

ASPAR_KR: a global and open source *Aspergillus fumigatus* azole resistance knowledge repository

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Background

Aspergillus fumigatus is a human pathogen that thrives in plant organic waste, especially on compost heaps. Its spread has been associated to high temperatures, while an increasing number of aspergillosis patients are concerning the medical community globally. As an emergent threat triggered by changes in environment and climate, it is imperative to gather data from diverse sources. However, research standardization and data sharing practices are lacking. Recent studies have showed that less than 50% of the data clearly stated to be available upon request could be effectively obtained from academic researchers. An alarming example is that of all authors in *Nature* and *Science* who indicated that their data is openly available, only 69.5% of them were able to provide the full dataset in less than two months¹.

Objective

Develop ASPAR_KR platform as a global knowledge repository to:

- **Connect** stakeholders;
- Advance a **global platform** that supports **standardization** of protocols and a better **data management** and aspergillosis prevention;
- Support the development of innovative **artificial intelligence applications** for disease adaptation in future scenarios of **severer climates**, while guiding policymakers.

Approach & achievements

Interviews, International Conference, MVP and pilot test groups

Our team conducted a **qualitative analysis** of the needs of the azole ecosystem to understand clearer the challenges stakeholders face. An **international conference** was organized by the ASPAR_KR team in Wageningen to facilitate discussions among azole stakeholders.

Through collaboration with System Biology Group, we built an **MVP** of ASPAR_KR repository. A **dissemination platform** was also developed at the beginning of the project to share partnerships and dates of events.

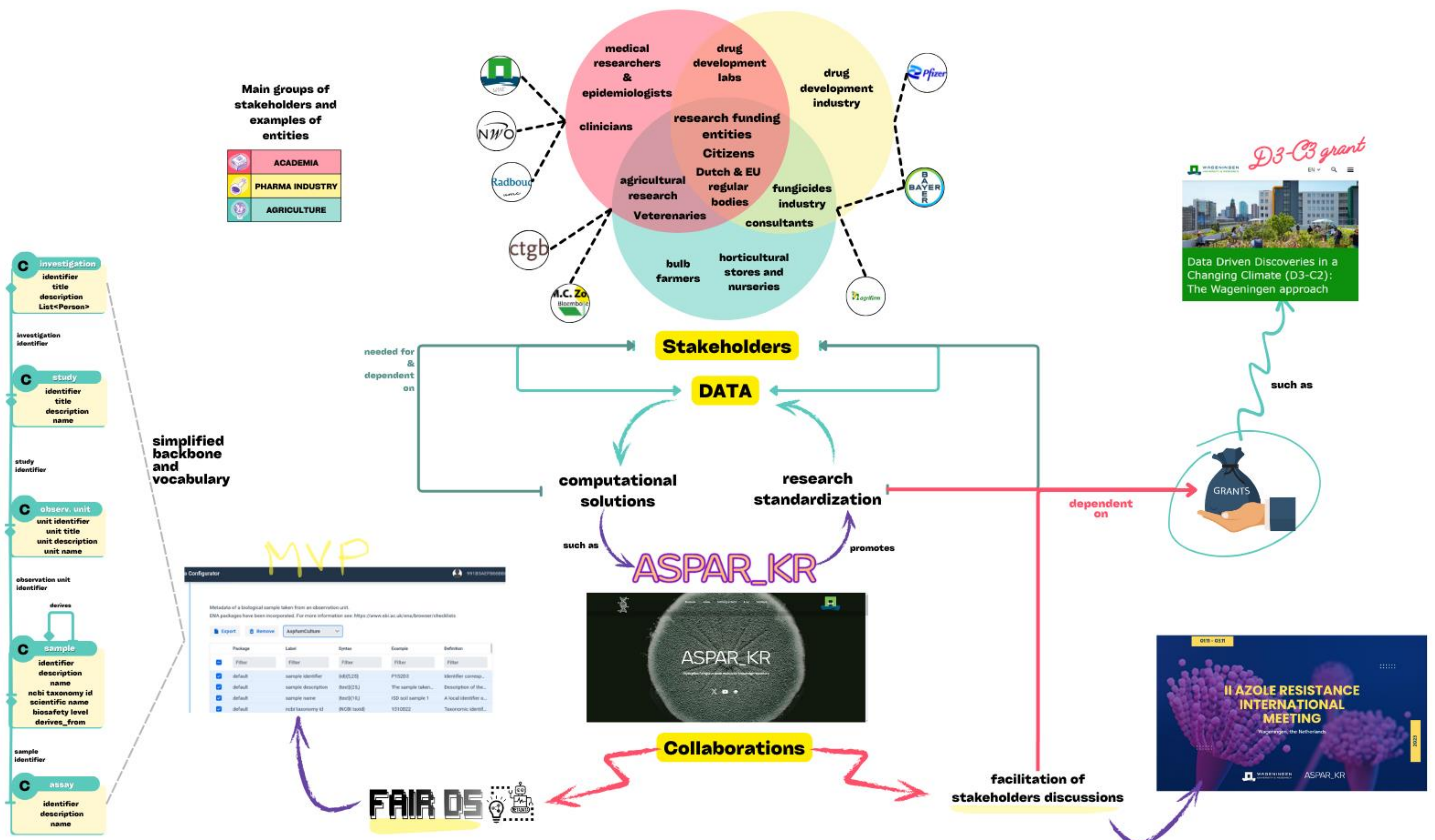


Figure 1. Project structure, achievements, and strategy breakdown.

Conclusions

- A **data standardisation tool** was applied in a new domain;
- Promoting FAIRification of data in life science domains and obtaining data in standardized formats brought more challenges than expected comparing to the building of the platform itself;
- Incentives, tools, and frameworks for data standards are lacking.

Future perspectives

- Our collaboration with the FAIRDS proved that this tool can be **applied to many other use cases** besides *A. fumigatus* (e.g. tracking of microbiome data between different milk samples).
- **Application to further funding** is being explored, as well as a NWO application for a Ph.D. position as a follow-up of this project.



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References

1. Tedersoo *et al*, 2021: 10.1038/s41597-021-00981-0
2. ASPAR_KR git repository: a repository with code and data gathered over the course of the project was created, including already publicly available content. For more please see https://git.wur.nl/asper_kr