



Exploring inequalities in science through a multi-method study of forest research

Nelius Boshoff (Stellenbosch University, CREST, scb@sun.ac.za)

Susanne Koch (Technical University of Munich, STS Department, susanne.koch@tum.de)

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C. Tetley



O. Strelnyk



S. Koch (PI)



N. Boshoff (PI)



S. Ngwenya



I. Basson



S. Sunagawa

Project: “Science as a field of struggle: a multi-method study on inequality and its epistemic effects in forest research” (In-Forest)



R. Costas



J. Dudek



A.J. Uisso



01.02.2022-31.01.2026



Aim: to examine inequalities and their epistemic effects in forest science through a multi-method study



EFI Video screenshot



Theoretical lens: Bourdieu's sociology of science (field – capital – habitus)

Bibliometric analyses of global forest science to explore how inequalities manifest in publications at different levels (WP1)

Ethnographic analyses to explore how inequalities are (re-) produced by scientific practice, with a focus on collaboration (WP2)

Comparative analyses of 'international'/'local' forest science output to explore to explore how author positions and content relate (WP3)

Cross-cutting: triangulation and theorization of findings (WP4)

Bibliometric analyses of global forest science

Forms of capital	Bibliometric indicators	Regions/ countries
Scientific capital (products of knowledge)	<i>Publication contribution</i> : World share of forest publications	R&C
	<i>Research disparity</i> : Disparity ratio between world share of forest publications and world share of forests	R&C
Scientific capital (acts of recognition)	<i>Citation contribution</i> : World share of total citations of forest publications	R&C
	<i>Mean citation count</i> : Average number of citations per forest publication	R
	<i>Publication visibility</i> : Share of forest publications among top 10% most cited	R
Collaboration capital	<i>Cross-regional collaboration</i> : Share of forest publications co-authored with other regions	R
	<i>National collaboration</i> : World share of all forest publications with national co-authorship only	C
	<i>International collaboration</i> : World share of all internationally co-authored forest publications	C
Funding capital	<i>Internal funding</i> : Share of forest publications mentioning funding from own region / country	R&C
	<i>External funding</i> : Share of forest publications mentioning funding from other regions / countries	R&C

Regional profile of global shares of forestry publications and forest areas

Regions	World share of forestry publications		World share of forest area		Disparity ratio (A/B)	
	Percentage (A)	World ratio	Percentage (B)	World ratio		
Central and Southern Asia	5%	0.3	3%	0.2	1.7	≤0.5: below world average
Eastern and South-Eastern Asia	24%	1.6	12%	1.0	2.0	
Europe	40%	2.6	25%	2.0	1.6	
Latin America and the Caribbean	14%	0.9	23%	1.8	0.6	0.6-1.4: about world average
Northern Africa and Western Asia	2%	0.1	1%	0.1	2.0	
Northern America	27%	1.8	16%	1.3	1.7	≥ 1.5: above world average
Oceania	6%	0.4	5%	0.4	1.2	
Sub-Saharan Africa	4%	0.3	15%	1.2	0.3	
<i>Average for eight regions</i>	15%		13%			

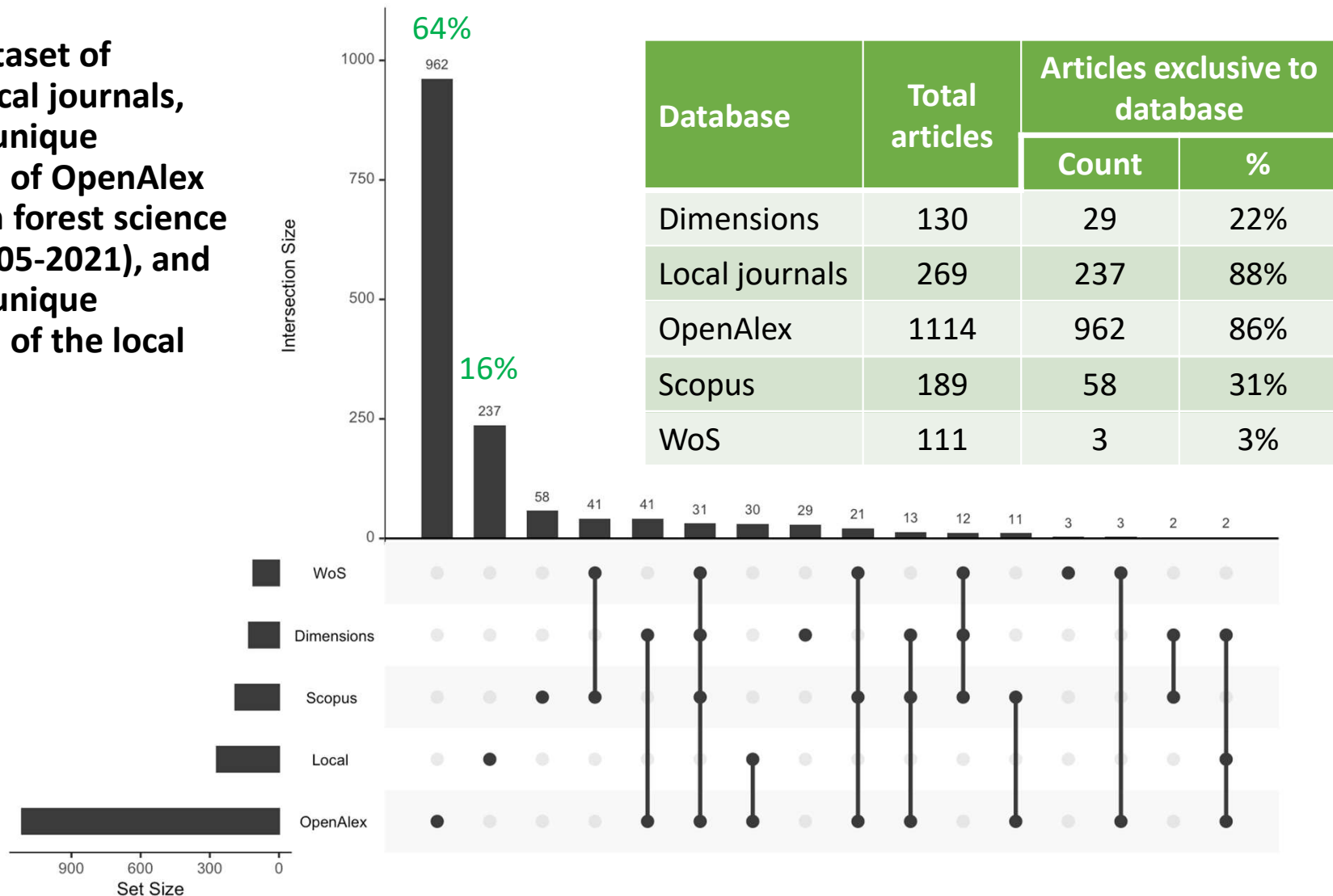
Bibliometric analyses of local forest science

- How is Tanzanian forest science represented in different bibliographic databases?

Sub-questions	Databases
1.1 Using the DOI as the common factor, what is the degree of overlap among the four databases?	<ul style="list-style-type: none">• Dimension, Scopus and WoS as three mainstream databases, and OpenAlex as a 'big' and open alternative to the mainstream databases• Period: 2005-2021
1.2 Based on a title check, what is the degree of overlap among the four databases?	
1.3 How similar is the representation of Tanzanian forest science in OpenAlex to that of the other three databases?	
1.4 What is the unique contribution of OpenAlex to Tanzanian forest science when adding a dataset of articles from local journals, and what is the unique contribution of the local dataset?	<ul style="list-style-type: none">• Same four databases as above plus a dataset of articles in local journals from AJOL

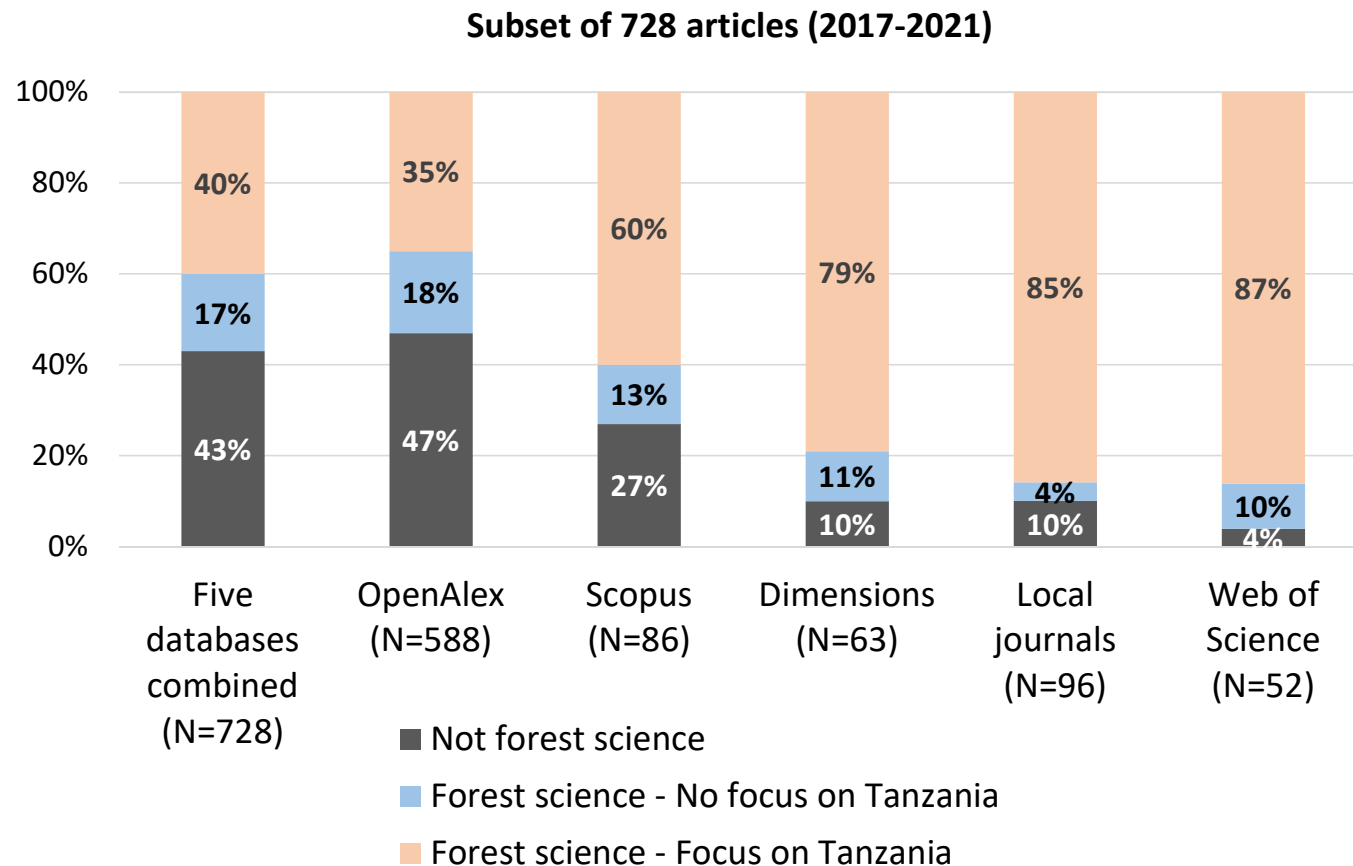
Bibliometric analyses of local forest science

- Adding a dataset of articles in local journals, what is the unique contribution of OpenAlex to Tanzanian forest science (N=1496, 2005-2021), and what is the unique contribution of the local dataset?



Bibliometric analyses of local forest science

- If a database classifies a Tanzanian article as forest science, does that mean it is focused on forest science in Tanzania?



Decision rules to determine forest science

(1) Obvious to first coder

- “Does Village Chicken-Keeping Contribute to Young Children’s Diets and Growth? A Longitudinal Observational Study in Rural Tanzania”
- “Status quo of chemical weed control in rice in sub-Saharan Africa”

(2) 326 of 728 = not forest science

(3) 326 given to second coder to cross-check

(4) 96% agreement (not forest science)

Bibliometric analyses of local forest science supplemented with content analysis

- To what extent is Tanzanian forest research aligned with national realities, and is this alignment different for different databases?

Sub-questions	Categories
3.1 To what extent is Tanzanian forest research aligned with the national research programme , and does this alignment vary by database? (“WHAT”/TOPIC of Tanzanian forest science)	Five databases: <ul style="list-style-type: none">• Dimensions• Scopus• WoS• Local journals• OpenAlex
3.2 To what extent does Tanzanian forest research reflect the national forest tenure system , and does this reflection vary by database? (“WHERE”/LOCATION of Tanzanian forest science)	
3.3 To what extent does Tanzanian forest research reflect the national forest types , and does this reflection vary by database? (“WHAT”/TOPIC of Tanzanian forest science)	
3.4 To what extent does Tanzanian forest research reflect the national geographic forest regions , and does this reflection vary by database? (“WHERE”/LOCATION of Tanzanian forest science)	

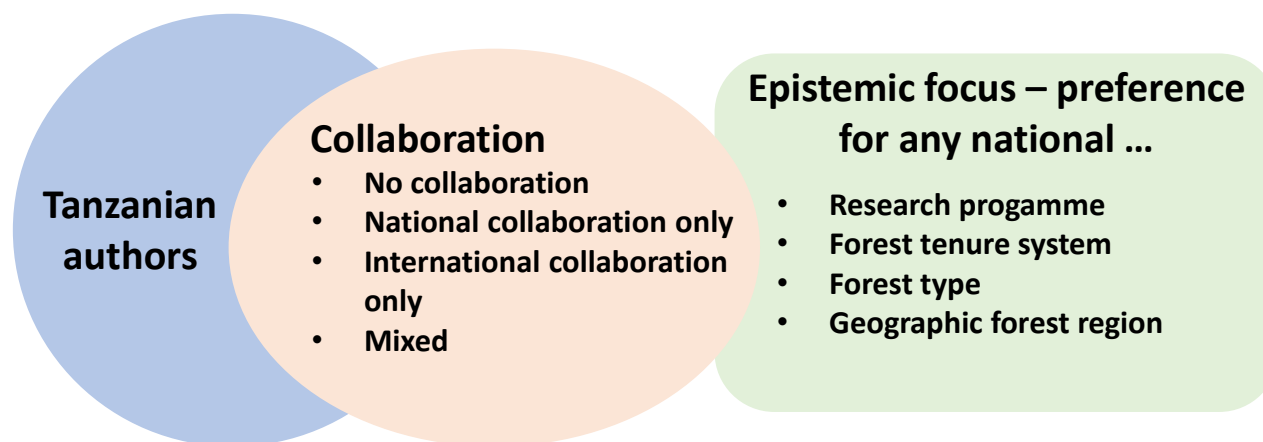
Bibliometric analyses of local forest science supplemented with content analysis

- To what extent is Tanzanian forest research aligned with the national research programme, and does this alignment vary by database? (“WHAT of Tanzanian forest science)?

National research programmes	% of national budget allocation	% of research (N=293)	Databases				
			Dimens. (N=50)	Local journals (N=82)	OpenAlex (N=207)	Scopus (N=52)	WoS (N=45)
Socioeconomics, policy and extension	28%	29%	32%	21%	30%	44%	40%
Sustainable harvesting and utilisation of forest resources	21%	9%	4%	16%	6%	2%	0%
Management of natural forests and biodiversity conservation	18%	54%	52%	49%	57%	37%	42%
Forest resources assessment	12%	31%	40%	34%	33%	33%	27%
Urban and farm forestry	11%	10%	4%	5%	12%	10%	11%
Forest plantations and tree improvements	11%	6%	6%	12%	3%	6%	9%

Bibliometric analyses of local forest science supplemented with content analysis

- Follow up research:
 - Do Tanzanian authors with different collaboration capital make different epistemic choices in terms of the focus of their research?
 - Authors and not articles the unit of analysis



	Central and Southern Asia	Eastern and South-Eastern Asia	Europe (EUR)	Latin America and the Caribbean	Northern America	Northern Africa and Western Asia	Oceania	Sub-Saharan Africa (SSA)	Any of the seven regions
% of EUR publications co-authored with ...	2%	7%	--	6%	11%	1%	3%	4%	28%
% of SSA publications co-authored with ...	3%	9%	41%	9%	15%	1%	6%	--	59%

Ethnographic analyses to explore how inequalities are (re-) produced by scientific practice, with a focus on collaboration (WP2)

→ Why do North-South inequalities in international research collaborations persist, despite 'guidelines' in place to realize equitable research partnerships?

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EDITORIAL | 20 December 2023

End the glaring inequity in international science collaborations

The world's natural-science research ecosystem remains focused on the priorities of high-income countries. Funders, publishers and scholarly databases can do more to help to rebalance that.



International collaboration practice: reproducing or counteracting inequalities?

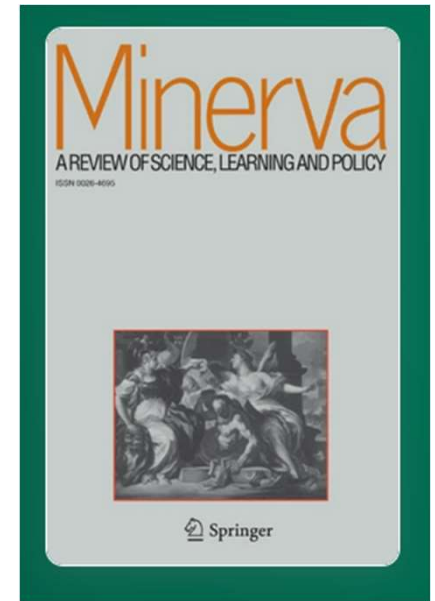
- **Praxeological approach:** study of six African-European collaborative research projects
 - Participant observation conducted in twelve collaborative meetings
 - 32 Interviews conducted with scholars involved in the collaborations
- **Methodological presumptions:**
 - Research collaborations as ‘micro-spaces’ of scientific fields
 - Meetings as spaces where relations “are generated, deployed, resisted, and transformed” (Kendall and Silver 2017: 41) through discursive interaction; speech = action/practice
- **Common features:** Focus on forest governance, funding from Europe
- **Differential features:**
 - Funder type: regional funder, national ministries, foundation, development agencies
 - ‘Designed collaboration orders’ (drawing on Molinengo 2022): formal roles/actor relations

International collaboration practice: reproducing or counteracting inequalities?

Reproducing Inequality: Collaboration Habitus and its Epistemic Implications in African–European Research Projects on Forests

[Open access](#) | Published: 06 March 2025

(2025) [Cite this article](#)

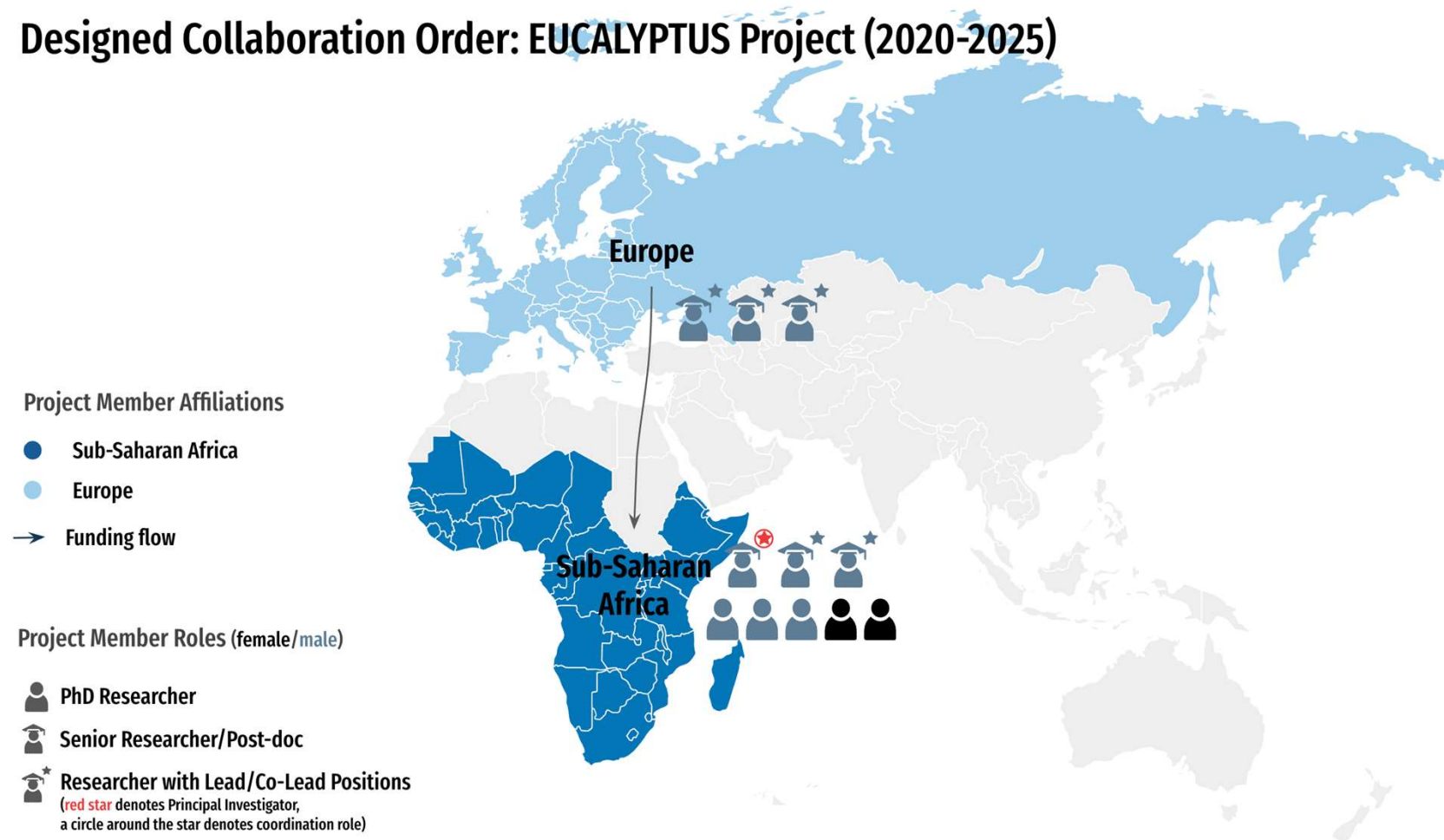


Key findings (Koch et al. 2025):

- Unequal roles and scientific authority in emerging collaboration orders
- Habitus as concept explaining the persistence of unequal roles and scientific authority in collaborative practice

International collaboration practice: reproducing or counteracting inequalities?

Designed Collaboration Order: EUCALYPTUS Project (2020-2025)



International collaboration practice: reproducing or counteracting inequalities?

COLLABORATION IN THE EUCALYPTUS PROJECT: TRENT AND ADIS

- Emerging collaboration order: Trent performs a 'lead-lead' role in scientific discussions

Trent asks: "How much data do we have in terms of quantification? How much money are we talking about?" Elsa says that they have had a very hard time getting this data. Adis responds: "We will get it, we will find a way." Trent continues: "There should be official district level accounts, we need this because - who are we to apply pressure but nevertheless - we cannot just take someone's oral statement."

Parit reads out about the data: income streams of the groups they are studying. **Trent** puts the data into perspective, encouraging them to compare with other data: "this data doesn't mean anything if we can't compare it with other sources of income."

Trent's closing statement, before we move to lunch, is "you guys are getting great data, let's get it on paper and make it something scientific." (Eucalyptus_V1)

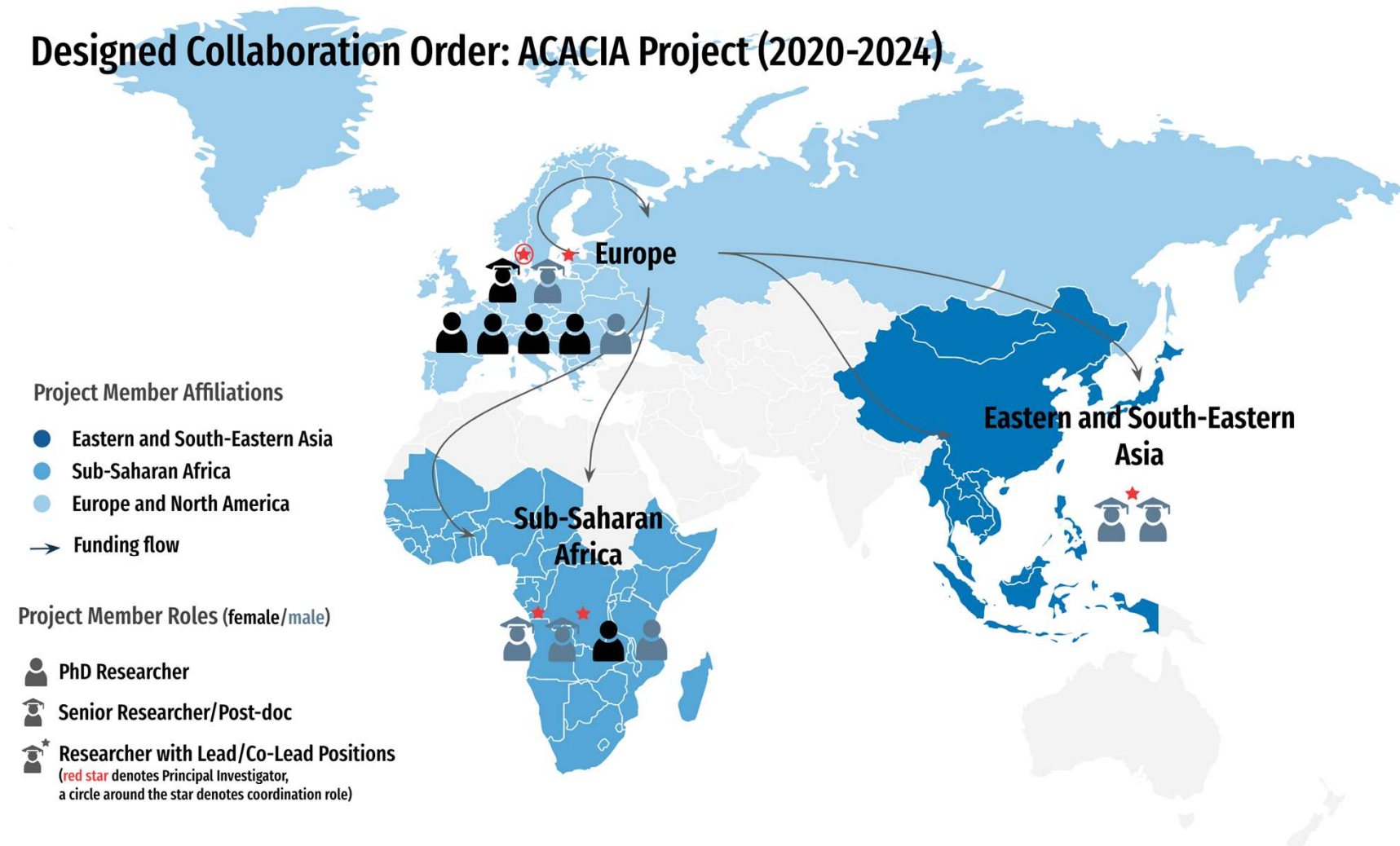
International collaboration practice: reproducing or counteracting inequalities?

COLLABORATION IN THE EUCALYPTUS PROJECT: TRENT AND ADIS

- Adis (PI and coordinator): positioning as leader who makes decisions 'on the ground', but:
"BUT we work together. (...) I cannot make any decision alone. I have to ask Trent, yeah, and say: (...) 'I want to do this. Is this okay?' – 'Yeah, yeah. This is okay.' Or: 'No, don't do this, do this'."
(Eucalyptus_Adis)
- Relation of Adis and Trent shaped by the positions from which they entered collaboration
→ emerging collaboration order ≠ designed collaboration order

International collaboration practice: reproducing or counteracting inequalities?

Designed Collaboration Order: ACACIA Project (2020-2024)



International collaboration practice: reproducing or counteracting inequalities?

COLLABORATION IN THE ACACIA PROJECT: MARTHA AND BENJAMIN

- Emerging collaboration order: Martha performs a 'lead-lead' role, taking over moderations, coordination, giving directions, making assessments and final decisions

Martha gives last comments, and asks that the group have more focus on quantitative methods:

"Please do first the network questions in your questionnaire because that is the quantitative data."

Martha positions herself as scholar having the authority to assess project progress/pace and explicate expectations: "We expect method details and results from you soon please" - "It feels like the project is moving very slowly, and in my opinion it IS moving very slowly. I do expect results and output from you all soon, please." (Acacia_V2)

International collaboration practice: reproducing or counteracting inequalities?

COLLABORATION IN THE ACACIA PROJECT: MARTHA AND BENJAMIN

- Benjamin, Associate Professor at African University and one of the five project PIs
- Invited to the consortium due to his location – “they needed someone from [COUNTRY]”
- Asked what motivated him to get involved:

“Because of many things. Because of the great opportunity” (Acacia_Benjamin);

- Opportunity to do research on forests in his own country (epistemic interest)
- Funding and prestige coming with the project – a ‘first of its kind’ at his faculty (economic and social capital)
- Chance to collaborate with “people like Martha” who have “great experience” (social and scientific capital)

International collaboration practice: reproducing or counteracting inequalities?

COLLABORATION IN THE ACACIA PROJECT: MARTHA AND BENJAMIN

- Benjamin, Associate Professor at African University and one of the five project PIs
- Asked how the project proposal was developed:

“Of course the proposal, Martha was LEADing the writing of the proposal but she wanted us to give that feedback, participate in how to formulate for example, research question (...), asking information if they are missing, if it’s correct. So, we did some kind of workshop, but of course Martha was the one who wrote all the proposal, and this was also a pleasure to see Martha, because you know Martha? When I was doing my PhD, Martha IS one of the authors that I cite a lot in my thesis.”

“It was really an emotion – yeah. There was a lot of emotion. I told her, Martha, I know you. I’m your kind of your fan.” (Acacia_Benjamin)

International collaboration practice: reproducing or counteracting inequalities?

COLLABORATION IN THE ACACIA PROJECT: MARTHA AND BENJAMIN

- Asked for his publishing practices and choices, he comes to speak about the project:

“You do research, you take that from those people. And then, they are not able to – to read it. So that’s the problem. (...) I know in the project, we should work in English. But the country concerned by the project, people are generally French speakers . (...)

From now I didn’t bring this question to the table with Martha, but it's something, it's always in my mind.” (Acacia_Benjamin)

- Habitus as concept explaining the persistence of unequal roles and scientific authority in collaborative practice without anyone’s intention

In-Forest Research Project

<https://in-forest.research.st/>

Bibliometric analyses

Geographical inequalities in global forest science: A bibliometric perspective

Comparative content analyses

A Mixed-Methods Approach to Epistemic Choices and Struggles in Scientific Publishing
Examining the Case of African Forest Governance Scholars



Different representations of forest science in bibliographic databases and the (in-)visibility of Tanzanian research: applying an epistemic (in-)justice lens

Special issue

Science as a site of inequality: insights from environmental research fields and implications for sustainability transformations

FEATURE ARTICLE

Gendered struggles in forest governance research

The experiences of African women scholars

Ethnographic analyses

Reproducing Inequality: Collaboration Habitus and its Epistemic Implications in African-European Research Projects on Forests



Science as a field of struggle: Gendered experiences of African scholars doing forest governance research



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Narratives of research collaboration for sustainability at the global science-policy interface: A vehicle for inequality or transformation?