



TRANS-DISCIPLINARITY

Assessment of Methods & Capabilities of GIRT Project Team Members In Four Higher Education Institutions

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Outline

1. Background

2. Objective

3. Methodology

4. Findings

- General characteristics
- MT, IT, TD
- Conceptual understanding about TD
- Successful integration cases
- Experience in drawing research methods
- Barriers and success factors
- Capabilities for TD (individual, collective and cognitive)
- Status of TD methods

5. Conclusion

6. Q& A

1. Background

- In recent times, there has been an **increasing recognition of the need for transdisciplinary research in higher education** institutions in Africa.
- Transdisciplinary research refers to
 - an approach that involves collaboration between different academic disciplines and non-academic stakeholders to address complex real-world problems.
- It recognizes that many of the challenges facing society today require a **holistic understanding** that goes beyond the boundaries of individual disciplines.
- This necessitates a reorientation of the traditional siloed approach to research in higher education institutions, which have been mostly discipline-focused.
- Assessing the needs for transdisciplinary research is paramount to facilitate the development of innovative solutions to complex problems that address the socio-economic and environmental issues facing countries.
- This paper explores the importance of assessing the needs for transdisciplinary research in higher education institutions

1. Background

Key characteristics of transdisciplinarity included in a wide range of definitions proposed by various researchers

- 1.a focus on **theoretical unity of knowledge**, in an effort to transcend disciplinary boundaries;
- 2) the **inclusion of multidisciplinary and interdisciplinary academic research**;
- 3) the **involvement of (non-academic) societal actors** as process participants;
- 4) a focus on **specific, complex, societally relevant, real-world situations or problems**;
- 5) working in a **transformative manner**, i.e., going beyond the focus on real-world problems to proactively **support action or intervention**;
- 6) **an orientation toward the common good** (including the betterment of society and a humanistic reverence for life and human dignity);
- 7) **reflexivity**, i.e., consciously contemplating the broader context and ensuring the compatibility of the project's components and tasks throughout the course of the project.

Comparison of current research approaches in participatory real-world interaction according to selected criteria

	2. Participatory Action Research (Cornwall & Jewkins, 1995; Kemmis & McTaggart, 2000; Ozanne & Saatcioglu, 2008)	Transdisciplinary Processes (Scholz, 2011; Scholz, Lang, Wiek, Walter, & Stauffacher, 2006; Scholz & Tietje, 2002)	Conceptual Model of Transdisciplinary (Jahn et al., 2012; Lang et al., 2012)	Urban Transition Labs (UTL) & Transition Magnagement (Nevens et al., 2013; Nevens & Roorda, 2014; Voß, Bauknecht, & Kemp, 2006)
Theoretical foundation	Psychology, qualitative social research, group dynamics, organizational development	Human–envir. system (HES), based on biology, psychology, industrial ecology, economics and sociology	Post-normal science and Mode 2-science; TD is a research approach, not a theory, methodology or institution	Multi-level perspective (MLP) within the framework of transition management (governance approach)
Key terms/concepts	Participation; Power relations; Empowerment; Capacity Building	Case Study; Knowledge Integration; Joint Problem Definition; Mutual Learning	Prob. Transformation; Td Integration (epistemic, soc.organisation and communication);	Niche; Regime; Landscape; Experimenting; Envisioning
Rationale for the specific (transdisciplinary) approach	Social reality as historically constructed & therefore intertwined with power relations. Goal is helping marginalized Groups	Transdisciplinary for coping with complex, socially relevant problems and uncertainty	Focus on “wicked problems“, TD is required, if system, transformation and orientation knowledge are lacking	UTL as a new governance structure for sust. cities
Aim of the process	Production of new theories, social innovations, initiation of social movement, empowerment and capacity building	Production of relevant, socially robust knowledge that also feeds back to scientific knowledge generation and theory building	TD processes have to produce new knowledge and facilitate mutual learning between scientists and practitioners	UTL “provides space and time for learning, reflection and development of alternative solutions that are not selfevident”
Typical process and duration	No standardized process but similar steps 1. Identification of problems 2. Research design, data collection and analysis 3. Take action, implementation 4. Evaluation Duration: some mos to a few yrs	1. Joint probl. definition 2. Joint probl. representation 3. Jointly initiating a process of problem-solving Achieved by a set of methods Duration: normally 1-2 yrs	1. Common research object (problem transformation) 2. Production of new knowledge (interdisciplinary integration) 3. Transdisciplinary integration (evaluation of new knowledge) Duration: a few yrs	1. Analyzing the system 2. Envisioning 3. Exploring pathways 4. Experimenting 5. Assessing 6. Translating Duration: a few yrs
Roles of scientists And practitioners, Leadership	Sci: Data collection, interpretation and presentation; facilitation of practitioner’s deliberation Prac: provide problems; (instructed) self-reflection and decision-making	Sci: Participating in the social context of the problem; data Collection Prac: Involved throughout the whole research process as equal collaborators, become empowered	Sci: Production and evaluation of new knowledge; science facilitates the process, is critical and self-reflexive Prac: provides specific Knowledge Ideal: collaborative (research) team	Sci: coordination, pooling and influencing actors and their activities Prac: innovative ‘regime’ actors and frontrunners from ‘niche’ contexts Ideal: strong mutual trust
Generalization of results	Theories of social practice for use beyond the immediate research context	Focus on knowledge integration for the specific case	Differentiation between useful results for scientific and societal practice; critical about transferability of case study results	The UTL aim is a new governance for sustainable cities; no production of general knowledge; “translation” of knowledge to other fields

THEORY OF CHANGE FOR GIRT

Responsive higher education and research institutions that has impact on the academic and policy arena

Evidence based solutions for scalability and

Policy recommendations

Selection and testing of Methodologies for TD research & training

- Need assessment for TD
- **Develop & test trans disciplinary methodologies for conducting research and implementation of research findings**
- **Contextualize and operationalize TD**

Capacity building based on need assessment

- Multidimensional short-term training packages
 - Sectoral Experts
 - Staff
 - PhD/MA students
- Manual development
- TD skill development

Coproduction of knowledge for urban transformation

- SH mapping
- Conduct Qualitative research
- Undertaking Joint research activities TD (academic and non-academic actors)
- Knowledge/actors integration
- Understanding of wicked problems(multisectoral/ multiscale)

Mainstreaming collective learning methodologies for sustaining Td academic partnerships & community impact

Learning and innovative solutions
Collective action for interventions
Policy recommendations

Addressing informality and livelihoods of women in informal settlements and trigger urban transformation/transition with TD research approach

Previous partnership and basis for GIRT

Social Inclusion and
Energy Management for Informal Urban
Settlements

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What is SES?

Partners

SES helps Ethiopian cities to solve problems related to housing evictions from their informal settlements.

The project introduces a holistic approach in Ethiopian HEIs and educates responsible personnel at local authorities on good practices, the SES project aims at fostering the collaboration.

Coordinated by Danube University Krems (DUK) the project

- Increase the relevance of architecture and planning studies on housing, participatory mapping and environmental risk assessment.
- Strengthen the relations between HEIs in Ethiopia and their counterparts in Europe and feedback mechanisms with different social actors in the 3 cities, by organizing [local dissemination workshop](#) and providing complementary materials via a website.
- These results will sharpen the profile of HEIs and their role in the networking between local stakeholders and intensify contacts between Ethiopia and Europe.

Ethiopian partners



Ethiopian Institute for Architecture, Building Construction and City Development (EiABC), Addis Ababa, Ethiopia



University of Gondar, Gondar, Ethiopia



University of Mekelle, Mekelle, Ethiopia

European Partners



DUK (Danube University Krems), coordinator



Universität Kassel



TWENTE (University of Twente)












[European Union](#)

Hosted by

What was SES about?

Workplan

The [Workplan](#) provides an overview on the project, comprising all activities, events and deliverables.

-  [Survey of Architectural Curricula in Ethiopia](#)
-  [Regional Profiles](#)
-  [Selected Site Visits](#)
-  [Thematic Workshops](#)
-  [Case Studies](#)
-  [Course Development](#)
-  [Course Implementation](#)
-  [External Trainings](#)
-  [Local Dissemination Workshops](#)
-  [National Consultation Meetings](#)
-  [Detailed Course Description in OpenCourseWare \(OCW\)](#)

Project publications

-  [City resumés](#)
-  [Case Studies](#)
-  [SES Newsletter](#)
-  [Detailed Course Descriptions in OpenCourseWare \(OCW\)](#)
 -  [Covid 19 and its impacts on informal settlements](#)
 -  [Spatial Analysis for Sustainable Urban Planning and Management](#)
 -  [Informality in urban Ethiopia: Quality of life](#)
 -  [Social Policy Analysis in the context of informal housing](#)
 -  [Seminar on urban and regional issues in Ethiopia](#)
 -  [Informal Settlement as Social Policy Issue](#)
 -  [Seminar on Contemporary Population Issues](#)
 -  [Regional Planning and Metropolitan Growth Management](#)
 -  [Sustainable Design](#)
 -  [Urban Housing](#)
 -  [Integrated design Studio III- Architecture/ Urban Design / Urban Planning/ Socio-Economic studies](#)
 -  [Conservation of Energy- Household Energy Management](#)
 -  [Urban Upgrading in Peri-urban Informal Settlements](#)

9.2.1 The project - TRANSACT

<https://doi.org/10.7767/9783205201731-063>

PDF/EPUB

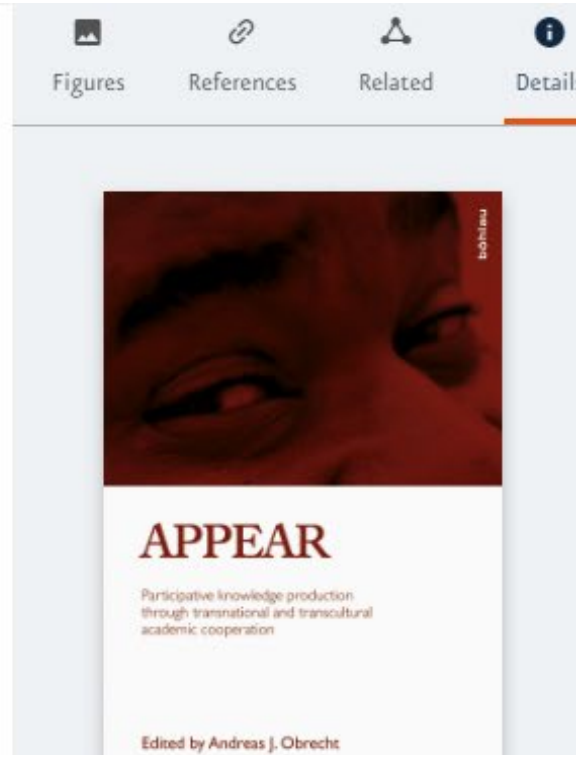
TOOLS

SHARE

250 9 The Ethiopian Context

9.2 Strengthening Rural Transformation Competences of Higher Education and Research Institutions in the Amhara Region, Ethiopia

Project Coordinator: Michael Hauser
 Coordinating Institution: University of Natural Resources and Life Sciences, Vienna (BOKU), Centre for Development Research (CDR)
 Partner Institutions: Bahir Dar University, University of Gondar, Amhara Region Agricultural Research Institute
 Associate Partner: Sustainable Natural Resource Development Programme in North Gondar
 Partner Country: Ethiopia
 Project Duration: 1 February 2011 - 31 January 2014



9.2.1 The project - TRANSACT

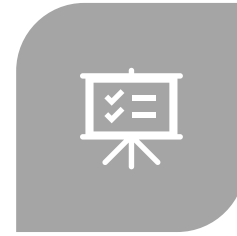
The TRANSACT project is a joint initiative of two Ethiopian universities, one agricultural research organization, one Austrian-funded rural development program and one Austrian university. The main objective of the project was to strengthen the transformation competences of the Ethiopian consortium partners in research and training. Such transformation competences demand institutional capacities that translate into new partnerships and learning alliances, allowing higher education and research to become more effective development partner and community service providers in North Gondar.

This is important, because in North Gondar there is an untapped potential for social, economic and technical transformation that would gradually improve the lives and livelihoods of farmers. Potential changes include technical improvements in agricultural and natural resource management and the realisation of new income opportunities, which could lead to a transformation from socially unjust rural worlds where farmers live in poverty to a rural society of equality and prosperity. The realisation of this potential requires public and private actors to join forces with rural communities

Background



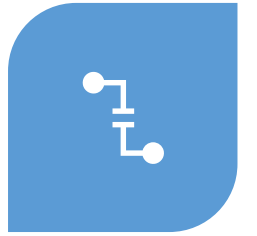
WHY ASSESSING CAPACITY
AND UNDERLYING
CAPABILITIES IS
IMPORTANT ?



B/C THEY BOTH
CONTRIBUTE TO A BROADER
EVALUATION OF THE
COMPLEX AND OFTEN NON-
QUANTIFIABLE CRITERIA OF
INTERACTIONS BETWEEN
SCIENCE AND SOCIETY IN
TRANSDISCIPLINARY
RESEARCH.



TO FACILITATE THE
TRANSDISCIPLINARY (TD)



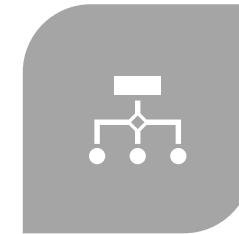
SUCH INTERACTIONS
INCLUDE BUT ARE NOT
LIMITED TO,



COLLABORATION,



INTEGRATION OF
KNOWLEDGE,



LEARNING PROCESSES, AND



THE PERFORMANCE OF
COGNITIVE AND SOCIAL
FUNCTIONS.

Objective of the study

- to assess the status of know-how about concepts, methods, and capabilities of transdisciplinary research of project team members in the four partner institutions



2. METHODOLOGY

- **Research approach:**
- Quantitative approach
- **Methods of data collection:** survey through semi-structured questionnaire
- 29 team members participated
- Google form was used as online platform
- **Methods of data analysis :** validity and reliability test
- **Descriptive analysis:** using percentage and frequency and presented in table and chart formats



3 . FINDINGS

Respondents by institution

Team members by their academic Institution	Frequency	Percent
Addis Ababa University	6	20.7
Danube University	1	3.4
Bahirdar University	6	20.7
Lurio University.	6	20.7
Mekelle University	10	34.5
Total	29	100.0

Academic qualification

		Highest academic level?			Total
		PHD	MA/MSC	BA/BSC	
Name of the Institution *	AAU	6	0	0	6
	DUK	1	0	0	1
	BD	3	2	1	6
	LU	0	5	1	6
	MU	0	5	5	10
Total		10	12	7	29

Discipline
composition
by institution

**Name of the
Institution**

Specialization

BD

Environmentalist

BD

Geography and Environmental studies

BD

International Relations

BD

Population Studies/Demography

BD

Socioeconomic geography

BD

Development Studies

Discipline
composition
by institution

Name of the
Institution

Specialization

LU

Urban Development and management

LU

Planning and management of Informal
Settlements(2)

LU

Sociologist - Major in Health and
Development

LU

Nutritionist-master's in public health

LU

Land development and urban management

Discipline composition by institution



Name of the Institution	Specialization
MU	Civil Engineering
MU	Architecture (4)
MU	Building Materials
MU	Housing and sustainable development
MU	Architect and Spatial Development Planner
MU	Urban and Regional Planning

**Discipline
composition
by institution**

**NAME OF THE
INSTITUTION**

SPECIALIZATION

AAU

Food security and environment

AAU

Economics

AAU

Public and Development
management

AAU

Urban and Regional Planning

AAU

Political economy of development
and governance

AAU

Development Studies (Gender,
Governance)

AAU

Development Studies

Discipline composition for GIRT

Architect and Spatial Development Planner
Architecture
Architecture
Architecture
Architecture
Building Materials
Civil Engineering
Development Studies
Development Studies
Development Studies (Gender, Governance)
Economics
Environmentalist
Food security and environment
Geography and Environmental studies
Housing and sustainable development
International Relations
Land development and urban management
Nutritionist-Master in Public Health
Planning and management of Informal Settlements
Planning and management of Informal settlements
Political economy of development and governance
Population Studies/Demography
Public and Development management
Social and Cultural Anthropology, Sociology
Socioeconomic geography
Sociologist - Major in Health and Development
Urban and Regional Planning
Urban and Regional Planning
Urban Development and management

MT, IT and TD research experience

	MD	ID	TD	All
AAU	6	4	2	2
DUK		1		
BD	4	6	2	2
LU	5	2	0	0
MU	5	9	1	1
Total	20	22	5	5

Conceptual understandings about current research

ITEMS TO ASSESS CONCEPTUAL UNDERSTANDING ABOUT TD		RESPONSE	%
Opinion on the capacity of research to support urban transformation in Africa	Yes	29	100
Opinion on production of knowledge by researchers and nonacademic actors together	Yes	29	100
Opinion on existence of solutions-oriented science practice interactions in the research done in your institution	Yes	22	75.9
	No	7	24.1
	Total	29	100.0
Opinion on the current interventions in informal settlements integrate different bodies and types of knowledge including scientific and practical insights	Yes	13	44.8
	No	16	55.2
	Total	29	100.0

Conceptual understandings about current research

Items to assess Conceptual Understanding About TD	Response		%
Opinion on engagement of actors to produce practically relevant and action-oriented solutions	Yes	12	41.4
	No	17	58.6
Opinion on local knowledge and scientific facts are brought together for decision-making	Yes	14	48.3
	No	15	51.7
Involvement of societal stakeholders from outside academia in the co-construction of research agendas and knowledge outcomes	Yes	16	55.2
	No	13	44.8
Experience in integrating different knowledge inputs to reach new understandings that transcend the boundaries between disciplines and knowledge forms?	Yes	23	79.3
	No	6	20.7

Background Knowledge
About Stat And Art Of
Informal Settlements
And Urban
Transformation As An
Expert/Researcher

How do you rate the background knowledge about stat and art of informal settlements and urban transformation as an expert/researcher/?		Frequency	Percent
	Poor	3	10.3
	Fair	6	20.7
	Good	13	44.8
	Very good	6	20.7
	Excellent	1	3.4
	Total	29	100.0

Problem Specific
Background
Knowledge About
Informal
Settlements And
Challenges Of
Urban
Transformation As
An
Expert/Researcher

How do you rate the problem specific background knowledge about informal settlements and challenges of urban transformation as an expert/researcher/?

Frequency

Percent

Poor	5	17.2
Fair	4	13.8
Good	9	31.0
Very good	11	37.9
Total	29	100.0

The Knowledge
About
Components And
Processes Between
Urban Systems As
An
Expert/Researcher

How do you rate the knowledge about components and processes between urban systems as an expert/researcher/?		Frequency	Percent
Poor		3	10.3
Fair		6	20.7
Good		12	41.4
Very good		8	27.6
Total		29	100.0

*...I don't think that all stakeholders are engaged in an integrated way. The **stakeholders are not even known**, and they do not know with whom they should communicate. Many informal settlers have access to electricity and water, but the regional municipality is **unaware of their presence**. This is an indication that those stakeholder groups do not know each other. The other important thing is that informal settlement has **different dimensions: economic, social, political, environmental**, etc. Those informal settlers are displaced without considering their social interactions or economic well-being*



*the intervention is more focused on **practical** insight which focuses on solving only one **immediate** challenge, because many times interventions in informal settlements have **political interests**, and it many times ends up going in a way that benefits the political first and not the informal settlements, It is the **government and its security apparatus** who are engaged in the intervention, lack of a bigger effort, continuous adjustment and compromise is required for appropriate intervention, interventions made without considering knowledge integration or insights from different bodies, interventions are mostly focused on sectoral approaches or infrastructural issues which end up having small to no impact on the issue and most of the interventions are solution driven.*



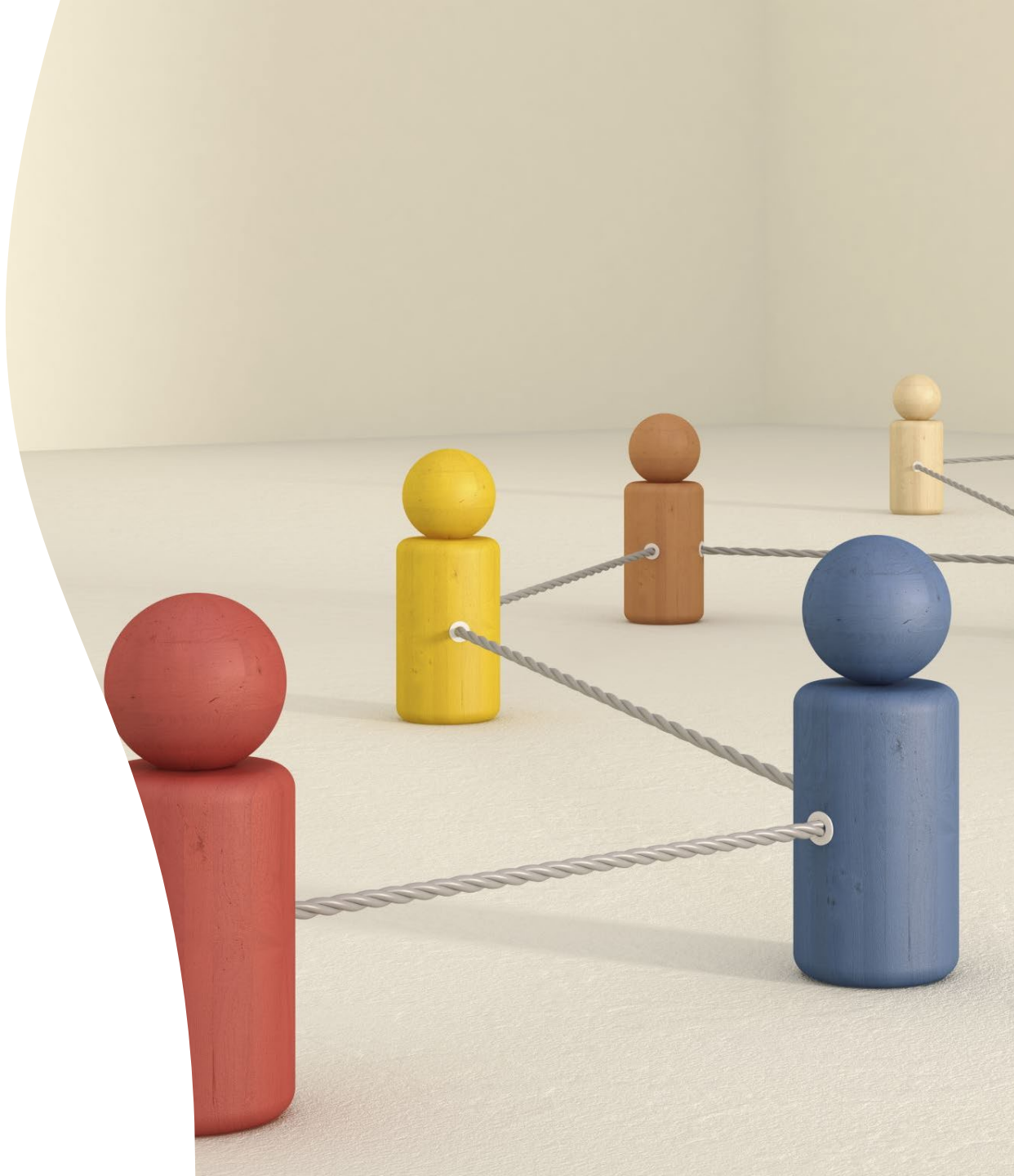
*In the global context, current interventions **already apply an integrated approach** to different types of knowledge, both scientific and practical. It should be noted that in Mozambique the integrated approaches to interventions are felt more on the theoretical, scientific, and not practical side (although some improvement is beginning to be felt on this practical side).*





The University of Addis Ababa, per the revised Higher Educational Proclamation, has the mandate to link (integrate) research, community services, and training (capacity building). In this respect, the Center for Regional and local development has established relations with urban (federal, regional, local) governments and alumni at one hand, and there is a possibility to collaborate and partner with more institutions working in the area of human rights (in informal settlements, slums, etc.), housing, land planning, infrastructure, etc.

- *In informal settlement, there are many stakeholders with **diverse power and interest** and hence the intervention demands integration of the different types of knowledge from these varied stakeholders.*



- The knowledge bases of the various disciplines need to be carefully and systematically integrated if they are to build upon each other – like the blocks in this construction.

General Recommendations for Supporting Researchers in Transdisciplinary Research

Providing knowledge about transdisciplinary methods in a way that is easily accessible for researchers having different disciplinary backgrounds.

Teaching soft skills (moderation, science communication, etc.).

Enabling learning from best-practice cases.

Bringing together researchers in order to enable mutual learning from personal experiences.

Finding mentors with experience in transdisciplinarity.



Successful knowledge integration effort or case

Impact of the land expropriation program on farmers' livelihood in urban fringes of Bahir Dar, Ethiopia,

TRANSACT project: that employed scenario planning as a method to integrate knowledge from academic and non-academic actors.

The case of Yacouba Sawadogo, a farmer in Burkina Faso who has revived traditional agricultural methods and has inspired many scientists in the past decades.

Requalification of the Chamanculo neighborhood in Mozambique.

The Master plan design of the Tigray Martyrs Project was cited by two team members.

• In the field of medicine, traditional medicines in Ethiopia were reported as a case.

Capacity-building cooperation between CLDS and the Ministry of Works and Urban Development. With a customized and tailored curriculum, an "Urban Land Management and Administration" program is under implementation starting in 2015



Experience in drawing on research methods and bodies of knowledge from more than one discipline.'

Analyzing the impact of land expropriation program on farmers' livelihood in urban fringes of Bahir Dar, Ethiopia

Influence of housing conditions in informal areas on the public health of its inhabitants. Nampula, combining Informal settlement + Public health + sociology and environment.

Development of the urban district plan for the district of Nampula, where the work team was composed of architects, engineers, sociologists, geographers, jurists among others and used different work methodologies.

Writing scientific articles with specialists from different areas of knowledge.

Combining knowledge from sociology and anthropology linking knowledge from public health and epidemiology.

Knowledge and technology transfer of plastic fiber reinforced hollow blocks to small enterprises.

Research based design projects in architecture, urban design and urban planning

Architectural and planning projects.

Experience in drawing on research methods and bodies of knowledge from more than one discipline.'

assessing potentials of PPP development in Ethiopia, drawn methods of policy (political science), economic aspect (economics) and legal framework issue (law).

Research undertakings in the university are conducted across different disciplines, which are mega in nature demanding at least the participation of three different areas of specialty/departments.

application and exercise scenario planning.

urban redevelopment projects on river sides in Mekelle that incorporated different disciplines.

research in West African cities GPS-tracking of (illegal) dumping sites, a method practiced in geography and participation in a Model African Union session, a method designed in political sciences.

urban research agenda which drew researcher from geography, political science, anthropology, economics and education

Linking political economy, gender, humanitarian aid, peace and security

Barriers and success factors for knowledge integration

Policy and institutional level barriers

absence of favorable institutional and policy frameworks;

fragmented efforts by actors;

lack of collaboration between different stakeholders;

lack of coordination and synergy;

lack of resources

lack of knowledge sharing environment;

lack of policy harmonization between different political parties dealing with land management at local and central level, and

non-inclusion of the popular knowledge in the curricula;

political instability, and

government insights (looking) for those intellectuals who strive to untie the problem of poverty, and

sustainability of fundings collaborative and partnership-based programs (in funding and institutional focus).

Barriers and success factors for knowledge integration

Ways of doing research

- Availability of documents in local knowledge (Costly in time and Resource);
- accessibility of disseminated research findings (or not in local Language);
- Duplication and fragmentation of research Every time is common to restart something already researched and database available;
- limitation of time;
- methodological gaps and limited multidisciplinary research methods;
- problems demand multi-disciplinary and transdisciplinary explanations;
- Theory oriented recommendations (and so-called best practice);
- Too much focus on disciplinarity
- Understanding and Clarity problem





Barriers and success factors for knowledge integration

Personal factors

- Expectation;
- Economic Poverty;
- Fear;
- Interest In the topic (2);
- Interpersonal Interaction;
- Lack of awareness (3);
- Lack of commitment and courage;
- Lack of experiences on the expert (2);
- Lack Of Participation(2);
- Lack Of Teamwork With Local Leaders;
- Lack Of Trust
- The Other Participants That Their Knowledge Will Be valorised For The Common Good And Not Misused;
- Language Barrier Between Disciplines(3);
- Low Awareness About Other People's Ideas;
- Kindness, tolerance, patience. ;
- Not Feeling At Ease And Safe. ;
- Resistance To Change;
- Ridged Personal Stands;
- Unwilling To Learn From actors, and
- working Culture(4)..

Summary Barriers

Barriers:

- 1. Disciplinary silos -
- 2. Lack of common language -.
- 3. Power dynamics.
- 4. Funding and resource constraints -
- 5. Time constraints -

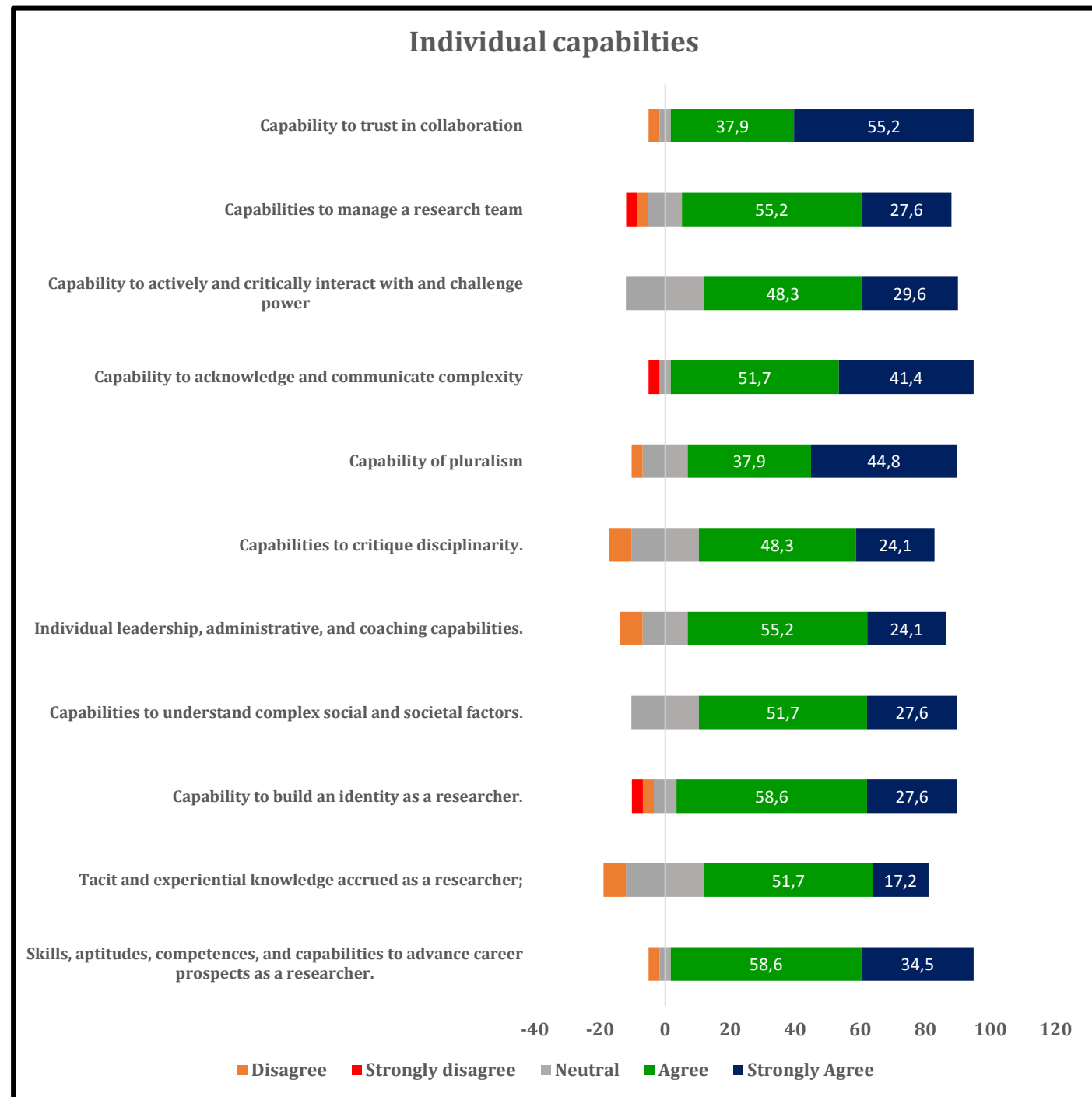
Success factors

Success factors:

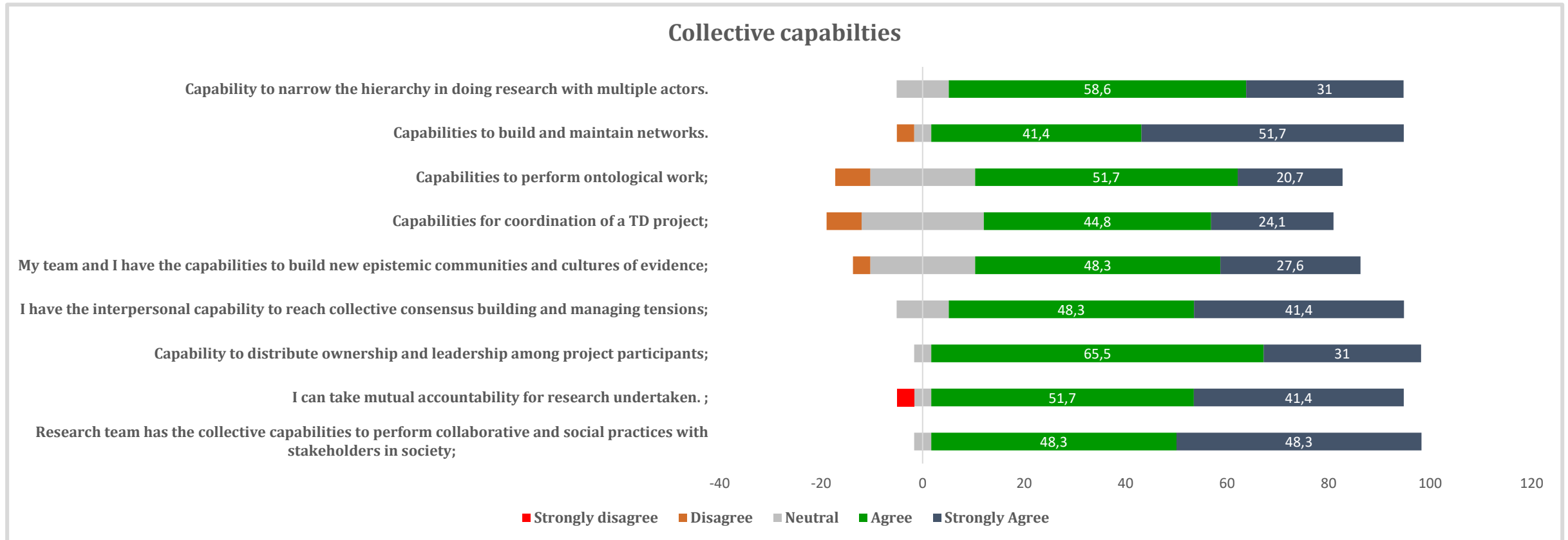
1. Shared vision and goals -
2. Effective communication -
3. Collaborative leadership -
4. Flexibility and adaptability -
5. Capacity building -

Capabilities for transdisciplinary research:

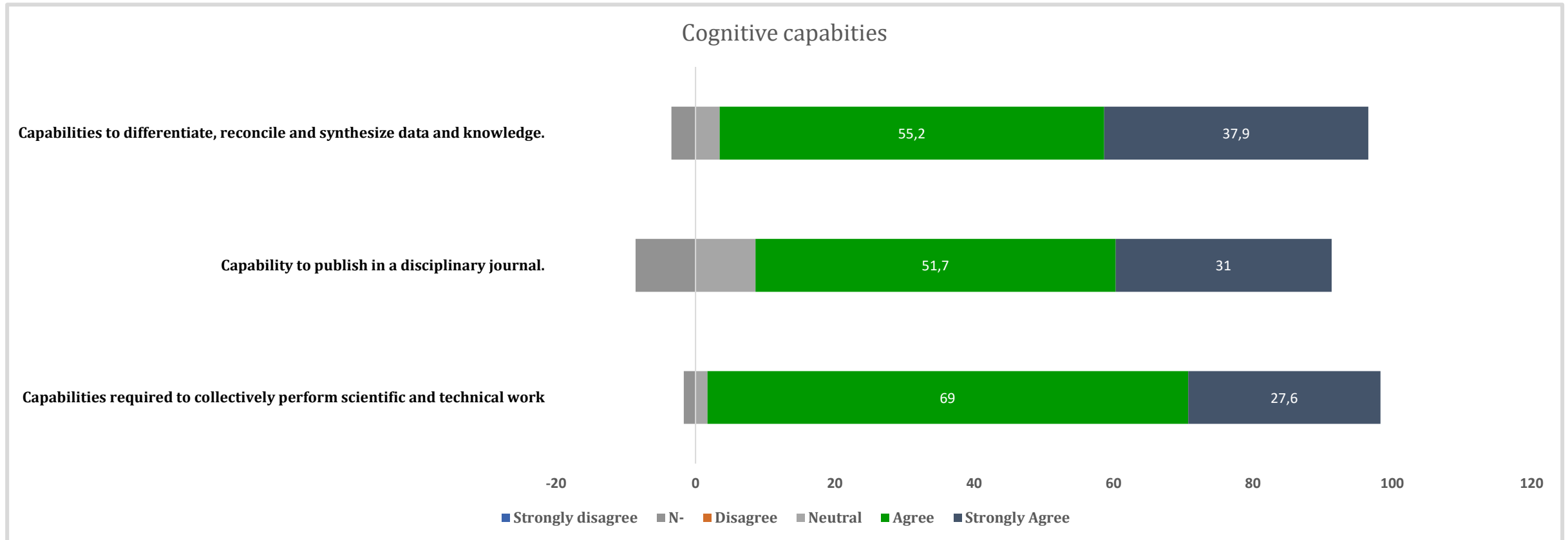
Assessment result of individual Capabilities for TD research



Capabilities for transdisciplinary research: Assessment result of collective Capabilities for TD research



Capabilities for transdisciplinary research: *Cognitive capabilities*





The Toolkits for Transdisciplinarity series

- The Toolkits for Transdisciplinarity series highlights existing compilations of methods useful for transdisciplinary research.
- This popular series expands the repertoire of methods available to transdisciplinary researchers by introducing them to previously unfamiliar methods
- Of the eight toolkits, two (toolkit #1 on knowledge co-production, toolkit #8 on integration) were developed by transdisciplinary researchers.
- The others were developed in different contexts but still include many methods that transdisciplinarians will find useful.
- One toolkit provides concepts and methods relevant to the full range of transdisciplinary research, while the others cover four key aspects of transdisciplinary investigations:
 - 1. collaboration,
 - 2. synthesis of knowledge from relevant disciplines and stakeholders,
 - 3. thinking systemically, and
 - 4. making change happen.



The Toolkits for Transdisciplinarity series

- More specifically, the eight toolkits can be categorized as follows:
- Full range of transdisciplinary research
 - Research Integration and Implementation (toolkit #6)
- Collaboration:
 - Collaboration (toolkit #4)
- Synthesis of knowledge from relevant disciplines and stakeholders:
 - Co-producing Knowledge (toolkit #1)
 - Dialogue Methods for Knowledge Synthesis(toolkit #3)
 - Integration Methods(toolkit #8)
- Thinking systemically:
 - (Dynamic) Systems Thinking (toolkit #7)
- Making change happen:
 - Engaging and Influencing Policy (toolkit #2) Change (toolkit #5)

Status of use of transdisciplinary research methods by the respondents

	AAU	BD	LU	MU	Frequency	Category of the TD method
	Delphi method (6)		Delphi method (3)		9	Methods for coproduction of knowledge,
	Integration through research questions and hypothesis formulation (3)	Integration through research questions and hypothesis formulation	Integration through research questions and hypothesis formulation (2)	Integration through research questions and hypothesis formulation (2)	8	Methods of integration
	Stakeholder Analysis (5)	Stakeholder Analysis (2)	Stakeholder Analysis	Stakeholder Analysis (4)	8	Methods for change
	Integration through conceptual clarification and theoretical framing (4)		Integration through conceptual clarification and theoretical framing	Integration through conceptual clarification and theoretical framing	6	Methods of integration
	Scenario Planning (3)	Scenario Planning (2)		Scenario Planning	6	Methods for coproduction of knowledge,

Status of use of transdisciplinary research methods by the respondents

AAU	BD	LU	MU	Frequency	Category of the TD method
Appreciative Inquiry (3)	Appreciative Inquiry	Appreciative Inquiry		5	Dialogue method
Most significant change technique (3)		Most significant change technique;	Most significant change technique	5	Methods for coproduction of knowledge,
Quantitative risk matrices (2)		Quantitative risk matrices (2)	Quantitative risk matrices	5	Methods Research Integration and Implementation
Story wall method		Story wall method (3)	Story wall method	5	Methods for coproduction of knowledge,
Actor constellation method	Actor constellation method	Actor constellation method	Actor constellation method	4	Methods for coproduction of knowledge,
Integration through development and application of models (2)		Integration through development and application of models (2)		4	Methods of integration
Introduction to systems thinking	Introduction to systems thinking	Introduction to systems thinking;	Introduction to systems thinking	4	Methods (Dynamic) Systems Thinking
Nominal Group Technique (2)	Nominal Group Technique	Nominal Group Technique		4	Dialogue method
Scoping; 3	Scoping;			4	Methods for change
Soft Systems Methodology (2)		Soft systems methodology (2)		4	Dialogue method

Status of use of transdisciplinary research methods by the respondents

	AAU	BD	LU	MU	Frequency	Category of the TD method
1.	Integrative assessment procedures		Integrative assessment procedures;(2)		3	Methods of integration
1.	Toolbox approach (2)		Toolbox approach;		3	Methods for coproduction of knowledge,
1.			Framing: a quick guide	Framing: a quick guide	2	Methods Research Integration and Implementation
1.	Influence and interest matrix	Influence and interest matrix			2	Methods of Engaging and Influencing Policy
1.			Power cube	Power cube	2	Methods Research Integration and Implementation
1.	Screening, using, refining, & further developing effective integrative scientific methods		Screening, using, refining, & further developing effective integrative scientific methods		2	Methods of integration
1.			Systems thinking tools	Systems thinking tools	2	Methods (Dynamic) Systems Thinking
1.	Three types of knowledge tool	Three types of knowledge tool			2	Methods for coproduction of knowledge,
1.	Unknowns taxonomy			Unknowns' taxonomy	2	Methods Research Integration and Implementation

Status of use of transdisciplinary research methods by the respondents

	AAU	BD	LU	MU	Frequency	Category of the TD method
1.				After Action Review	1	Methods for change
1.	Assessment and Change of Limiting Beliefs				1	Methods for change
1.	Consensus Development Panel				1	Dialogue method
1.	Emancipatory boundary critique;				1	Methods for coproduction of knowledge,
1.		Ethical Matrix			1	Dialogue method
1.			Five-why technique		1	Methods of Engaging and Influencing Policy
1.				Integration through artifacts, services, and products as boundary objects	1	Methods of integration
1.				Principled Negotiation	1	Dialogue method
1.	Strategic Assumption Surfacing and Testing				1	Dialogue method
1.	Walt Disney Circle;				1	Methods for change
	53	13	29	20	111	
1.			Hierarchical analysis		1	
1.			Participatory appraisal		1	
1.	Concurrent triangulation method				1	
1.	54	13	31	20	114	