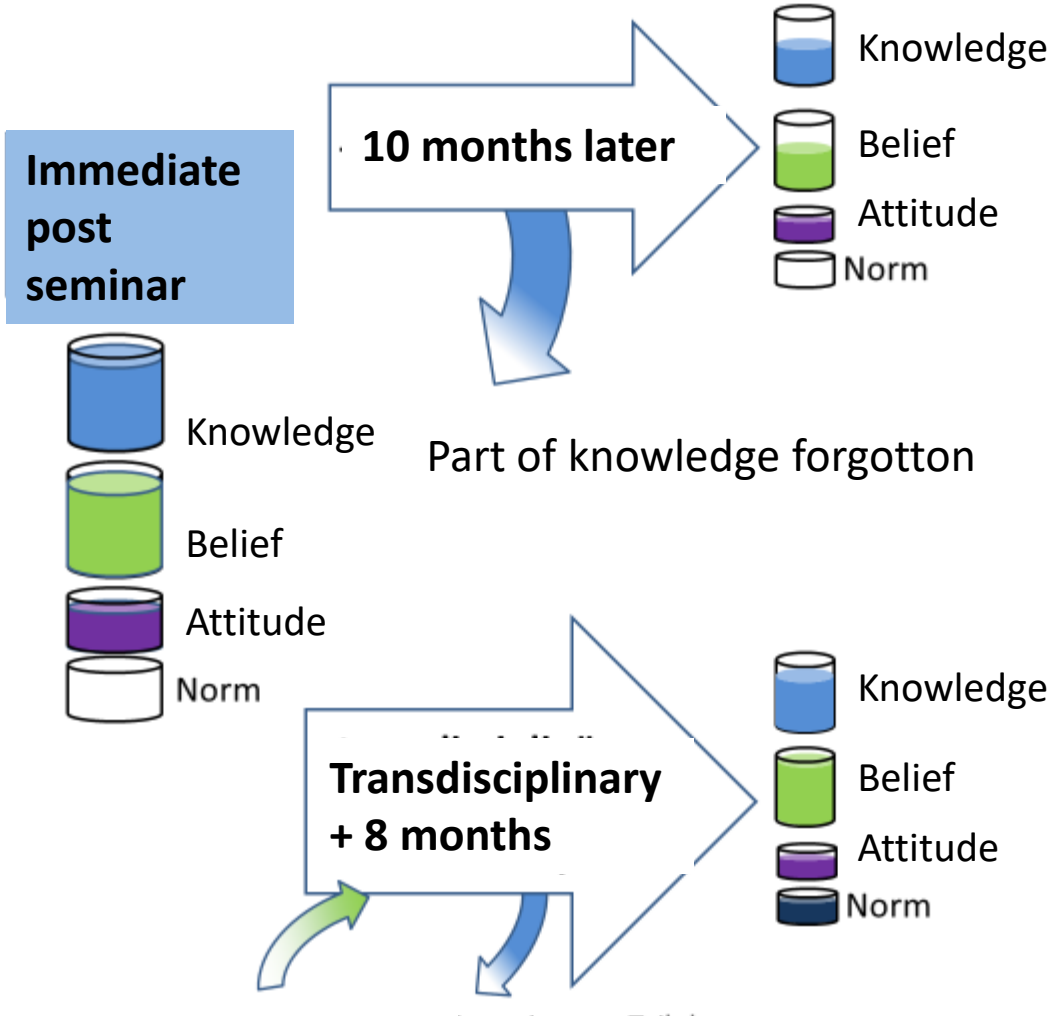

Advice

1. Do strong science first
2. Think carefully what you want to convey, to whom and how, team up, invest resources
3. Learn the unwritten norms, establish trust
4. Develop narrative, but embrace and express uncertainty
5. Stay neutral, do not become an activist

Cautionary notes

1. Accept science is a stakeholder and your personal policy preferences are not more important than those of others

2. Expect that successful SciCom might not be seen as equal in terms of impact in academia or in fact may see disapproval

3. Expect that you will get personalized attacks if some of your messages are perceived as threatening

4. Expect your institution not backing you up in case of conflict

Sincere thanks to team, sponsors + wonderful collaborators and friends

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Dominique Niessner

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Thomas Klefoth

Philipp Czapla

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