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Check the paper:

Sustainability of FAIR Life Science Resources and Projects: How "BeSURE" Recommendations from EOSC-Life RIs help for FAIR principles

Sustainability in Life Sciences

Life Science (LS) communities must increase the sustainability of their data resources, software tools, and workflows so that the wider scientific community can use and re-use the available resources over the long-term, especially in future applications involving machine-based analyses.

In this poster, we describe key findings from the EOSC-Life project in developing and establishing sustainable resources, tools, and cloud-based LS solutions. EOSC-Life brought *13 European LS Research Infrastructures together* and laid the foundation for an **open, digital, and collaborative space for life sciences research**. We describe **organisational, technical, financial, and legal/ethical challenges** that represent the main barriers to sustainability in the LS domain.

BeSURE recommendations

We have called these the **BeSURE recommendations** (BE SUstainable REcommendations). These recommendations cite *sustainable training methodologies* and ensure *high-quality metadata* that support the sustainable reusability of scientific objects.

Roles and responsibilities must be shared to ensure sovereignty, sustainable services, and tools. Our results clearly show how **data harmonisation facilitates the interoperability of tools, data, and solutions and clarifies our understanding of concepts, functionalities, and semantics** in the life sciences.

BeSURE and FAIR principles crosswalk

Although many of these sustainability recommendations may seem obvious, it may be challenging to practically understand and actually implement them, especially if researchers poorly understand their importance and overall impact on the short- and long-term perspectives when beginning collective community work.

The **recommendations** provided can, however, be **explicitly and bidirectionally linked to the FAIR principles** and concrete processes related to data and tools handling, sharing and reproducibility.
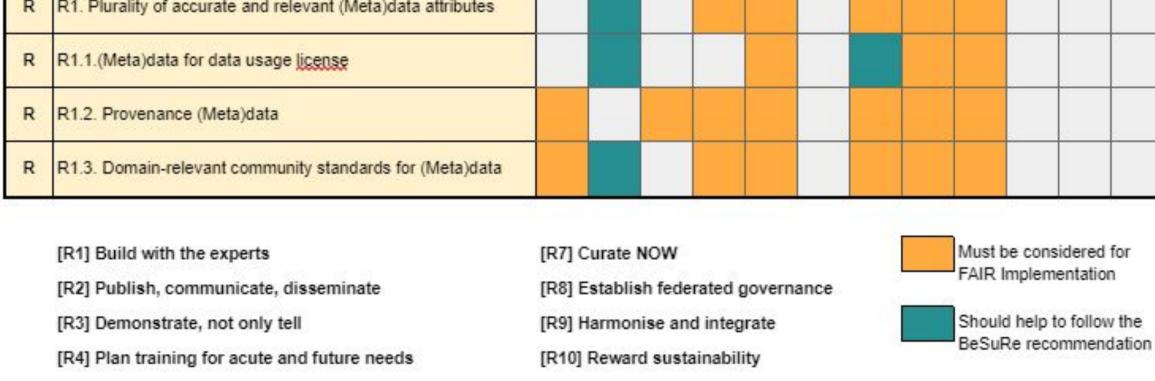
By adopting such FAIRification actions, our paper on "BESURE" recommendations explains how to classify key research objectives that *support FAIR implementation* (i.e. which, in turn, improves the sustainability of research outputs) or *are mandatory to ensuring the quality, efficiency, and sustainability of FAIR compliance*.

Table-2. FAIR x Be SURE "Be SUstainable REcommendations"		[R1]	[R2]	[R3]	[R4]	[R5]	[R6]	[R7]	[R8]	[R9]	[R10]	[R11]	[R12]
F	F1. Globally unique and persistent identifier												
F	F2. Rich metadata												
F	F3. Metadata include data identifier												
F	F4. (Meta)data indexed												
A	A1. Standardised communications protocol												
A	A1.1 Protocol open, free, and universally implementable												
A	A1.2 Authentication and authorisation procedure												
A	A2. Metadata accessible, data no longer available												
I	I1. (Meta)data language for knowledge representation												
I	I2. FAIR (Meta)data vocabularies												
I	I3. Qualified references to other (meta)data												
R	R1. Plurality of accurate and relevant (Meta)data attributes												
R	R1.1.(Meta)data for data usage license												
R	R1.2. Provenance (Meta)data												
R	R1.3. Domain-relevant community standards for (Meta)data												

[R1] Build with the experts
[R2] Publish, communicate, disseminate
[R3] Demonstrate, not only tell
[R4] Plan training for acute and future needs
[R5] Metadata makes FAIR
[R6] Be prepared, agile and act timely
[R7] Curate NOW
[R8] Establish federated governance
[R9] Harmonise and integrate
[R10] Reward sustainability
[R11] Be open AND be inclusive
[R12] Treat innovation and sustainability independently

- Must be considered for FAIR Implementation
- Should help to follow the BeSuRe recommendation

Be Aware of BeSURE!

This paper draws a clear correlation between our "BeSURE" recommendations and how efficiently FAIR principles are implemented. Our succinct take-home message is: **Create a FAIRification timeline for data sharing implementation as early as possible** when planning new life science projects.

To learn more on how, read the paper!

Read the paper!

David, R., Rybina, A., Burel, J.-M., Heriche, J.-K., Audergon, P., Boiten, J.-W., Coppens, F., Crockett, S., Exter Katrina, Fahrener, S., Fratelli, M., Goble, C., Gormanns, P., Grantner, T., Gruning, B., Gurwitz, K. T., Hancock, J., Harmse, H., Holub, P., … Gribbon, P. (2023). In press: "Be Sustainable", Recommendations for FAIR Resources in Life Sciences research: EOSC-Life's Lessons. In *EMBO Journal* (XX).
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