

A light blue world map is centered in the background of the slide.

**How to practice critically engaged science
– a case of applying ethical principles in Senegal**

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Cape Town Statement on Geoethics

Definition of Geoethics

Geoethics consists of research and reflection on the values which underpin appropriate behaviours and practices, wherever human activities interact with the Earth system.

Geoethics deals with the ethical, social and cultural implications of geosciences knowledge, education, research, practice and communication, and with the social role and responsibility of geoscientists in conducting their activities.



Scale matters

Global specialty vs. local multi-functionality

- Whether it's peak oil, water availability or global fisheries statistics by FAO, such large-scale analyses and the policy advice derived from them tend to be the domain of technical experts in the respective discipline or large bureaucracies operating in “silos”.
- Further down towards local levels, the patterns become more complicated, because e.g. “water” is linked to many different purposes – drinking, washing, irrigation, fishing, food production and processing – energy, jobs, foreign exchange earnings, ... and local actors must combine them to thrive.

Intersection: formal and informal

It's the economy, stupid!

- half formal and half informal in developing countries,
80% : 20% elsewhere?

It's also governance – who asks the questions and
about what?

Whose questions and perceptions count and can be
voiced at the table?

- Government hierarchies?
- Private companies - “market”?
- Civil society organisations?

Senegal – Guet Ndar fisheries



Social regulation vs state power

Two examples illustrating the mutually beneficial relationship between traditional (social) regulation through the community elders and dignitaries and the public fisheries administration:

- MCS by pirogues in Fass Boye capturing captains of industrial vessels infringing rules and handing them over to the coast guard for fining.
- Prohibition of certain gear and under-sized sardinellas in catches could not always be enforced by under-resourced administrative services, but was enforced by several fishing communities and tacitly sanctioned by attendance of fishing inspectors at the community meetings.



Breakdown of a tacit alliance

World Bank West Africa Regional Fisheries Program (US\$ 28 mio. for Senegal): 80% for management, but **only 12% for research**, after the start

- Supported introduction of **new institutions**: local committee for artisanal fisheries (CLPA) with far-reaching prerogatives trespassing those of the traditional leaders – headed by relatively young people nominated by the prefect – legality vs. legitimacy – fishers are openly defiant to many new rules and restrictions.
- **Global market** demand for Octopus and Largehead hairtail (*Trichiurus lepturus*) absorbs much local fishing capacity and curtails women's access to raw material, undermining their traditional family business.



What is critically engaged science?

Scientists are no social class on their own – they ask the questions of their funders, or do they?

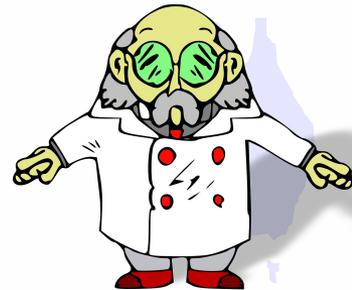
Does and don'ts of critically engaged scientists

Avoid the “expert” trap – complex issues about multi-purpose use of natural resources require expertise in many areas – ordinary citizens are impact experts

Share research in ways understandable for people who are not experts in your discipline

Engage with other perspectives, listen, learn!

Second best solutions may still be working well and be socially and politically acceptable.



Connecting the issues in Kafountine

- Researching viable alternatives to inefficient fish smoking, which leads to deforestation of fragile coast with effects on water table and other activities;
- Analysing pros and cons of fisheries vs. agriculture vs. tourism – how to reconcile flows of costs and benefits to different populations;
- Fish for food in local and regional markets in the Sahel vs fish meal for export;
- Curbing illegal fishing by industrial fleets competing with artisanal fishers;
- Town planning, social services and participatory management.



A huge challenge in practice

Some 15,000 people looking for their food and future



Photos T. Grand, Documentary "Poisson d'or, poisson africain"

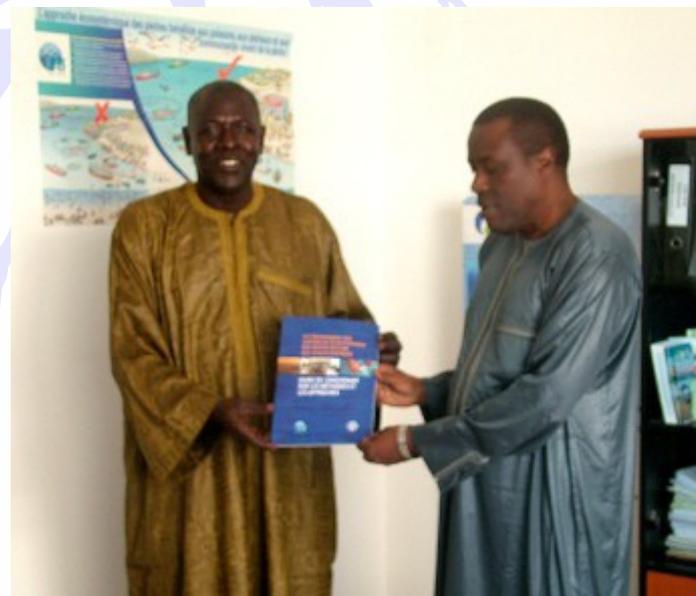
Options for ways forward

Recognition and restoration of the symbiosis between conventional legal institutions and informal instances of social regulation – the latter are spaces for producing alternative law;

Development of a **small-scale fisheries academy** as a collective meeting and learning space blending existing and newly co-produced knowledge from different spheres;

Specific support to women to evolve in their roles according to their aspirations;

Developing learning modules on demand for fishers, e.g. on eco-system approach to fisheries.



**I'm still a baby,
let me live and grow**



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attention**

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