

Bridging the science-practitioner gap in ecosystem research for development

The impact of research for development investments in the Global South can be increased when research knowledge (approaches, findings) is used beyond the research partners. Analysis of the utilization of research knowledge from several research projects on ecosystems demonstrates that dissemination and stakeholder interaction are key to bridging science-practitioner gaps. For more evidence, it could help that research for development projects better document who is using research knowledge and for what.

Picture: Early and active involvement of key stakeholders in co-design of projects and co-creation of knowledge can enhance utilization of research knowledge. © R. Eschen

KEY MESSAGES

- Research knowledge is often not used by practitioners. Dissemination by non-academic partners and champions, and by television are associated with more research knowledge utilization
- Project co-design and knowledge co-creation via early and active stakeholder involvement enhance utilization of research knowledge
- Promoting project co-design and knowledge co-creation can help to reduce the science-practitioners gap in research on socio-ecological systems
- Research funders and leaders need to rethink the role of non-academic partners in the design and governance of research for development projects



Dissemination via television and dissemination by non-academic partners or champions were associated with wider research knowledge utilization.
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What factors lead to better use of research knowledge?

The significant resource investment in research on ecosystems for development of the Global South does not necessarily result in high levels of research knowledge utilization by non-researchers. Research knowledge can be thought of as the result of scientific findings. Co-creation of research knowledge is then when these scientific findings are the result of research activities jointly conducted by academic and non-academic actors. Despite decades of multidisciplinary research (research involving scientists with different disciplinary backgrounds), the gap between scientists and other potential knowledge users, including e.g. policy makers or farmers, persists. Similarly, measuring the impact of transdisciplinary research (research involving scientists and non-academic stakeholders) on development pathways remains challenging. Altogether, the contribution of research knowledge to development pathways in the Global South is still contested, as some actors argue that a) key development actors outside the scientific community at local and national level do not have access to scientific results and b) scientific research often focuses on

scientific priorities without taking into account other actors' needs and knowledge. Then, these two factors can reduce the actual contribution of scientific research on development.

We studied the factors associated with various levels of research knowledge utilization in six ecosystem-related projects in the r4d programme (**Figure 1**). Our objective was to identify those factors that may result in higher levels of research knowledge utilization, in order to help increasing impact of funding agencies and research for development.

One of the striking, consistent patterns in the results of our study is that communication by scientists using scientific publications is associated with transmission or cognition but far less or not with influence and application, whereas communication by non-academic partners had a stronger, positive association with more levels of research knowledge utilization. This is an important result, because these projects were all coordinated by scientists in the North despite the clear interest of the donor in practical application of the

STAGES OF THE LADDER OF KNOWLEDGE UTILIZATION.
ADAPTED FROM LANDRY ET ALT. (2001).

Transmission	Transmission of research results to stakeholders through reports or presentations
Cognition	Research results seen and understood by stakeholders
Reference	Work cited as a reference in reports, studies, and strategies of action
Effort	Efforts were made to adopt the results by practitioners and professionals
Influence	Results influenced the choice and decision of stakeholders
Application	Results gave rise to applications and extension by practitioners and professionals

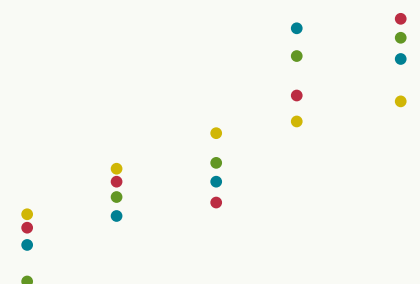



Figure 1: Assessing the level of research knowledge utilization among participants of several projects (each indicated by dots of the same colors) enabled us to test and quantify what factors affect variation among them.

results in the global South. Scientific career development usually depends on academic publication records and our results indicate the potential tension with practical use of research findings. Hence, donors of research for development activities should consider whether non-scientific organisations can lead successful research for development projects. Our results also highlight the need for promoting balanced and effective interdisciplinary and transdisciplinary collaboration in r4d project teams. Hence, project donors and applicants for funding should consider alternative possibilities for project leadership when designing research projects that aim to result in high levels of research knowledge utilization (see implications on page 4).



Small scale farmer Mama Zahara was able to promote and facilitate implementation or adoption of results of the Woody Weeds Project.
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Evidence of good practices

Ecosystems projects were found to achieve **more stages/levels of utilization of knowledge at local than at national or global scale**, while the targeted level of research knowledge utilization was consistently higher than the achieved level. Further, **regular communication** during the project lifetime was associated with significantly higher levels of research knowledge utilization. The level of achieved research knowledge utilization was significantly higher in the four six-year projects than in the two three-year projects. A similar pattern emerged when comparing the targeted and achieved level of research knowledge utilization in six-year and shorter projects, suggesting the **need for longer projects** if impact is to be achieved within the project's lifetime.

Dissemination of results via television was associated with higher levels of utilization, while dissemination via peer-reviewed journals articles was associated with significantly lower levels of research knowledge utilization. When non-academic project partners, such as local organisations, governmental organisations or NGOs, are responsible for dissemination, a higher of utilization beyond the scientific community is achieved than when scientific partners are responsible. This discrepancy may result from the high degree of stakeholder involvement in all studied projects.

Overcoming barriers to research knowledge utilization

During interviews with project participants, the following were mentioned as key strategies for overcoming barriers to research knowledge utilization:

- early and active stakeholder engagement (for example during project development)
- regular communication
- promotion of champions, i.e. particularly motivated people that promote and facilitate implementation or adoption of the project results.

Survey respondents provided evidence for their assessment of the achieved level of research knowledge utilization, and the evidence suggests that not all respondents know well what happens with the research knowledge beyond transmission or reference. Yet, the interviewees explained in some detail

IMPLICATIONS FOR DONORS AND RESEARCHERS INTERESTED IN RESEARCH ON ECOSYSTEMS FOR DEVELOPMENT

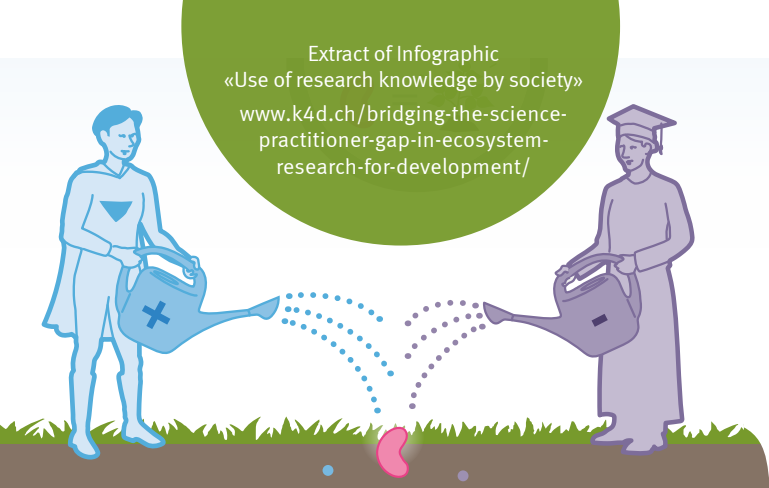
- **Secure early involvement of non-academic parties in co-design and co-creation.**

Non-academic parties should be recognised as potential project partners or co-applicants. Given that non-academic project partners appear to be key for successful research knowledge utilization, these partners should have a prominent role in design and implementation of the dissemination strategy and of the research. Opening the scope of applicants to include non-academics represents a strategy for bridging the science-practitioner gap. It is important that research proposals are problem-driven, based on an understanding of the situation on the ground. This requires early and good collaboration between academic and non-academic partners in the research process, and demonstrated experience in the topic as well as knowledge of the local context by co-applicants. Such knowledge of the local conditions may be the result of prior experience working in the area or of visits during the proposal development stage.

- **Improve documentation of research knowledge utilization beyond the project sphere**

Even though that dissemination of project results can be tracked easily on social media and Google Scholar, but also by documenting other dissemination events such as television broadcasts, the uptake of the message, influence and impact remain difficult to measure because they follow formal and informal channels. Even if the evidence may not be publicly available, it is important to document policy discussions and meetings with third parties. Especially documenting influence of research knowledge on policy processes and stakeholder decisions and practices is especially relevant for demonstrating higher levels of research knowledge utilization, to development actors and funding agencies.

the utilization of their knowledge. Moreover, they indicated that records of how knowledge generated is being utilized beyond the transmission stage are important for identification of collaborators for future projects and to show donors and reviewers of project proposals the impact the collaborators have had in the past. We therefore recommend that projects keep better records of research knowledge utilization beyond the transmission stage, at least by recording page views, links, likes and retweets, as well as citations.



METHODS – QUANTITATIVE ASSESSMENT OF RESEARCH KNOWLEDGE UTILIZATION PROMOTING AND HINDERING FACTORS

Most existing research knowledge utilization studies are reviews of the literature or narrative comparisons of case studies. Moreover, most studies lack an analytical framework and formal testing of hypotheses is rare. Formal statistical testing would reduce potential bias in interpretation of the utilization patterns and could contribute to a more solid evidence base to support interventions to enhance research knowledge utilization. We therefore tested statistically which characteristics of the project, the project team and the stakeholder interactions influence the extent of utilization of research knowledge generated by these projects.

We assessed factors affecting the level of research knowledge utilization in six ecosystem-related projects in the r4d programme. The primary focus of our work was on use rather than on generation of research knowledge, employing a combination of a survey and follow up interviews with some survey respondents. The analytical framework was based on stages of knowledge using the research knowledge utilization ladder, based on Landry, Amara and Lamari (2001). Six levels of research knowledge utilization span a range from communicating the knowledge to stakeholders, via various forms of uptake and influence to practical application of the knowledge (**Figure 1**).

The six studied projects were diverse in their topics, geographic scale and locations of the activities, as well as in the members of the project teams. These factors, among others, may influence the perceived level of research knowledge utilization and create variability in the responses. To capture this variability, we asked survey respondents to indicate the levels of research knowledge utilization that were targeted and achieved in their projects on five geographic scales (**Figure 1**). All team members were asked about the level of research knowledge utilization by stakeholders beyond the research consortium. The 29 respondents, included project coordinators, scientists and students in Switzerland and in countries of the Global South.

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FURTHER INFORMATION

r4d Synthesis Project “Utilization of research knowledge produced by r4d projects in the field of ecosystems management”

www.r4d.ch/r4d-programme/synthesis

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