

IG Sharing Rewards and Credit (SHARC)

RDA

11 PLENARY

MEETING

21-23 MARCH 2018

Berlin, Germany



Agenda

- **Brief introduction** to the group, A. CambonThomsen, 5 min
 - Goals of the group's project; origin and current standing; objectives of the meeting; What / Who needs to be rewarded?
- **Background paper's** content presentation:
 - Describing the chain of rewarding in sharing research data/resources, M. Yahia, L. Mabile, 15 min
 - Policy, legal and ethical aspects, A. Cambon-Thomsen, 5 min
 - First set of recommendations
 - Generic ones, A. Cambon-Thomsen, L. Mabile, 20 min
 - Community-specific ones, R. David, 15 min; M. Zilioli, 15 min;
- **Next steps from P11**
 - Background paper and recommendations will be submitted for community review
 - Finalised document will be submitted to the TAB+ for approval (according to RDA process)
 - Approved recommendations will be brought to national institutional levels in the various countries represented in the SHARC group as well as at supra-national levels (INGSA,EC). Some recommendations that SHARC will provide will need to be further documented at a broader geographical/institutional level that the CODATA Data Policy Committee may provide (A. Cambon-Thomsen, SHARC co- leader and Codata DPC member).

Introduction (1)

Goals of the group's project

Problem : lack of recognition of the sharing activity itself that may be complex and not well identified is part of the barriers to sharing

Goal: Explore/propose mechanisms and instruments that could be put in place to encourage the sharing of data and material samples in different research domains by **recognizing, crediting and rewarding the various steps of the work necessary to accomplish a reliable and useful sharing.**

Origin and current standing;

A Bof session in RDA P9, in Barcelona, April 2017

The constitution and approval of this interest group (June-October 2017)

First aim : background paper on state of the question, definitions, existing tools, possible recommendations

Introduction (2)

Objectives of the meeting

- 1) To meet and discuss with various RDA scientific communities and networks interested in the SHARC objectives of promoting sharing activities as recognized research outputs;
- 2) To get feedback and input from other communities to the ongoing background paper;
- 3) To network with relevant stakeholders involved in research assessment and publication.

Goals of the background paper

(https://docs.google.com/document/d/14_HxlrrkB0128EQpmTqrwXtuJTty3zQ_TLFODuoWage4)

- **General objective:** This document will be the basis for concrete policy recommendations for rewarding the sharing activity, to national, supra-national and community bodies involved in the process of research output assessments and to suggest pilot projects to implement them.
- **Specific objectives:** They are 1) to describe the steps and actors necessary in the process of rewarding the sharing of data and resources; 2) to review existing reward mechanisms; 3) to underline the gaps; 4) to recommend new ways and tools that can be generalized, based on case studies.

What / Who needs to be rewarded?

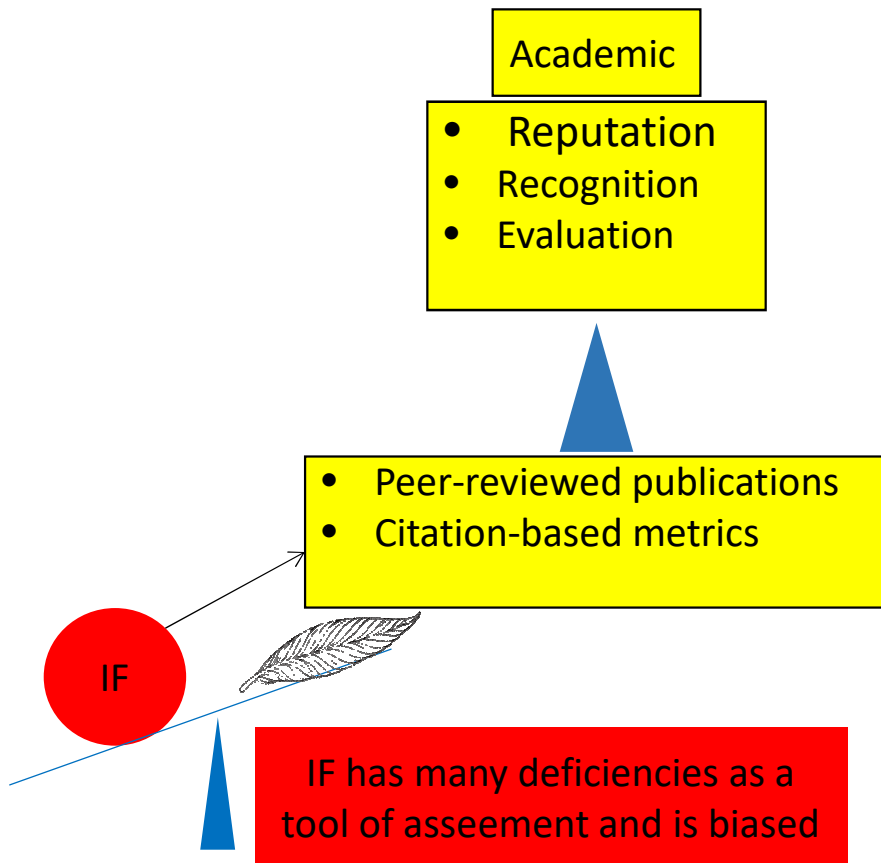
- **The actors in the process (individual level)**
 - At this stage we concentrate on researchers and the academic systems
- **The resource / infrastructure (resource community level)**
 - At this stage we concentrate on institutions/infrastructures serving the academic system
- For each of these groups of actors **the various steps of the process** may have different ways of being rewarded

Agenda

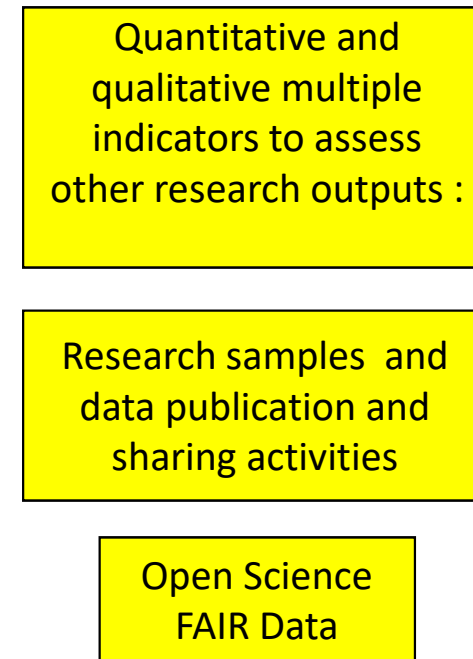
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From background paper

- **Introduction**
- **I. Describing the chain of crediting/rewarding in sharing research data and material resources.**
- 1.1. The data life cycle
- 1.2. Biospecimen cycle: steps involved
- I.3. Steps involved in sharing
- **I. 2.4. Crediting / Rewarding processes**



Need



The three phases of an evaluation scheme for data or samples sharing are :

- ❖ Crediting
- ❖ Assessing
- ❖ rewarding



Crediting : recognition for one's contribution to a scientific work

TO BE FINDABLE:

F1. (meta)data are assigned a globally unique and eternally persistent identifier.

F2. data are described with rich metadata.

F3. (meta)data are registered or indexed in a searchable resource.

F4. metadata specify the data identifier.

TO BE ACCESSIBLE:

A1 (meta)data are retrievable by their identifier using a standardized communications protocol.

A1.1 the protocol is open, free, and universally implementable.

A1.2 the protocol allows for an authentication and authorization procedure, where necessary.

A2 metadata are accessible, even when the data are no longer available.

TO BE INTEROPERABLE:

I1. (meta)data use a formal, accessible, shared, and broadly applicable language for knowledge representation.

I2. (meta)data use vocabularies that follow FAIR principles.

I3. (meta)data include qualified references to other (meta)data.

TO BE RE-USABLE:

R1. meta(data) have a plurality of accurate and relevant attributes.

R1.1. (meta)data are released with a clear and accessible data usage license.

R1.2. (meta)data are associated with their provenance.

R1.3. (meta)data meet domain-relevant community standards.

reliable Tracing

PID

ORCID
DOI
ORG ID ?



ASSESSING and REWARDING mechanisms

To become a 'reward' a crediting mechanism must be considered in the overall research assessment scheme.

Traditional assessment scheme

- in real practice, assessment of a research work is mainly achieved by using citation based-metrics that count the number of publications and citations in a given bibliometric database (mainly Web of Science, Scopus or Google Scholar). Qualitative evaluations that require critical reading of the publications, and the assessment of other achievements than scientific production are almost non existent
- Case of datasets: they enter the scientific digital record as an article (such as a **data paper**), are assigned a DOI, are indexed in common scientific databases and then easily tracked and reliably cited as any research articles
- But few data or resources papers

<https://www.wiki.ed.ac.uk/display/datashare/Sources+of+dataset+peer+review>

Open Journal of Bioresources, Ubiquity Press

<https://openbioresources.metajnl.com/>

Alternative assessment scheme

- Datasets have been archived in specific repositories and for some of them been assigned DOI similarly to journal articles. fairsharing.org
- As such they can be traced and be assessed as any research output provided that they are included in evaluation criteria.
- It is now necessary to consider **what should be evaluated** - openness, sharing, support to the community, implementation of FAIR principles, time investment, data and materials quality, impact, peer judgments, and usefulness to the field and to society - and **what should be measured** - number of re-utilisations, of visualizations, of downloads, of citations (of datasets and of digital objects related to physical materials)
- Valid **data-level metrics** (citation and usage) and FAIR indicators are now needed to evaluate those criteria as part of the usual research outputs

RDA ongoing activity to follow up:

FAIRmetrics and Data Usage Metrics WG / **Make Data Count**

How to reward?

- Rewarding is usually done through appointment or promotion in scientific career, prizes or honors attribution or grant allocations to pursue scientific projects.
- Sharing activities could be rewarded similarly.

Rewarding sharing activities by hiring and promotion in scientific careers.

- Open Science Career Evaluation Matrix (OS-CAM) from European Working Group on Rewards under Open Science [Carroll et al. 2017]

proposes a number of evaluation criteria specifically characterising a range of open-science activities, from research output to teaching and supervision. Regarding datasets, the following criteria are suggested:

- ✓ *Using the FAIR data principles*
- ✓ *Adopting quality standards in open data management and open datasets*
- ✓ *Making use of open data from other researchers*

>>>>> should be developed further, in particular regarding physical resources and what should be evaluated and measured exactly

Rewarding the sharing activity by allocating research funding

Through funding decisions:

- rewarding those who share by making FAIR principles a strong requirement in all proposals (rarely done so far)
- **by dedicating specific additional funding to sharing activities, on top of the overall project budgets.**

Rewarding by facilitating implementation issues

- **Sustainable human, financial and infrastructural support should be made available within research institutions** but small ones will not have the means to embark in such investment
- It may be simply impossible for researchers to abide by the FAIR principles due to a lack of resources or appropriate training on these issues.
- **More large-scale collaborative efforts is needed to make storage infrastructures and dedicated trained personnel available to all researchers regardless of their affiliation.**
- A large effort is also needed in training evaluators, selection committees as well as researchers themselves to take these principles into account and know how to implement them.

Policy, legal and ethical aspects

- **HISTORY** (The Bermuda Principles etc.) – A diversity. Issue : harmonisation while respecting diversity.
- **FUNDERS POLICIES**
 - European Commission
 - UK
 - USA
 - Australia
- **PUBLISHERS AND JOURNALS POLICIES**
- **RESEARCHERS AND RESEARCH INSTITUTIONS: INTELLECTUAL PROPERTY AND LICENSING**
- **REWARDING AND SCIENCE RESEARCH INTEGRITY**

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RECOMMENDATIONS

First draft of generic ones

2.1. Initial steps

2.1.1 Identifying blocking points

Recommendation 1.

To institutions and researchers

- Obstacles to data and/or samples sharing differ across scientific communities and data types. It is important to identify all the obstacles that lead to non-sharing or weak sharing and to qualify them. The willingness to share and the recognition of sharing are two concepts that can be strongly linked. If blocking points have not yet been fully identified consensually in a community, we recommend to investigate them further as a first step before designing any sharing policies.
- **Action:** For any relevant scientific community where it does not already exist, a survey should be undertaken to explore the reasons for not sharing data. It could take the form of multiple-choice questions.

cf DataOne C. Tenopir's ongoing study

Recent white paper from Springer ; PRACTICAL CHALLENGES FOR RESEARCHERS IN DATA SHARING

2.1.2. Training and education issues

Recommendation 2.

To researchers and institution and consortia administrators.

A general requirement for the reward of data sharing activities is the existence of an aware and expanding community of producers and users. Data are a crucial component of information and decision making, therefore data sharing needs to be incentivised. This also means that users should be educated to share data, use data-sharing infrastructures, as well as properly manage data and infrastructures for the common good. Therefore, knowledge institutions and knowledge workers providing continuous training and education are crucial for the development of mutual understanding on definitions, types and sharing practices in the data community. Organisations such as RDA contribute to this mutual understanding and to the creation of such a community.

Actions:

- Research institutions and consortia should provide regular training sessions to scientists and PhD students on practices such as self-archiving, standards for the identification, formatting and curation of data and metadata to make data reusable, publishing venue and related licensing, metrics and acknowledging and crediting the reuse. In the era of big data, it is also essential to address their use comprehensively, including their societal, ethical, philosophical and regulatory aspects.
(in agreement with the 2017 Report of the EU Working Group on Skills for Open Science for categories of Open Science skills and expertise).
- Researchers should ensure the training of members of their teams on those issues.
- Workshops should be specifically undertaken to precisely define such educational content and tools. Ways to release them to the relevant communities should be addressed (e.. E-learning). *Role for RDA?*

2.2. Policy / Legal aspects:

Recommendation 3.

To various stakeholders.

The multiplicity of heterogeneous rules regarding data sharing hampers their implementation. We recommend to harmonise policies in use for all relevant stakeholders (researchers, funders, research institution administrators, publishers, governmental policy makers) in order to standardize practices and send a clear message to the various communities as regards the importance of data sharing.

Action recommended to the RDA governance

Actions recommended to funders

Actions recommended to publishers-editors

Actions recommended to research Institutions

Actions recommended to researchers

2.2. Policy / Legal aspects:

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Action recommended to the RDA governance

Organise consensus-building workshops following the Delphi methodology with representatives of the various groups of stakeholders to identify points of convergence and divergence and strive to build consensus to design common rules. The results of such workshops should be communicated to international bodies that shape international regulation such as INGSA...

Actions recommended to funders

Harmonise incentives provided by all funders and ensure feasibility, in particular :

- Provide specific funding to enable not only data reuse but also to finance costs related to implementing FAIR data
- Propose targeted grant awards towards enhancement of collected data ex: Funding of replicating studies
- Enforce data sharing as one mandatory condition for obtaining funds
- Require from researchers a data management plan specifying data sharing arrangements following end of project
- Monitor systematically research projects to ensure that DMPs have been implemented. Otherwise, restricting new financing to researchers who have not done it.

Recommendation 3.

Actions recommended to publishers-editors:

- Require that data and Data Management Plans (DMPs) are published as open access to allow replication and checks
- Reject articles which datasets are not archived openly, unless a proper justification is provided by authors.

Actions recommended to research Institutions:

- Take data sharing activities into account the in the researcher's career assessment and evaluation.
- Require researchers design and implement a DMP specifying data sharing methods after research project completion.
- Systematically monitor research projects to ensure that DMP have been implemented; Otherwise set up a sanctioning process.
- Require acknowledgement or citation of reuse in DTA/MTA or in some policies accompanying data usage.

Formal acknowledgement of the data providers and/or funding agencies in all disseminated work making use of the data

Formal citation of the data providers and/or funding agencies in all disseminated work making use of the data. Ex. CoBRA

Co-authorship on publications resulting from use of the data

The **opportunity to collaborate on the project** (including, for example, consultation on analytic methods, interpretation of results, dissemination of research results, etc.

Results based (at least in part) on the data could not be disseminated in any format without the **data provider's approval**.

At least part of the **costs of data acquisition**, retrieval or provision must be **recovered**.

The data provider is given a **complete list of all products that make use of the data**, including articles, presentations, educational materials, etc (in MTA/DTA)

Actions recommended to researchers:

- Comply to the sharing policies
- Whenever possible, associate free open licences to datasets (such as Creative Commons) submitted to an appropriate repository.

2.3. Preliminary steps required for rewarding

Recommendation 4.

To researchers.

For an effective inclusion of sharing activities in rewarding processes, the data to be shared must be visible on the scholarly digital information system. This implies that they must abide by the FAIR principles: specifically, they must be present on the web, traceable, reusable and the assessment of their use should be possible.

Pre-required actions:

- Datasets must be archived in open digital repositories that warrant long term preservation. Recommended data repositories are listed by FAIRsharing <fairsharing.org>
- Physical resources used in research (such as physical samples) must be embedded in an organised storage and identification infrastructure (such as a biobank for human samples)
- Datasets and resources should be archived under open licences (such as *Creative Commons* <www.creativecommons.org>)[1]
- Datasets -or material resource description- must be identified uniquely, persistently and connected to the scholarly digital sphere: attribution of a permanent identifier (PID) such as Digital Object Identifier, DOI from Datacite <www.datacite.org>)
- Re-use of data and physical resources should be done following given instructions if they exist, or by using standards (such as the CoBRA guideline for citing bioresources in journal articles <www.equator-network.org/reporting-guidelines/cobra>)
- We recommend that researchers get ORCID so that DOIs of cited resources are attached to their ORCID profile.
- If available, contributions such as data/samples sharing should be specified in publications through the CRedit-CASRAI initiative < <http://docs.casrai.org/CRedit>>

2.3. Preliminary steps required for rewarding

Recommendation 5.

To publishers/editors.

Supporting the pre-required actions (reported above):

By the mean of editorial policies addressed to authors and reviewers, editors can efficiently encourage or mandate the pre-required actions needed for rewarding processes.

Actions:

- Include in instructions to authors information that will help to choose a proper repository for archiving data, a unique and persistent identifier for datasets and data citation standards.

[Follow the RDA Data Policy standardisation and implementation IG.](#)

Recommendation 6.

To publishers/editors.

Better visibility of data. Although data journals have appeared in the last decade, their number is still limited. This is even more true for journals publishing descriptions of physical resources such as collections of samples.

Action: Create additional meta-journals to publish detailed descriptions of every kind of datasets and resources that will constitute a research data record.

2.3. Preliminary steps required for rewarding

Recommendation 7.

To funders and research institutions administrators

Fair measuring of impact.

Article–level metrics are not adapted to measuring the re-use of data and physical resources. Data-level metrics reflecting real usage are being developed and should be used preferentially.

Actions:

- Citation based metrics can be used for data published in data journals and alternative usage based-metrics (such as Altmetrics) can be used to measure attention and uptake of a dataset, while waiting for output from RDA the Fairmetrics and Make Data Count initiatives -*RDA Data Usage Metrics WG*.

Comment:

We support the creation of a referential for a FAIR certification that will check datasets compliance to FAIR criteria for sharing (similar to ‘label accessiweb’). FAIR criteria can be described so far with booleans, while FAIR metrics are being developed.

2.4. Rewarding mechanisms for sharing activities

2.4.1. Evaluation related-criteria

Recommendation 8.

To funders and institution administrators.

There is an urgent need to acknowledge and reward the FAIR management and sharing of data and materials as a **first-class research output**. One powerful driver is to take sharing activities into account in the **evaluation** scheme.

Actions:

- Include FAIR Sharing activity as a set of evaluation criteria, making it a strong requirement in all proposals.
- To assess researchers' proposals or career, use a set of criteria drawn from the Open Science Career Evaluation Matrix (OS-CAM) designed by the EU WG on OS rewards: more criteria for sharing samples? Which ones?
- Avoid the exclusive use of quantitative assessment mechanisms such as impact factors in assessment processes.
- For quantitative assessment, use data-level metrics, and FAIR metrics whenever they are available.
- Use ORCID profiles in evaluation (they encompass many research activities, including samples/data sharing)
- Use CrediT-CASRAI badges in the researcher's activity assessment
- add sharing criteria to key performance indicators in institutional evaluations.
- Dedicate significant and coordinated effort to the training of evaluators, selection committees and researchers themselves, so that they would take sharing practices and FAIR principles implementation into account in evaluations.

Action for the SHARC group : develop a set of criteria to assess FAIR Sharing activity possibly through an RDA working group? Other suggestion?

2.4.2. Allocating dedicated funding

Recommendation 9.

To funders and institution administrators.

As the implementation of the FAIR principles may induce extra-costs for the sharer, a way to encourage it concretely is to allocate specific funding to sharing initiatives.

Actions:

- Dedicate specific additional funding to the FAIR sharing activities that cannot be diverted towards any other expenses.
- Promulgate consequences for not complying such as being temporarily ineligible for further funding.

2.4.3. Allocating support to facilitate implementation issues

Recommendation 10.

To institution administrators.

As the implementation of FAIR sharing may be in some communities very time-consuming and may require skills that researchers do not have, backing this activity by providing human and structural support is essential.

Actions:

- Provide sustainable human, financial and infrastructural support to be made available within research institutions.
- Undertake more large-scale collaborative efforts to make storage infrastructures and dedicated trained personnel available to all researchers regardless of their affiliation
- Organise help from trained personnel to design and implement data/sample sharing in their research endeavors.

Discussion on generic recommendations

A glimpse into community specific aspects towards recommendations

1. Biodiversity community
2. Geospatial data

WRAP-UP and PERSPECTIVES

- Contribution on the google doc (background paper) or by e-mail to Laurence Mabile
 - Other case studies, known initiatives/bibliography...
 - Comments on recommendations (generic and specific – specify the community)
 - General comments welcome
- Joining the interest group; specify domains/goal of main interest
- Coming to ESOF 2018 (Toulouse 9-14 July 2018 www.esof.eu : several sessions of interest related to the group and one issued from the group [How to give credit to scientists for their involvement in collecting, curating and publishing data?] (<https://www.esof.eu/en/programme.html>)
- Possible SHARC group meeting during ESOF