Towards a framework for the evaluation of climate service and knowledge transfer products within climate and coastal research

Susanne Schuck-Zöller[1], Elke Keup-Thiel[1], Holger Brix[2], Christian Buschbaum[3], Jörg Cortekar[1], Christiane Eschenbach[2], Irene Fischer-Bruns[1], Stephan Frickenhaus[3], Klaus Grosfeld[3], Lars Gutow[3], Wolfgang Hiller[3], Daniela Jacob[1], Gesche Krause[3], Elke Meyer[2], Insa Meinke[2], Lars Nerger[3], Diana Rechid[1], Corinna Schrum[2], Johannes Schulz-Stellenfleth[2], Emil Stanev[2], Renate Treffeisen[3]

Definition

In 2016 the German "Wissenschaftsrat" (Council of Science and Humanities) broadened the meaning of the term **"knowledge transfer"** by including processes of trans-disciplinary research and thus overarching **unidirectional as well as bidirectional transfer activities.**

Working group within Helmholtz Association (Earth and Environment, PACES II)

To develop criteria for evaluation and respective indicators, appropriate to evaluate knowledge transfer and dialogue processes with stakeholders as well as climate and coastal service activities, scientists of various disciplines within Research topic 4 (Bridging Research and Society) worked together. They came from the Institute for Coastal Research and the Climate Service Center Germany (both Helmholtz-Zentrum Geesthacht) and the Alfred Wegener Institute Bremerhaven.

Unique activity within Helmholtz Association

Objects of evaluation

Every phase of project management can be an object of evaluation.

Input	Process	Output	Outcome	Impact

Criteria and indicators for output (preliminary version)

Criterion	Indicator
Availability	• Accessibility • Media responsivity • Easy-entry • Support for downloads
Visibility, dissemination in target groups	• Publications • Events and presentations • Information (material) on product • Public relations material and activities
Scientific quality, methodological quality	• Quality of data • Graphic design • Level of language • Up-to-date • Completeness • Extent • Transparency • Reflexivity • Reliability • Quality assurance (internal/external)
Degree of innovation	• Originality
Scaling	• Breadth and depth of product
Practical relevance	• Coverage of target group • Achievement of purpose • Usefulness • Lucidity • Navigation • Usability • Permanent improvement • Rights of use
Strategic potential	• Potential for transfer • Potential for societal transformation • Strategy for further development

Criteria and indicators for outcome (preliminary version)

Criterion	Indicator
Use	• Breadth of use • Depth of use • Frequency and duration of use • Suitability for target group • Relevance • Applicability for education
Satisfaction	• Comprehensibility • Target achievement • Users' appreciation • Perception of being up-to-date • Estimation of trustability • Identification with product
Dissemination, attention	• Quotations/references • Degree of recognition • Intensity of perception • Multiplier effects • Awards • Indirect effects
Users' learning effects	• Degree of innovation • Improvement of expertise • Scientific connectivity • Societal transformation capability
Valorisation	• Licensing • Operationalisation • Transferability

Summary of the working group discussions

- **A first preliminary framework for evaluation could be designed**
- **It is possible to standardize the criteria for evaluation across different research fields**
- **Evaluating impact is difficult and needs accompanying research**
- **It should be possible to evaluate results qualitatively and quantitatively**
- **Describing results by narratives ("story-telling") might give an overall impression and a better interpretation**
- **Every evaluation is led by the objectives of the product or project. They might have changed during the process of development.**
- **For every product or project the weight of the criteria has to be adapted and an individual set of indicators is to be chosen.**

Outlook

- **Enhance networking on this issue within whole Helmholtz Association**
- **Promote definition of clear project objectives and respective evaluation criteria already with application for funding**
- **Develop criteria to evaluate the process of the product/project development and care for continuous monitoring**

References

- OECD (2002): Glossary of key terms in evaluation and results based management, http://www.oecd.org/development/peer-reviews/ 2754804.pdf, last access 14 July 2016
- Wissenschaftsrat (2016): Wissens- und Technologietransfer als Gegenstand institutioneller Strategien

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