Innovating The Ways Metrics Are Applied, Responsible Metrics & Measuring Openness

HOST

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SPEAKERS

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NOTES

- **The webinar is being recorded.** All participants will receive a link to the recording later today.
- **Slides are on Zenodo:** See the chat box for the link.
- **Questions?** Put them in the chat box. We'll put questions to the speakers at the end of the webinar.

INNOVATIVE METRICS WORKING GROUP

https://libereurope.eu/strategy/innovative-scholarly-communication/metrics/

Priorities

- Qualitative measures
- Innovation, creation and documentation of new metric standards
- Competence building in the libraries and among researchers
- Alternative metrics for management reporting
- Ethics of alternative measures
- Guidelines for how to explain to management why measures fluctuate

Openness in assessments of scholarly work

Isabella Peters,
ZBW – Leibniz Information Center for Economics
Webinar, 10.09.2019

ZBW Leibniz-Informationszentrum Wirtschaft
Leibniz Information Centre for Economics

Die ZBW ist Mitglied der Leibniz-Gemeinschaft.

How to measure openness?

Indicators

- Quantity (or: output or productivity)
  - # publications
- Performance (or: impact or quality)
  - # citations, Journal Impact Factor, H-Index
- Structural
  - # co-authors, cited disciplines
- Process (or: doing open science)
  - Use of open source software, publish OA
- System level (or: framework conditions)
  - Policies, tenure-decisions

Durieux, V., & Gevenois, P. A. (2010). Bibliometric Indicators: Quality Measurements of Scientific Publication. Radiology, 255(2), 342-351.
Lampert, D., Lindorfer, M., Prem, E., Irran, J., & Sanz, F. S. (2017). New indicators for open science-Possible ways of measuring the uptake and impact of open science. fteval Journal for Research and Technology Policy Evaluation, 44, 50-56.

How to measure openness?

The Open Definition

- Open means anyone can freely access, use, modify, and share for any purpose (subject, at most, to requirements that preserve provenance and openness).

How to measure openness?

Altmetrics/ Social Media Metrics

- Greater variety
  - Types of engagement
  - Types of research products
  - Types of stakeholders

- MLE showed that “only few types of Open Science incentives and rewards are currently being implemented” (p. 99)

How to measure openness?

Open Science Career Evaluation Matrix (OS-CAM)

- Areas to be considered
  - Research output
  - Research process
  - Service and leadership
  - Teaching and supervision
  - Professional experience

Open Science Career Assessment Matrix (OS-CAM)	
Open Science activities	*Possible evaluation criteria*
RESEARCH OUTPUT	
Research activity	Pushing forward the boundaries of open science as a research topic
Publications	Publishing in open access journals Self-archiving in open access repositories
Datasets and research results	Using the FAIR data principles Adopting quality standards in open data management and open datasets Making use of open data from other researchers
Open source	Using open source software and other open tools Developing new software and tools that are open to other users
Funding	Securing funding for open science activities
RESEARCH PROCESS	
Stakeholder engagement / citizen science	Actively engaging society and research users in the research process Sharing provisional research results with stakeholders through open platforms (e.g. Arxiv, Figshare) Involving stakeholders in peer review processes
Collaboration and Interdisciplinarity	Widening participation in research through open collaborative projects Engaging in team science through diverse cross-disciplinary teams
Research integrity	Being aware of the ethical and legal issues relating to data sharing, confidentiality, attribution and environmental impact of open science activities Fully recognizing the contribution of others in research projects, including collaborators, co-authors, citizens, open data providers
Risk management	Taking account of the risks involved in open science
SERVICE AND LEADERSHIP	
Leadership	Developing a vision and strategy on how to integrate OS practices in the normal practice of doing research Driving policy and practice in open science Being a role model in practicing open science
Academic standing	Developing an international or national profile for open science activities

O'Carroll, C., Rentier, B., Cabello Valdès, C., Esposito, F., Kaunismaa, E., Maas, K., ... & Lossau, N. (2017). Evaluation of Research Careers fully acknowledging Open Science Practices-Rewards, incentives and/or recognition for researchers practicing Open Science. Publication Office of the European Union. http://ec.europa.eu/research/openscience/pdf/os_rewards_wgreport_final.pdf

How to measure openness?

Areas to be considered

- scientific process
  - conceptualisation, data gathering/creation
  - analysis
  - diffusion of results
  - review and evaluation

- system level
  - reputation system, recognition of contributions, trust
  - open science skills, awareness
  - science with society

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fteval JOURNAL
for Research and Technology Policy Evaluation
September 2017, Vol. 44, pp. 50 -56
DOI: 10.22163/fteval.2017.276

NEW INDICATORS FOR OPEN SCIENCE

POSSIBLE WAYS OF MEASURING THE UPTAKE AND IMPACT OF OPEN SCIENCE

DIETMAR LAMPERT, MARTINA LINDORFER, ERICH PREM, JÖRG IRRAN AND FERMÍN SERRANO SANZ

Requirements from research funders	mean rating (0..10 max.)
% of research funders that mandate the provision of the data / software code produced in the context of the funded activity AND who mandate the conformity to data (exchange) standards	7.9
RFO **PM**	

Accessibility	mean rating (0..10 max.)
accessibility of open data / code as % of all data / code produced by publicly (co-)funded projects	9.1
R RO RFO	

Machine-readable	mean rating (0..10 max.)
% of machine-readable data / metadata	7.9
PU R RFO	

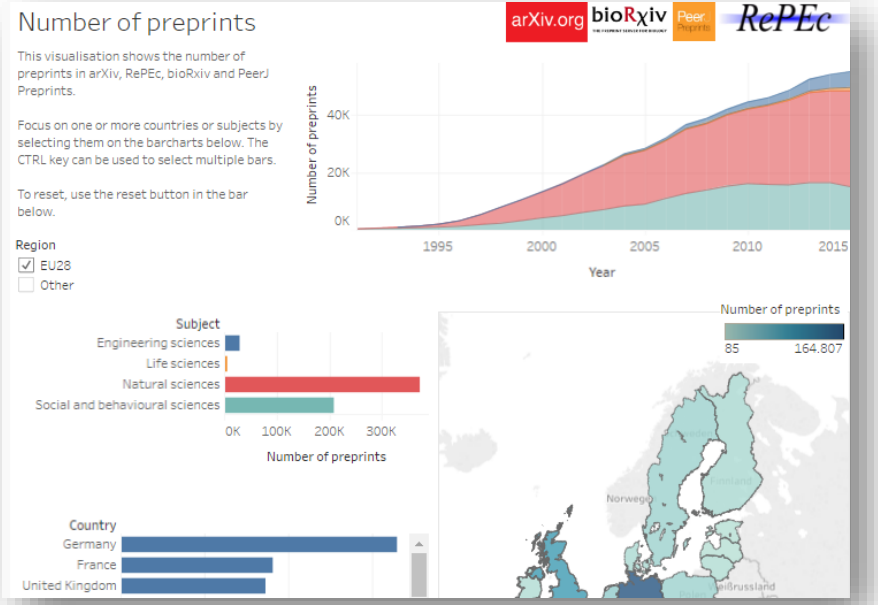
Availability of metadata	mean rating (0..10 max.)
availability of explanatory metadata as % of all available data (resulting from publicly (co-)funded research)	7.5
PU R RFO	

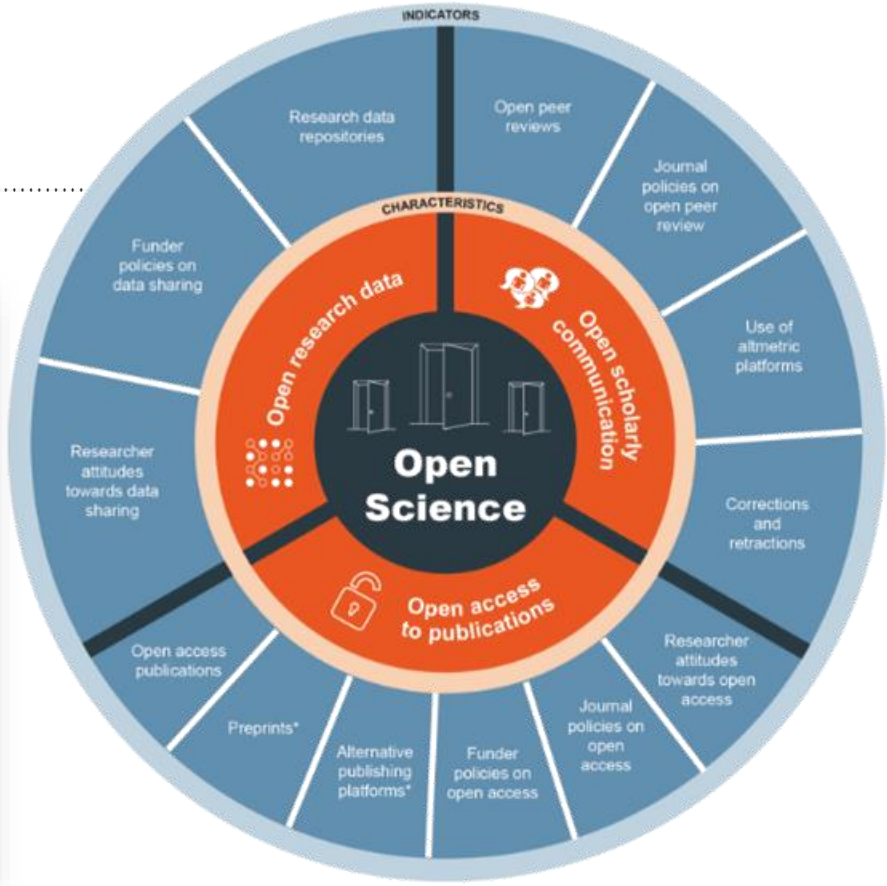
Quality of metadata	mean rating (0..10 max.)
quality of metadata (versioning, volume, data format, description of fields, etc.)	8.2
PU R RFO	

Simulation results	mean rating (0..10 max.)
usability of simulation results (models, data, and code)	7.5
R RFO **PU**	

How to measure openness?

Open Science Monitor





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http://ec.europa.eu/research/openscience/index.cfm?pg=home&section=monitor

Why measure openness?

Sticks and carrots

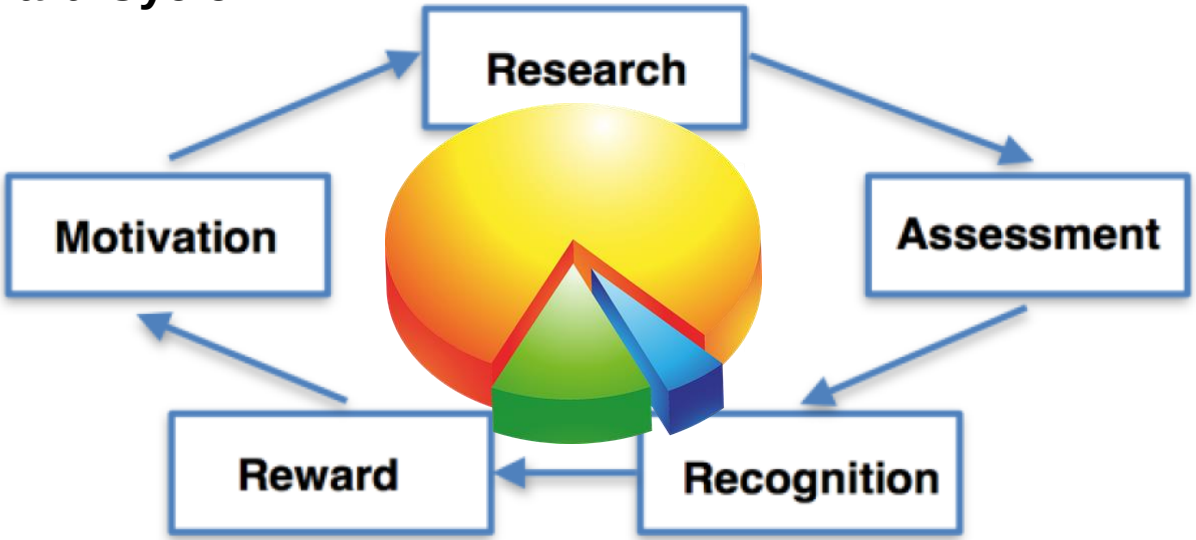
- “incentivize both research quality and open practices” (p. 26)

- “linking open practices with performance evaluation has proven to be a very effective measure, especially when made mandatory” (p. 29)

MLE on Open Science: Final Report -Altmetrics and Rewards (2018). https://rio.jrc.ec.europa.eu/en/library/mle-open-science-final-report-altmetrics-and-rewards

Why measure openness?

Research Reward Cycle



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What does openness mean to us?

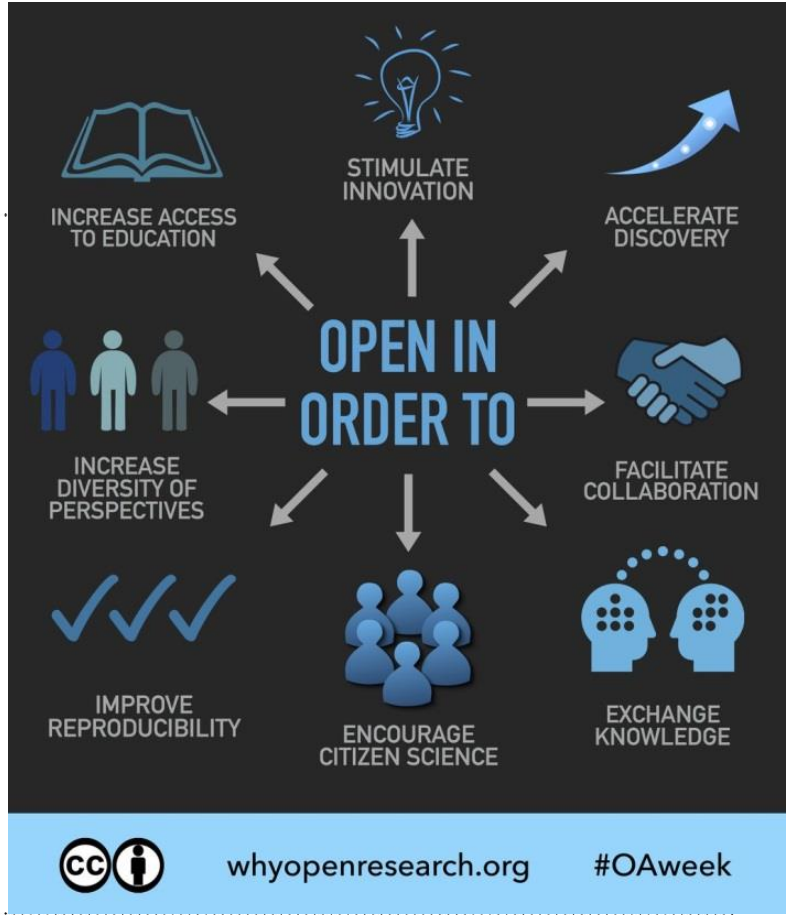
Indicators of Openness

- Do they really measure what matters?

What does openness mean to us?

- Quality
- Efficiency
- Reproducibility
- Credibility
- Visibility

- “Open science is about improving the quality, accountability and social contribution of research…” (p. 96)



EC, 2016, DOI: 10.2777/061652
McKiernan, Erin (2017): OA Week graphics, "Open in order to...". figshare. Fileset. https://doi.org/10.6084/m9.figshare.5527900.v3
MLE on Open Science: Final Report -Altmetrics and Rewards (2018). https://rio.jrc.ec.europa.eu/en/library/mle-open-science-final-report-altmetrics-and-rewards

What does openness mean to us?

Indicators of Openness

- Do they really measure what matters?
- What is important to incentivize?
  - Different for different stakeholders?

Thank you!

Openness in assessments of scholarly work

Isabella Peters,
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Leibniz Information Centre for Economics

The UK's European university

University of Kent

THE OFFICE FOR SCHOLARLY COMMUNICATION/ Responsible metrics: Why management matters

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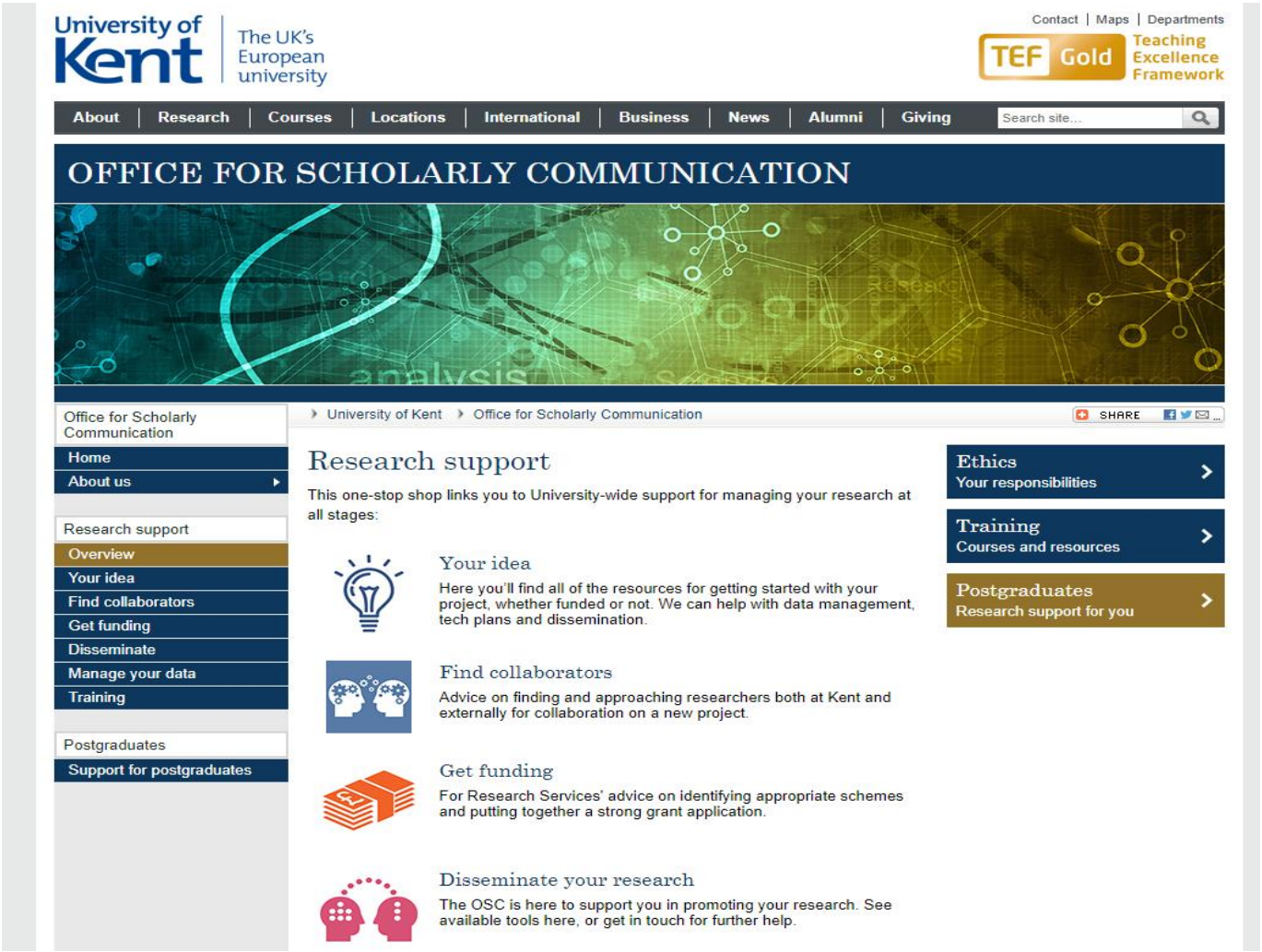
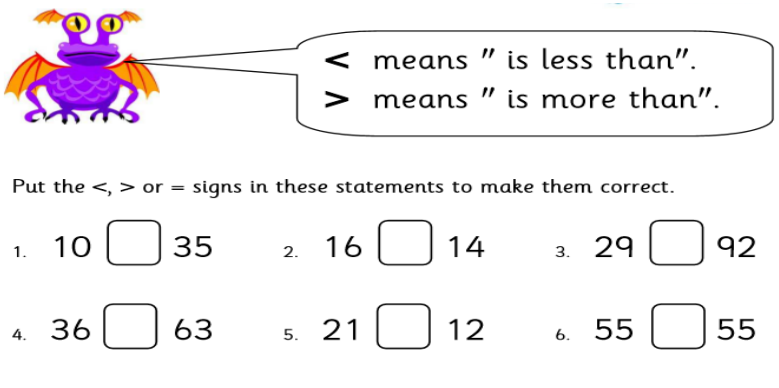
The Office for Scholarly Communication



Why metrics for research evaluation?



This 3?

0, 0, 0, 0, 0.1, 0.2, 0.7, 0.8, 0.83, 3

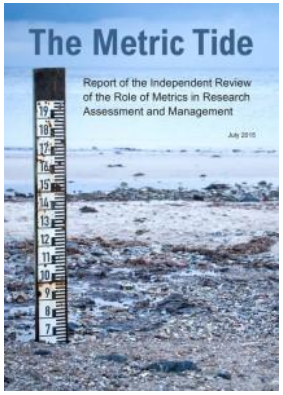
Or this 3?

3, 5, 12, 24, 67, 89, 93, 105, 213

The problem with targets?

People aim at them

What are institutions doing?



Responsible Metrics statements:

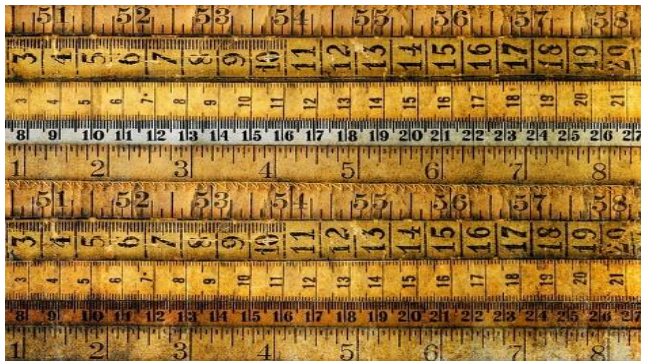
- Leiden Manifesto
- San Francisco Declaration on Research Assessment
- The Metric Tide
- Individual policy

Implementation:

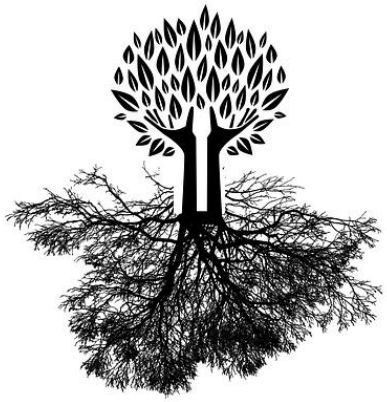
- Target Setting
- Evaluation
- Promotions
- Hiring
- Training

Explaining research metrics to management

Proactive engagement



Education



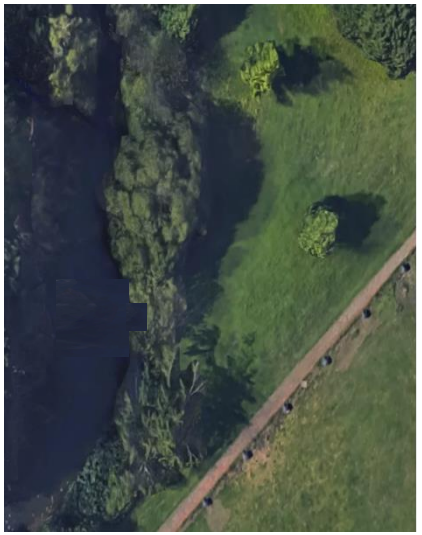
What management can do

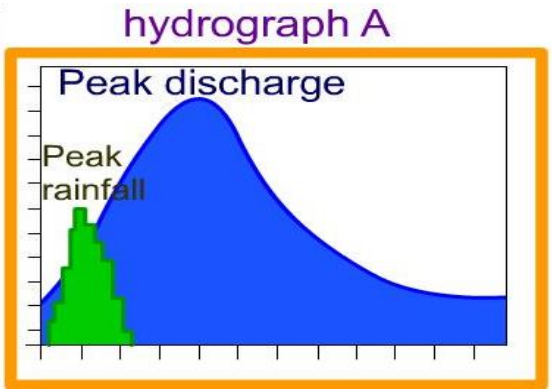
Resources

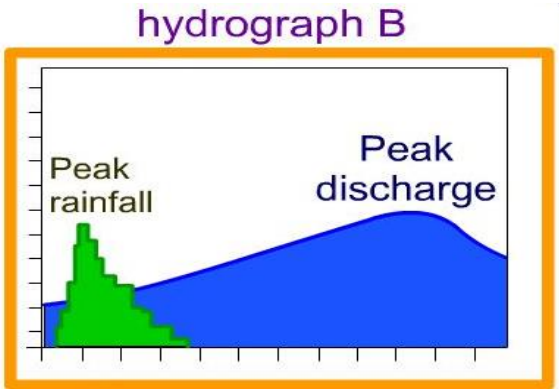
Proactive engagement

- Knowing in advance is better than explaining afterwards
- Measure what matters
- Good practice is sustainable
- Highlighting expertise

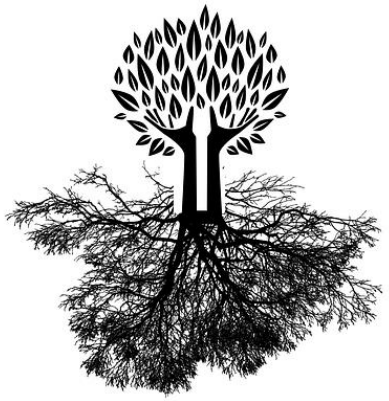
Education




hydrograph A
Peak discharge
Peak rainfall


hydrograph B
Peak rainfall
Peak discharge

What management can do



- Data quality:
  - Disambiguation
    - ORCiD
    - Scopus/Web of Science/Google Scholar etc.
    - Single/archive copies, not multiple platform (single source of truth)
- Make the output Open Access (pre-print, green, gold, …) as soon as possible
- Encourage inclusion of Open Data reporting/references in the article
- Have a contact for specific advice or queries
- Compare apples with apples, but if you want fruit salad, don’t only water the apple trees

Resources

- Leiden Manifesto (https://www.nature.com/news/bibliometrics-the-leiden-manifesto-for-research-metrics-1.17351) points 6-10 give relevant examples of fluctuation which are accessible.
- Metrics toolkit (http://www.metrics-toolkit.org/)? This gives the limitations of different types of metrics (e.g. http://www.metrics-toolkit.org/field-normalized-citation-impact/).
- Good examples such as “Metrics: journal's impact factor skewed by a single paper” (https://doi.org/10.1038/466179b) and Stephen Curry’s ‘I am not my H-index’ https://twitter.com/stephen_curry/status/1005118764369825794?lang=en
- https://libereurope.eu/blog/2018/06/28/scholarlymetricsreport/
- https://libereurope.eu/blog/2017/03/21/update-libers-metrics-working-group/

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THANKS!

Questions?

Please put them in the chat box.

Slides and a recording will be sent to all registered delegates.