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### Researching African environments: lessons for shared research

A new book draws attention to the twists and turns of participatory and integrative research in African environments. The editors present the highlights of the book and argue for "shared research" which calls for an openness to diverse perspectives and the integration of local knowledge and development contexts.

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he book Towards shared research: Participatory and integrative approaches in researching African environments1 (Haller and Zingerli 2020) is inspired by scholars like Fairhead and Leach (1998), who contributed to a paradigmatic and discursive shift in researching African environments by combining sound social anthropological qualitative research with historical archive research, and more quantitative data. Their mixed methods approach challenged previously held views and reveals that these views were based on negative labelling of people in African environments as trapped in a tragedy of environmental degradation. Furthermore, these views were deeply rooted in the colonial discourse regarding the need to protect forests and wildlife from damage caused by the overuse of natural resources by local people (see Brocking-

Neumann 1998).
This integrative turn in social and na

ton et al. 2008, Galvin and Haller 2008,

This integrative turn in social and natural science research created room for the way research was conducted on the ground (see Haller et al. 2016, Faye et al. 2018, Haller and Merten 2018). The explorations in our book *Towards shared research* make use of the empirical description of four distinct research processes. From these we elaborate on a more normative understanding of shared research as something that should be done more often. At the same time, we acknowledge that shared research is a process where we still need to learn more, particularly with respect to adequately (re)presenting the people participating in the research as well as the process of producing research output that bases on various possibilities of interpretation and perspective.

### Research in diverse socio-environmental settings

A few years back, the editors and authors of the named book met at the University of Bern, Switzerland, for a conference Participatory and integrative approaches in researching African environments: Opportunities, challenges, actualities in natural and social sciences, co-organised by the Swiss Society for African Studies and the Swiss Academic Society for Environmental Research and Ecology (saguf). All of them came with a multidisciplinary perspective and portrayed in transparent ways their approaches and

searches for a more inclusive and better understanding of knowledge about African environments.

Four research groups followed our call for a detailed and substantive exploration of their shared research experiences. This resulted in a compilation of four original articles from research carried out in Namibia, Niger, Nigeria and the United Kingdom as well as Burkina Faso. In the introductory and concluding articles we inductively developed a discursive framework to discuss key elements of shared research: 1. learning as multidimensional and multilevel process, 2. dimensions of participatory research, 3. the role of language and translation in interdisciplinary and intercultural research settings, and 4. the meaning of turning points in collaborative research processes.

Before we provide insights into our interpretations and conclusions, we introduce the four original articles:

Prudat et al. contribute a reflection entitled *Soil classifications: Between material facts and socio-ecological narratives.* They set out in 2014 to compare local knowledge on soils with two international soil classification systems. They designed their study from a natural science perspective. The long fieldwork in Namibia enabled them to delve into the complexities of local knowledge about soils and to reflect on what it means to give justice to the diversity of lo-

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cal perspectives and to make use of complementary knowledge of soil and soil management. The article shows what a co-sharing research offers: acknowledging soil as part of a human-made landscape and soil knowledge as part of a socially constructed knowledge. On the other hand, the emic way of understanding soil characteristics has limits that an objectivized soil classification can counterbalance in soil management decision-making. Prudat et al. offer an honest reflection on environmental scientists that enhance their natural sciences' "socialization" through participatory research methods and observation among the Oshikwanyama in north-central Namibia.

Oyama's article entitled Action research and reverse thinking for anti-desertification methods emerges from fieldwork spanning more than 15 years of participatory research in south-west Niger. His contribution evolves in the context of combating desertification, but it draws attention to wicked problems that manifest in local settings, including the pressure for farmland that reduces pastureland, with ever more livestock and lingering social conflicts. His contribution to enhancing soil fertility and land management can be read as a quest to mitigate a situation of environmental and socio-political stress. Oyama creates social relations to experiment with and scientifically measures local techniques for improving soil conditions. What he refers to as "reverse thinking" is to apply and test a locally emerging soil management technique for its potential to create plots for enhanced graded soils. Oyama portrays positive effects on soil fertility and land management between Hausa farmers and Fulbe herders. Local communities have organized themselves for higher productivity. His action research approach is an intriguing contribution to dealing with a wicked problem.

The article **Energy and the environment in** sub-Saharan Africa: Household perceptions of improved cookstoves by Jewitt et al. discusses the development of technical innovations based on a health-environmenttechnology approach. They specifically involve women as the ones using improved cook stoves. The article explores the evolution of improved cook stove initiatives and examines initiatives promoting clean fuels and cook stoves. Its analysis evolves against the background of specifically designed events called bake-offs. The international group of researchers organized cooking events in two different settings in order to collect end-users' views. The first bake-offs took place in England with the participation of immigrants and refugees. Later, the bake-offs were organized and accompanied by fieldwork in Benue state, Nigeria. This participatory approach to experimenting and testing makes contributions beyond the health-environment-technology approach. It shows the potential of endusers' views and cultural considerations in processes aimed at introducing new or alternative technologies. It is helpful in understanding the level of adoption of a technology and the power of co-creation of knowledge.



ect in Burkina Faso. It provides a thick description of shared research activities in the fisheries in Burkina Faso. It also shows that merely trying to be interdisciplinary and transdisciplinary in a European-African research collaboration does not suffice, as hegemonies from male-dominated natural science and hegemonic post-colonial biases tend to prevail. The case shows that such problems can remain unrecognized and that conflicts are perhaps needed to draw attention to these issues. The paper also addresses other views, which appear in the discussion of differences regarding gender, culture and multiple languages involved. The paper concludes that the richest experiences and learnings stem from

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soil fertility and more productive biomass production for livestock herding. What is counter-intuitive from an environmental point of view is the application of solid waste from the city to abandoned and deCo-creation of knowledge is a key focus of Slezak et al.'s contribution, entitled Fishing for food and food for fish: Negotiating long term, sustainable food and water resources in a transdisciplinary research proj-

joint workshops and storytelling approaches, along with long-term interactions in the field. However, these require time and intensive interactions between students and supervisors in mixed inter-cultural teams.

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#### Interpretations and recommendations

From these contributions and our own interpretations, we discuss four key elements:

- Learning as multidimensional and multilevel processes in extended time and scale: We explore here various dimensions of learning, stages of ambiguity and disorientation and experiences of liminality. We conclude that if there is room for critical reflection on research processes and multiple expectations paradigms and epistemological traditions can be shifted.
- Dimensions of participatory research: We explore here what it means to be explicit about the roles of those who move in and out of the local context and those who stay. Extended stays in local contexts and the sharing of daily life experiences help to develop a sense of diverse power relations in research teams as well as in researcher-researched relationships. Participatory research processes require careful planning and an openness towards emerging participation while the research progresses. This also means to accept limitations and to cope with frustration as participatory moments can become overly complex.
- Role of language and translation in interdisciplinary and intercultural research settings: Multidimensional learning and participatory research inevitably touch on different understandings and epistemologies, and their various expressions in language and speech. Thoroughly working through language and translation complexities both represents a sort of liminal experience, as they challenge worldviews and multiply the possibilities of interpretation. On the other hand, the focus on language and translation can also act as a way to manage the states of ambiguity or disorientation in the processes of data collection, analysis and interpretation.
- Turning points in collaborative research processes: We explore here the unplanned and unanticipated chances and challenges that emerge in collaborative and integrative research. Being open to and respectful of the diversity of actors, both researchers and researched, and of their perceptions and contributions, can en-

hance learning and the facilitation of a common understanding of key aspects in researching African environments.

What we conclude for "shared research" from the review and discussion is that it is worth exercising an openness to diverse perspectives and to not shy away from the complications and complexities of local knowledge and development contexts. This leads us to the following requirements to do shared research:

Making room for long-term research engagement with extended fieldwork stays in local and regional contexts. Long-term research engagement enables hearing and understanding local voices. It enables local actors to be in a position to understand the external researchers and experts' views. This happens by sharing everyday activities and living conditions and by applying a participant observation research methodology. Long-term research engagements can create trust, a key element needed to exchange with each other and to know that the respective other tries to understand.

Contextualizing research projects, both referring to diverse scientific contributions as well as the global drivers that shape development and livelihood contexts today. Concise contextualization of legal and powerspecific issues supports collaborative research. Trying to understand the different views on realities is a crucial step in participatory and integrative research. Including local views at the same level as scientific language and knowledge leads to a greater robustness of the research process and a better preparation for outreach and implementation of the research results. Such shared research evolves from a "they do it" to a "we do it". Obviously, there are risks: Such processes are emergent, often unpredictable, and they can suffer from drawbacks such as represented in gendered patterns of knowing or epistemological dominations.

Making research processes and methodological challenges more explicit. "Shared research" is full of turns and twists as well as of conflicts, anticipating power relations

in research contexts. An analysis of the ongoing processes, and discussing where teams with different factions and functions stand, is of central importance in order to find ways for sharing in the research process. Being more explicit about the research process and the methodological challenges of research endeavors is a way to give justice to the multiple learning loops and the emergent character of results in researching wicked problems of today.

All these elements indicate that "shared research" can be a starting point but must also be a self-reflexive process which also should anticipate different interests and power relations by all stakeholders. The challenge is to keep the process running in a participatory way and to mitigate power asymmetries. It enables to make mistakes and to enhance the capacity to learn and be creative.

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