

# INRM

# Master thesis orientation

11 November 2020

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KLAUS EISENACK - RESOURCE ECONOMICS GROUP  
HUMBOLDT-UNIVERSITÄT ZU BERLIN  
[WWW.RESOURCE-ECONOMICS.HU-BERLIN.DE](http://WWW.RESOURCE-ECONOMICS.HU-BERLIN.DE)

# One way to proceed

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- General objective: Conduct own scientific or science-oriented research, guided by a supervisor
- Summer/Autumn: Contact possible main supervisors
  - Check for fit of their topics, competences and availability in relation to your interests and skills
  - Know specific procedures, depending on potential supervisor
  - Be pro-active: In Germany, professors usually don't approach you for a thesis
- Autumn: Agree on topic, read background material, plan your research
  - Plan needs to be agreed with the supervisor
  - Formally, the supervisor suggests the topic, not you
  - After some reading and thinking, adjustments of topic might be possible (but not after official registration)
  - If you consider field work or collecting own data, schedule additional time (sufficiently ahead)

# One way, ctd.

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- Winter/Spring: Conduct your research
  - Intensity of supervision depends on topic, supervisor and possible co-supervisors
- Spring: Register your thesis
  - Find 2<sup>nd</sup> reviewer
  - Passing of the compulsory modules 1–4 is a requirement before registration
  - Hand in official form at Prüfungsbüro, with signature from supervisor, 2<sup>nd</sup> reviewer & final title
  - Official time left after registration: 6 months
- Spring: Write your thesis
- Summer: Submit & defend
  
- Find important forms and information (now also available in English) on:
  - [https://fakultaeten.hu-berlin.de/en/lewi-en/studiesandteachingx/Studies%20and%20teaching/examination-matters/keyword-register?set\\_language=en](https://fakultaeten.hu-berlin.de/en/lewi-en/studiesandteachingx/Studies%20and%20teaching/examination-matters/keyword-register?set_language=en)
  - <https://fakultaeten.hu-berlin.de/de/lewi/studiumlehre/PrfAng/downloads>

# Possible supervisors/reviewer

- One supervisor needs to be a professor or privatdozent (PD) at Thaer (or: prof/PD teaching in INRM)
- The other supervisor needs to be
  1. Either: a prof/PD at Thaer/in INRM as well
  2. Or: an otherwise eligible teacher from a specific list ([file:///C:/Users/jeworski/Downloads/2022-07-29-Betreuer-innen-Liste-Agrar-Gartenbau\\_final\\_Webseite-1.pdf](file:///C:/Users/jeworski/Downloads/2022-07-29-Betreuer-innen-Liste-Agrar-Gartenbau_final_Webseite-1.pdf))
  3. Or: external supervisor with appropriate professional experience (usually: PhD or above)
    - Option (3) eases a master thesis in collaboration with other organizations (e.g. extramural research institutes, firms, NGOs and public administration)
    - Option (3) requires approval by the Prüfungsausschuss (including an application when registering)
    - In the case of such a thesis: check early for qualification of external supervisor
- One supervisor primarily acts as reviewer
- Please find information on thesis regulations on: <https://fakultaeten.hu-berlin.de/en/lewi-en/studiesandteachingx/Studies%20and%20teaching/examination-matters/keyword-register/final-theses-bachelor-and-master-theses>

Prüfer:in 1 an der HU	Hochschullehrende (Prof./J- Prof.)	Sonderprofes- sor:innen (S- Prof.)	Honorarpro- fessor:innen (H-Prof.)	Außerplanmä- ßige Profes- sor:innen (Apl.-Prof.)	Privatdo- zent:innen (PD)	Habilierte WiMi (Haus- halt)	Nicht habili- tierte, promo- vierte WiMi und NWGL (auch DM)	Nicht habili- tierte und nicht promo- vierte WiMi	Lehrbeauf- tragte (pro- moviert) mit gültigem Lehrauftrag	Pers. berufl. Praxis und Ausbildung
Prüfer:in 2 an der HU										
Hochschullehrende (Prof./J-Prof.)	✓	✓	✓	✓	✓	✓	✓ wenn Berechti- gung vorliegt	✗	✓	✓ Per PA-Be- schluss mit Nachweis
Sonderprofes- sor:innen (S- Prof)	✓	✓	✓	✓	✓	✓	✓ wenn Berechti- gung vorliegt	✗	✓	✓ Per PA-Be- schluss mit Nachweis
Honorarpro- fessor:innen (H-Prof.)	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Außerplanmä- ßige Profes- sor:innen (Apl.-Prof.)	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Privatdo- zent:innen (PD)	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Habilierte WiMi (Haus- halt)	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Nicht habili- tierte, promo- vierte WiMi und NWGL (auch DM)	✓ wenn Berechti- gung vorliegt	✓ wenn Berechti- gung vorliegt	✗	✗	✗	✗	✗	✗	✗	✗
Nicht habili- tierte und nicht promo- vierte WiMi	✗	✗	✗	✗	✗	✗	✗	✗	✗	✗
Lehrbeauf- tragte (pro- moviert) mit gültigem Lehrauftrag	✓	✓	✗	✗	✗	✗	✗	✗	✗	✗
Pers. berufl. Praxis und Ausbildung	✓ Per PA-Be- schluss mit Nachweis	✓ Per PA-Be- schluss mit Nachweis	✗	✗	✗	✗	✗	✗	✗	✗

# Writing the thesis

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- Research ≠ writing; both are not “linear”
- Conventions not quite general, depends on topic and epistemic community
  - Clarify early on with your supervisor
  - Always: standards of good scientific practice, including referencing and no plagiarism
- Some typical components
  - Introduction: Motivation of the topic; statement of research question
  - Background on the topic, scientific state-of-the-art for the research question
  - Theoretical background you work with
  - Methodology and research design
  - Results, based on methodology and theory
  - Discussion and broader interpretation of the results / clarifying your contributions to state-of-the-art / critical assessment of limitations / suggestions for further research / policy implications
  - Summary and conclusions
  - References
- Schedule time for final editing



# Master theses at the Resource Economics Group

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# Typical topics

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- Economics, institutional economics and related (e.g. not business studies)
- Topics related to the group's research
  - International environmental agreements
  - Political economy of resource and environmental policies
  - Institutional adaptation to climate change
  - Organizing the energy transition
  - New patterns of environmental cooperation (not social movements)
  - Games and public understanding of science
- Methods
  - Empirical social research
  - Comparative case studies
  - Game theory
  - Simulation models

## Procedure and resources

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- We aim to combine thesis writing with research in the group
- Consult website [www.resource-economics.hu-berlin.de](http://www.resource-economics.hu-berlin.de) to find out about our research
- You can also consult postdocs and docs, ideally in the context of teaching
- This link provides you with further info about our procedures and topics:  
[www.resource-economics.hu-berlin.de/lehre/graduierung/](http://www.resource-economics.hu-berlin.de/lehre/graduierung/)
- The ERE III / AER module is dedicated to research topics where you can prepare your thesis in the group
- If you are interested, please approach us via the informal ‘Master Thesis Request Form’ (see above website).

## List of some topics (subject to updates)

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- Exploring Urban Climate Action: case studies or comparative case studies. Under which conditions do cities contribute to (global) public goods?
- City climate games: Develop game theoretic models that shed light on the functions that cities may have in dealing with climate change on the global level.
- A case of informational governance: Identify a case and conduct a case study on informational governance.
- Resource dynamics and institutional change: a systematic literature review.
- Communicating international climate politics with the simulation game *KEEP COOL*.

# Master Thesis-Program

## Agriculture in a globalized world: Food security and sustainable development

Stefan Sieber, Michelle Bonatti

**SusLAND**  
**Approx.**  
**20 group**  
**members**



Picture: Sieber 2015

**Approx.**  
**45 master**  
**theses**



\*UBA

Picture: Sieber 2017



Picture: Sieber 2017

## Global trends

### Developed countries

- Increase in productivity (use of technology, breeding, management)
- Use of efficiency potentials (digitalisation, sensoring)
- Reduction of environmental damage social cohesion, economic viability



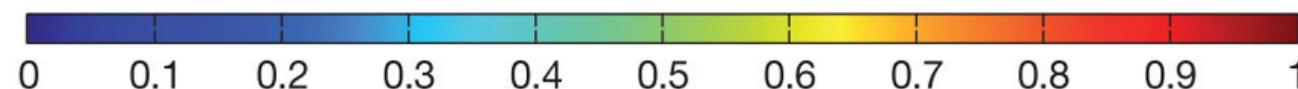
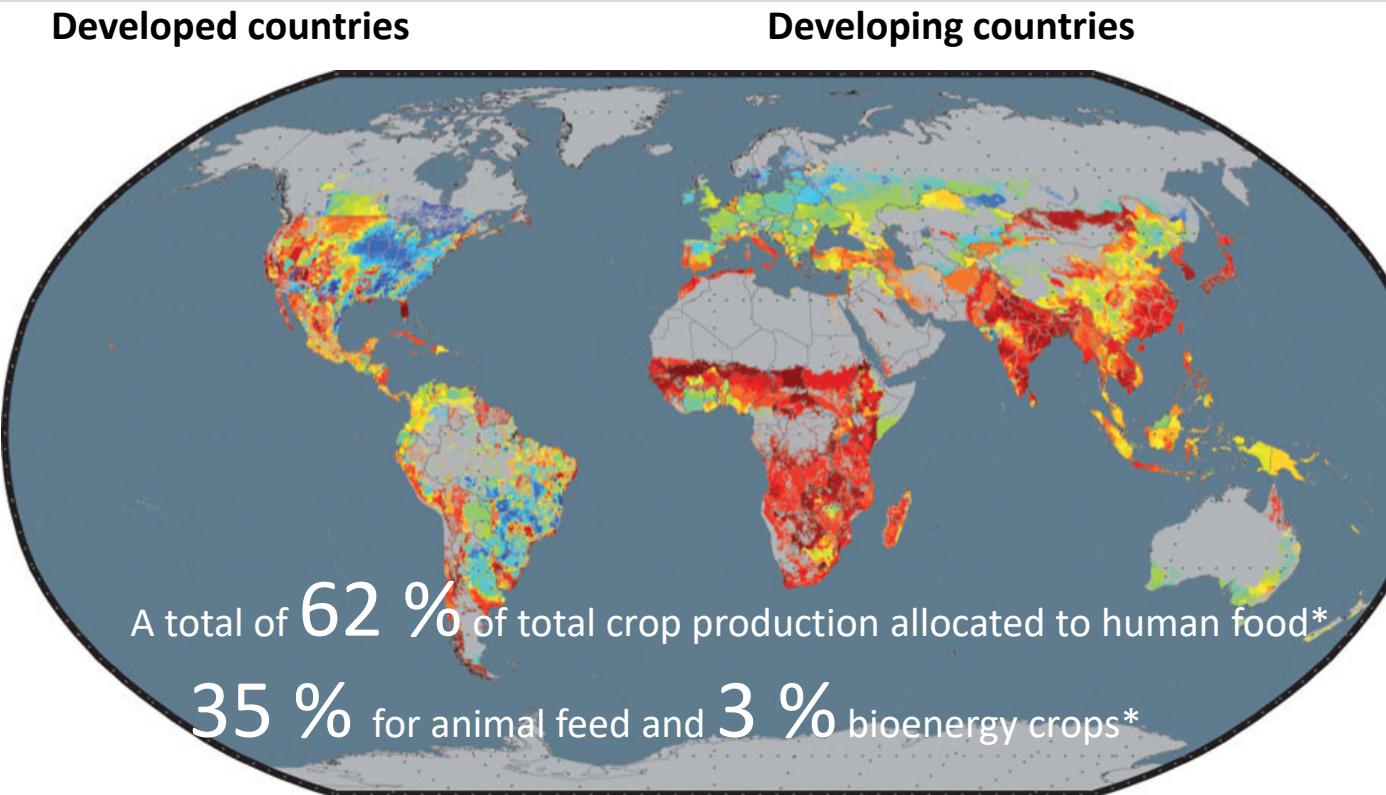
### Developing countries



<https://www.dw.com/de...Deutsche Welle>

- Increase in productivity (inputs, breeding, mechanisation, management)
- Market access - income generation, SMEs, income combination
- i.a. jobs, infrastructure, logistics

## Allocation of cropland to different uses



\*Foley et al., 2011. Solution for a cultivated planet. Nature.

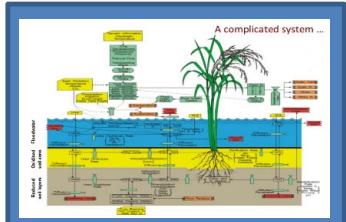
Figure: Allocation of cropland area to different uses: total cropland that is dedicated to growing food crops (crops that are directly consumed by people) versus **all other crop uses**, including animal feed, fibre, bioenergy crops and other products. Averaged across the globe, 62% of total crop production (on a mass basis) is allocated to human food, 35% for animal feed (which produces human food indirectly, and less efficiently, as meat and dairy products) and 3% for bioenergy crops, seed, and other industrial products.

# Research strategies



## 1 Governance strategies

Governance structures to protect or govern regional management



## 2 Co-design of innovation

Implementation processes of Innovations

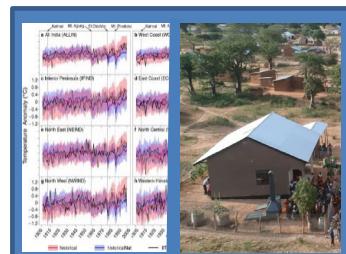


## 3 Dissemination strategies

Up and outscaling models of innovations

## 4 Risk mitigation strategy

Risk management - insurances / crop modelling



## 5 Transdisciplinary action research

Problem definition

## 6 Impact Assessment - Climate

Model simulations / trade offs



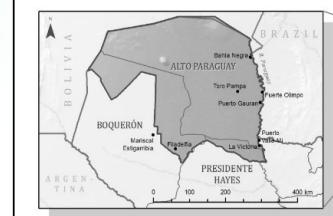
## Research strategy “Governance”

**Governance structures to protect  
or govern regional management**

Savannahs grasslands wetlands



Source: IUCN and UNEP-WCMC (2016). The World Database on Protected Areas (WDPA) [On-line]. April 2016, Cambridge, UK: UNEP-WCMC. Available at [www.protectedplanet.net](http://www.protectedplanet.net).  
 Terrestrial protected areas    Marine and coastal protected areas



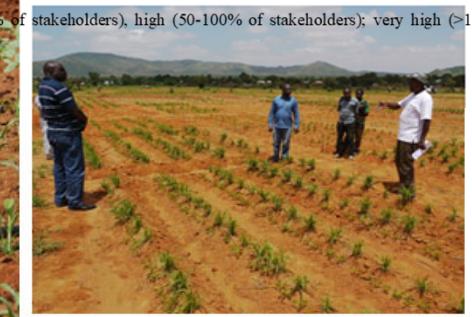
# Research strategy “co-design of innovation”

Upgrading strategies implemented		FVC component <sup>1</sup>	Tested in S-Region	Tested in S-Aregion	Impl. cost <sup>2</sup>	Impl. time range <sup>3</sup>	Stakeholder group type <sup>4</sup>	Adoption rate <sup>5</sup>
<b>1. Rainwater harvesting + 30 %</b>		NR, P NR, P, M	Yes Yes	Yes Yes	none 15-20 € per person	3-5 3-5	B, C B, C	medium medium
2. Bioenergy (Pyrolizer)	PH, E, P, C	Yes	-	35-50 € per pyrolyser	12-24	B	low	
3. Improved processing	PH, E, M	Yes	Yes	1800-2600 € per CSS	13-24	A	medium	
4. Improved on-farm wood supply	E	-	Yes	2-3 € per person	5-10	B	medium	
<b>5. Improved cooking stoves - 40 %</b>	E, C	Yes	Yes	3-4 € per person	6-8	B	Very high	
6. New product development	PH, E, M	-	Yes	3500 € per CSS	24	A	medium	
7. Optimised crop storage	PH, E, M, C	Yes	Yes	2,5-3 € per bag	10-12	B, C	high	
8. Market access system	P, M, C	Yes	-	20-50 € per person	13-26	A	low	
-- poultry/crop integration	M	Yes	-	none	24	C	Low, not fully implemented	
9. Household nutrition education	C	Yes	Yes	none	3-6	B, C	high	
10. Kitchen gardens	NR, P, C	Yes	Yes	1-5 €	3-6	B	high	

<sup>1</sup> Natural Resource Management; NR: Crop/Animal Production; P: Post-harvest processing; PH: & biomass energy supply; E: Markets and income generation; M: Consumption; C: initial investment in € done once; <sup>2</sup> duration in months across different CSS after UPS decision making; <sup>3</sup> well organized farmer group with by-laws, bank account, and official registrations; A: loosely organized farmer group with by-laws; B: no farmer group required; C: <sup>4</sup> Adoption rate: none, low (<20% of stakeholders), medium (20-50% of stakeholders), high (50-100% of stakeholders); very high (>100 new adoptors)

Graef et al. 2017





- 600-800 baby plots/y
- Idifu 73 HH
- Ilolo 53 HH
- Changarave 43 HH
- Ilakala 52 HH

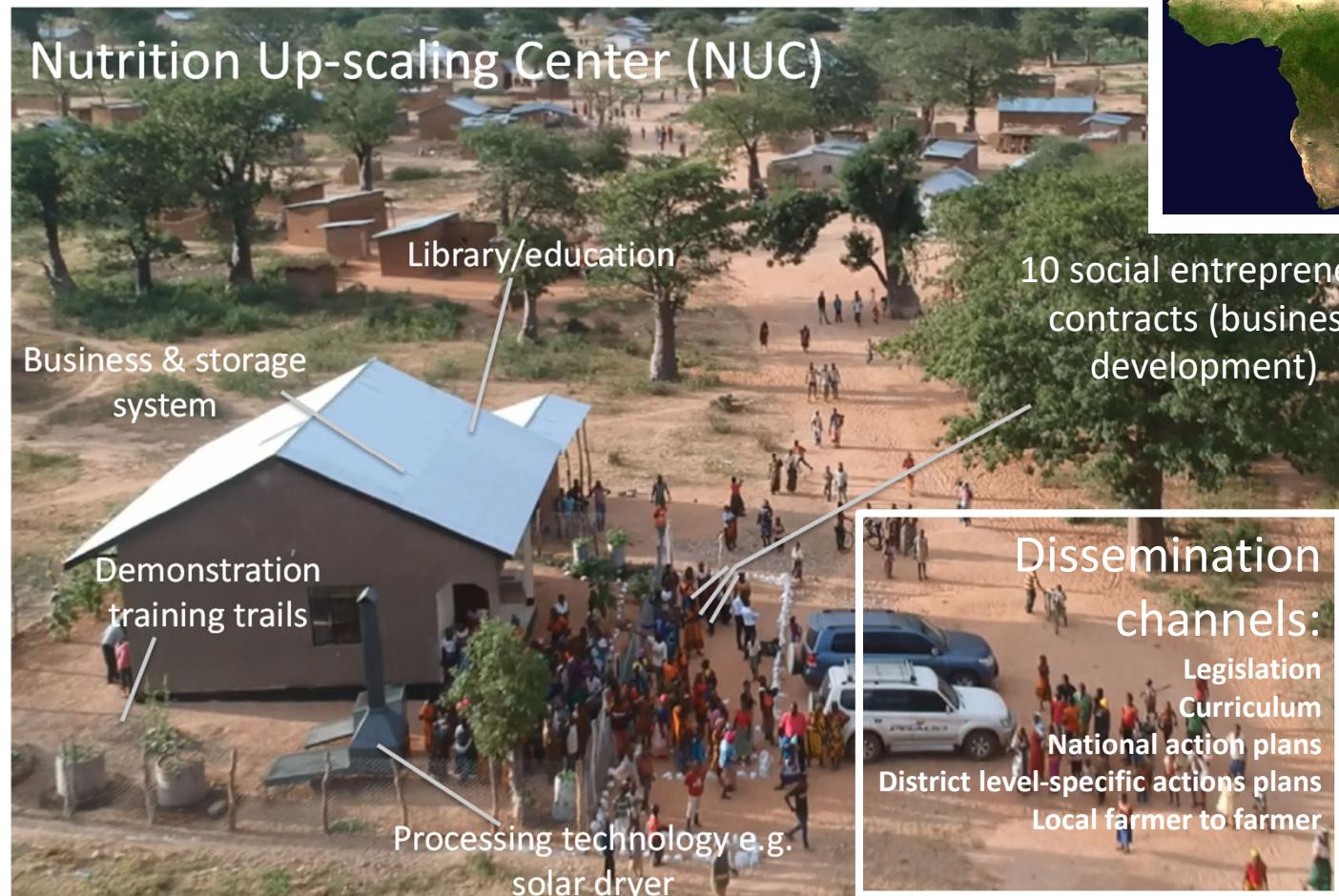
Rainwater harvesting (tied-ridges) Fertilizer micro-dosir on station -> mother plot -> on farm plot





## Research strategy “Dissemination”

### Up and outscaling models



# Research strategy “Risk mitigation”

## Risk strategy

Community-based systems



- IRRI super bags
- Market-oriented storage
- 2-4 Euro / bag

<https://www.riskafrica.com/reaping-benefits-agricultural-insurance-south-africa/>



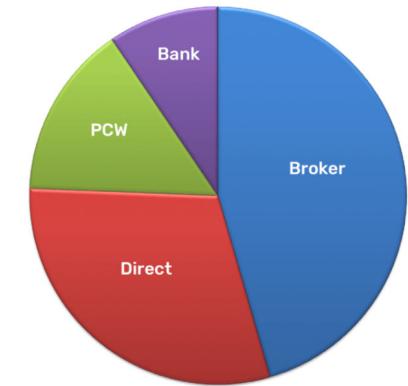
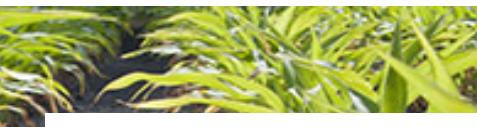
**Types of insurance:**

Community-based:  
Storage capacity  
seed bank systems

Community risk mitigation/credit

Commercial  
Area-yield index  
Crop weather index  
Livestock mortality index  
Forestry fire index

commercial insurance systems



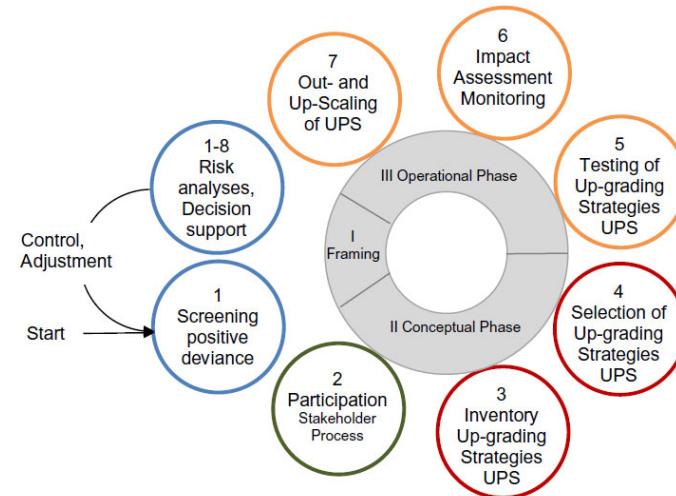
\*PCW = Price comparison websites



<https://www.businesseventsafrica.com/2016/11/04/expect-the-unexpected-risk-mitigation-strategies-for-event-organisers/>

## Research strategy “participative action research”

### Transdisciplinarity Concepts and design in research



## Research strategy “Impact Assessment (IA)”

### Modelling Participative IA

## CGE Modelling / Crop Modelling

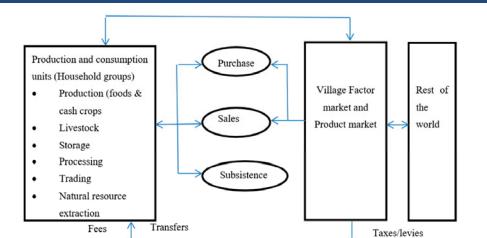
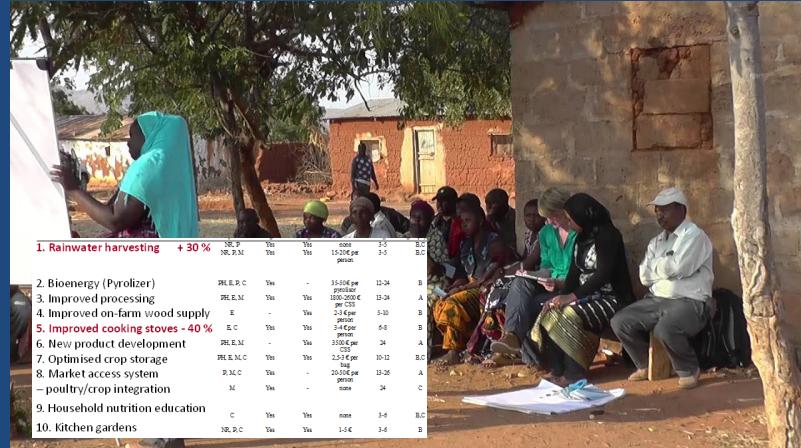


Figure 1: Schematic illustration of the flow of the village economy (Source: www.zalf.de)

**Participative  
domestic edible oil  
production**  
Productivity increased  
Raw material to industry  
Employment, income

## Participative impact assessment on innovations



# Thank you

# Landwirtschaft in der Globalisierung: Ernährungssicherung und nachhaltige Entwicklung

	A	B	C	D	E	Legend:
1. Legislation at higher international or national level	Legislation to overcome technical constraints (e.g. fertilizer bag size at distributors), cooperative enhancement for riding tools	Legislation to construct efficient stoves, tools within defined period and eventual support through micro-credits	Legislation to compulsory learning of tools, machines, devices to be able to store at communities	Legislation to compulsory learning at community schools on nutrition, school gardens to learn		 AB 1a In-situ rainwater harvesting using tied ridges and infiltration pits 1b Fertilizer micro-dosing close to and lateral to the seeds 1c Optimized weeding targeting soil water conservation
2. National Curriculum at university + secondary school level	Dissemination of the good practice in curriculum at university level and national farmer school concepts	Construction plan on technology of stoves, tools and related processes at University for Agriculture	Storage technology, mobile machines (milling i.a.) as technology in technical Universities	Crosscutting University curriculum for nutritionists, nurses, medicine and sanitary professions		 C 2 By-products for bioenergy low-cost pyrolyzer producing charcoal 3 Mobile maize shelling machines and millet shelling machines 4 Improved wood supply through tree planting for tree nurseries
3. National standardised action plan of innovations	General guiding principles for micro-dosing and tied-ridges if applied in local sites throughout the national level	General guiding principles on the construction regard to respective stoves, processing of tools	General guiding principles on the used machines, tools and devices including instructions	Kitchen garden concept through school gardens systems disseminated at community level		 D 5 Improved cooking stoves reducing energy consumption 6 Sunflower oil production including investment in oil pressing 7 Optimized market orientated grain storage-systems in bags 8 Market information access system (m-IMAS) mobile phone
4. Sub-national guiding action plan at district level	Specific innovation bulking (fertilizer, ridges, ties, weeding) in combination as tailored local government agencies (LGAs) - program	Specific dissemination promoter program with bonus for implementation to implement stoves, tools	Specific delivery services at the level of PICS – bags bulking for low-costs purchase, other tools	District level specifics to be defined in promoter programs, regional education, kitchen gardens		 E 9 Household nutrition education improving diversified diets 10 Kitchen garden implementation, training for dietary diversification
5. Sub-district – local farmer to farmer approach	Exhibitions, demonstration sites to successful examples through hands-on-learning. Specific methods such as community radio.	Associations, NGOs disseminate the information via media (school, training, radio, assembly, leaflets)	Associations, NGOs disseminate the information via media (school, training, radio, assembly, leaflets)	Concept on school garden dissemination through farmer or primary schools, other media, teacher		
6. Local – region explicit agricultural innovation	Tailored concepts through extension officer, farmer schools and community representatives to implement innovations	Extension officer, villages promoter to be trained via LGAs to tailor the community programs, schools	Extension officer, village promoter to be trained via LGAs to tailor the community programs, schools	Teacher program at schools, extension officer at farmer schools, children teaching program		

# Landwirtschaft in der Globalisierung: Ernährungssicherung und nachhaltige Entwicklung in Entwicklungsländern



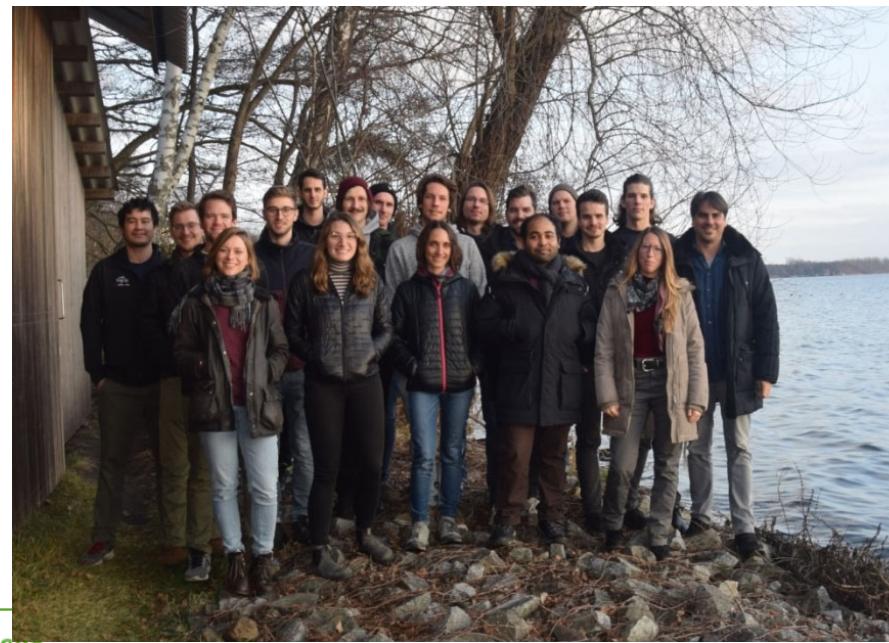
# Who we are ([www.ifishman.de](http://www.ifishman.de))

- Integrative Fisheries Management (IFishMan)
- Lab of roughly 25 people, international composition
- Leibniz-Institute of Freshwater Ecology and Inland Fisheries



@ RArlinghausFish

Forschen für die Zukunft unserer Gewässer



@ ifishman.science



Leibniz-Institut für  
Gewässerökologie  
und Binnenfischerei



SOZIAL-ÖKOLOGISCHE  
FISCHEREIFORSCHUNG

# In a nutshell



- **Goal:** Integrating fisheries ecological and social sciences + science and society to inform sustainable fisheries
- **How:** Theory (modelling) – experiment (ideally whole ecosystem)
- **Paradigm:** Inter- and transdisciplinary, stakeholder-inclusive, method pluralism, science communication  
([www.ifishman.de](http://www.ifishman.de))

# Finding a master thesis at IFishMan Lab

- [www.ifishman.de/stellen](http://www.ifishman.de/stellen) - find a topic from the list, sent in CV and transcript of records and explain in a motivation letter why you want to study with us and the particular topic
- Or you have an idea that relates to fisheries? Sent it in to [arlinghaus@igb-berlin.de](mailto:arlinghaus@igb-berlin.de) and lets discuss

# What you get

- Integration in interdisciplinary research lab using both ecological and social science methods
- In-depth supervision (usually paired with PhD student, post-doc)
- Financial support for presenting at conferences
- We prefer candidates with research interest and interest in publishing the thesis as a paper

# Past thesis done by INRM students

- Inland fisheries governance in Albania
- Marine protected area in Indonesia: stakeholder perspectives
- Understanding conflicts in coastal fisheries
- Understanding fish stocking decisions in German angling clubs
- Biodiversity conservation and species distribution in Columbia  
(co-advisor)
- Choice set formation in outdoor recreationists (just started)

# Current topics that are offered – only the social science ones are shown

- Attitudes of anglers in relation to Atlantic cod management
- Impact of priming during surveys on attitudes of the public towards recreational angling
- Geographic variation in attitudes and behaviours of German recreational fisheries managers
- Analysing social media discourses on sustainable fisheries – culturomics and iEcology (Jelic et al. 2020, Plos Biology)
- For ecology topics, see [www.ifishman.de](http://www.ifishman.de)



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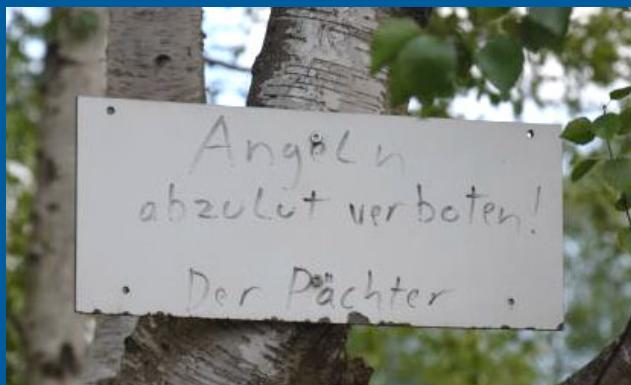


Foto: Malwina Schafft



Foto: Florian Läufer, [www.angelfoto-archiv.de](http://www.angelfoto-archiv.de)



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Gewässerökologie  
und Binnenfischerei

# Aktuelles Masterarbeitsthema

Umgang mit ökologischem Wissen in der  
naturschutzfachlichen Genehmigungspraxis im Kontext  
der Freizeitfischerei

# Hintergrund

Verordnung Naturschutzgebiet

*„besondere Störwirkung aufgrund der langen Verweildauer, ungedeckt am Ufer und der Ausübung zu unterschiedlichen Tageszeiten“*

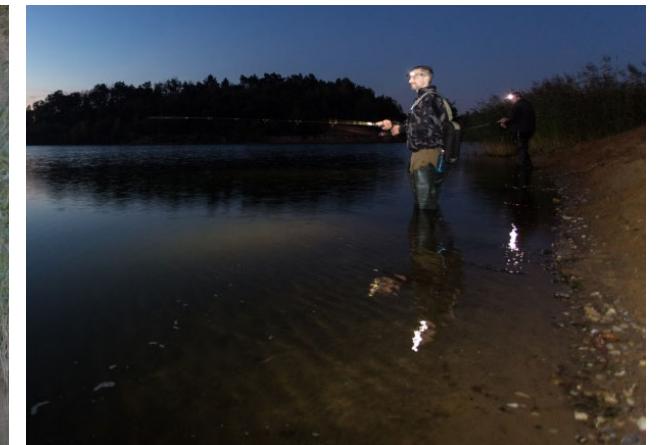
(Landkreis Schaumburg 2014)



Verweildauer



ungedeckt am Ufer



Tageszeiten

# Auswirkungen des Freizeitfischens (Angeln)



Vermüllung



Verletzung



© G. Schaffner



© Bernd Kunrath



Foto: Rick Hanson

Scheuchwirkung



Frassdruck und Habitatveränderungen durch Fische

Trampeleffekte

# Eischränkungen und Verbote

## Naturschutzrecht:

- **Schutzgebiete:**

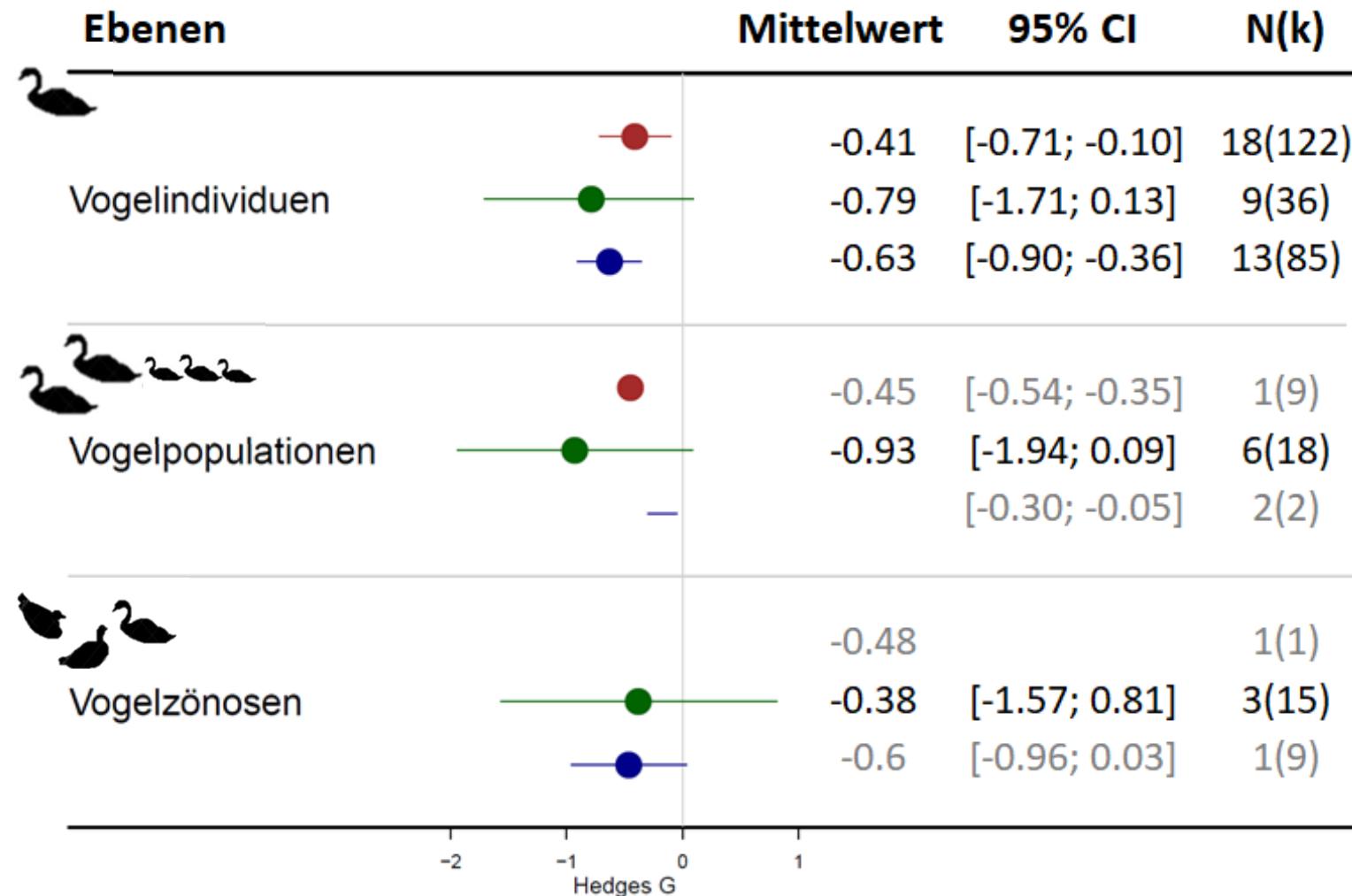
Veränderungen und **Störung**, die zu einer **erheblichen Beeinträchtigung** führen, sind unzulässig (§33, Absatz 1, Satz 1, BNatSchG).

- **Streng geschützte Arten:**

„Es ist verboten, wild lebende Tiere der **streng geschützten Arten** und der europäischen **Vogelarten** während der Fortpflanzungs-, Aufzucht-, Mauser-, Überwinterungs- und Wanderungszeiten **erheblich zu stören**; eine erhebliche Störung liegt vor, wenn sich durch die Störung der Erhaltungszustand der lokalen Population einer Art verschlechtert.“ (§ 44, Absatz 1, BNatSchG)



# Vögel



Angeln:

- Negative ökologische Wirkungen
- Aber nicht signifikant

- Ufernutzung
- Angeln
- Bootfahren

# Methodisches Vorgehen



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## Kodierung von Dokumenten:

Umgang und Verwendung von wissenschaftlichen Erkenntnissen zu „Störung“ in administrativen Vorgängen

- Baggerseen: Planfeststellungsverfahren
  - Planfeststellungsbescheide
  - Artenschutzfachliche Gutachten
- Naturschutzgebiete: Ausweisung von Naturschutzgebieten/FFH
  - Synopsen
  - Naturschutzverordnung
  - Artenschutzfachliche Gutachten

# Kompetenzaufbau

Natur- und Umweltrecht

Verwaltungspraxis

Zielkonflikte Ökologie vs. Umweltmanagement

Interaktion mit Verbänden

... am Beispiel Angelfischerei



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Gewässerökologie  
und Binnenfischerei

# Masterarbeitsthema

## StörBagger Projekt

finanziell gefördert durch den Anglerverband Niedersachsen e.V., Landesverband Sächsischer Angler e.V. und dem Landesfischereiverband Bayern e.V..



Foto: Florian Läufer, www.angelfoto-archiv.de



### Projektleitung:

Robert Arlinghaus

### Betreuung:

Doktorandin Malwina Schafft  
[schafft@igb-berlin.de](mailto:schafft@igb-berlin.de)