



CEEEOV DAYS 2023

**THE ATTITUDES OF AGRICULTURAL
RESEARCHERS TOWARDS DATA
SHARING: CASE STUDY OF THE
REPUBLIC OF MOLDOVA**

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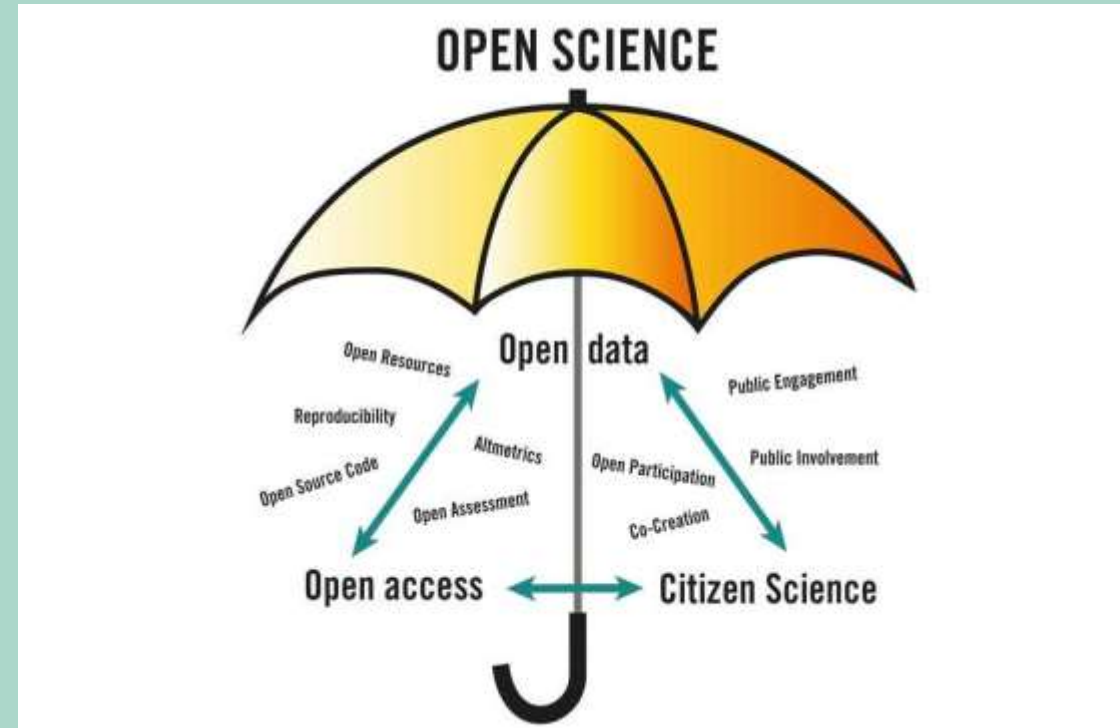


RESEARCH DATA SHARING IN AGRICULTURAL SCIENCES



DATA MANAGEMENT - AN ACTUAL AND MANDATORY TASK

- There is a growth in the amount of scientific data produced by scientific agricultural institutions.
- Institutions are moving toward more transparent research methods, paying close attention to the accessibility of data so that it can be reused and its integrity guaranteed.
- Access to data supported by publicly funded agricultural research is necessary;
- To assure their long-term storage, research sponsors and publishers require research institutes to deposit the scientific data in accredited and validated repositories.





Researchers' attitudes

- The first one was conducted in 2018 by the **Information Society Development Institute** and focused on general mapping of the scientific data ecosystem in the Republic of Moldova.
- The second study was performed in 2021 by the **Scientific Library of “Nicolae Testemitanu” State University of Medicine and Pharmacy** to study the perception of medical researchers regarding the openness and sharing of data.
- The third study was conducted by the **Scientific Library of the Technical University of Moldova** and focused on agricultural researchers' attitudes of towards data sharing.

CASE STUDIES

AIM AND OBJECTIVES OF STUDY

- AIM: to analyze the perceptions and attitudes of Moldovan researchers in agricultural sciences towards sharing research data, by using survey method.
- Specific objectives of the survey:
 - ❑ to study the attitudes of agricultural researchers on open research data,
 - ❑ to provide some recommendations regarding the application of research data sharing practices,
 - ❑ to identify the training needs of researchers in this topic.

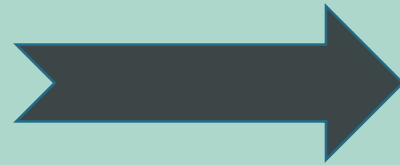
METHODOLOGY

- Survey comprised 22 questions / 5 parts;
 - (1) sociodemographic characteristics;
 - (2) importance and benefits of open research data;
 - (3) data produced / collected / used / stored
 - (4) willingness and barriers for data sharing;
 - (5) library support on research data management.

TARGET POPULATION AND SAMPLE SIZE

➤ Set parameters:

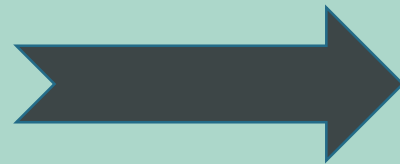
- Confidence interval - 90%
- Margin of errors - 5.0



158 respondents

➤ Fulfilled:

- N = 131,
- Confidence interval – 90%



5,7 – margin of errors

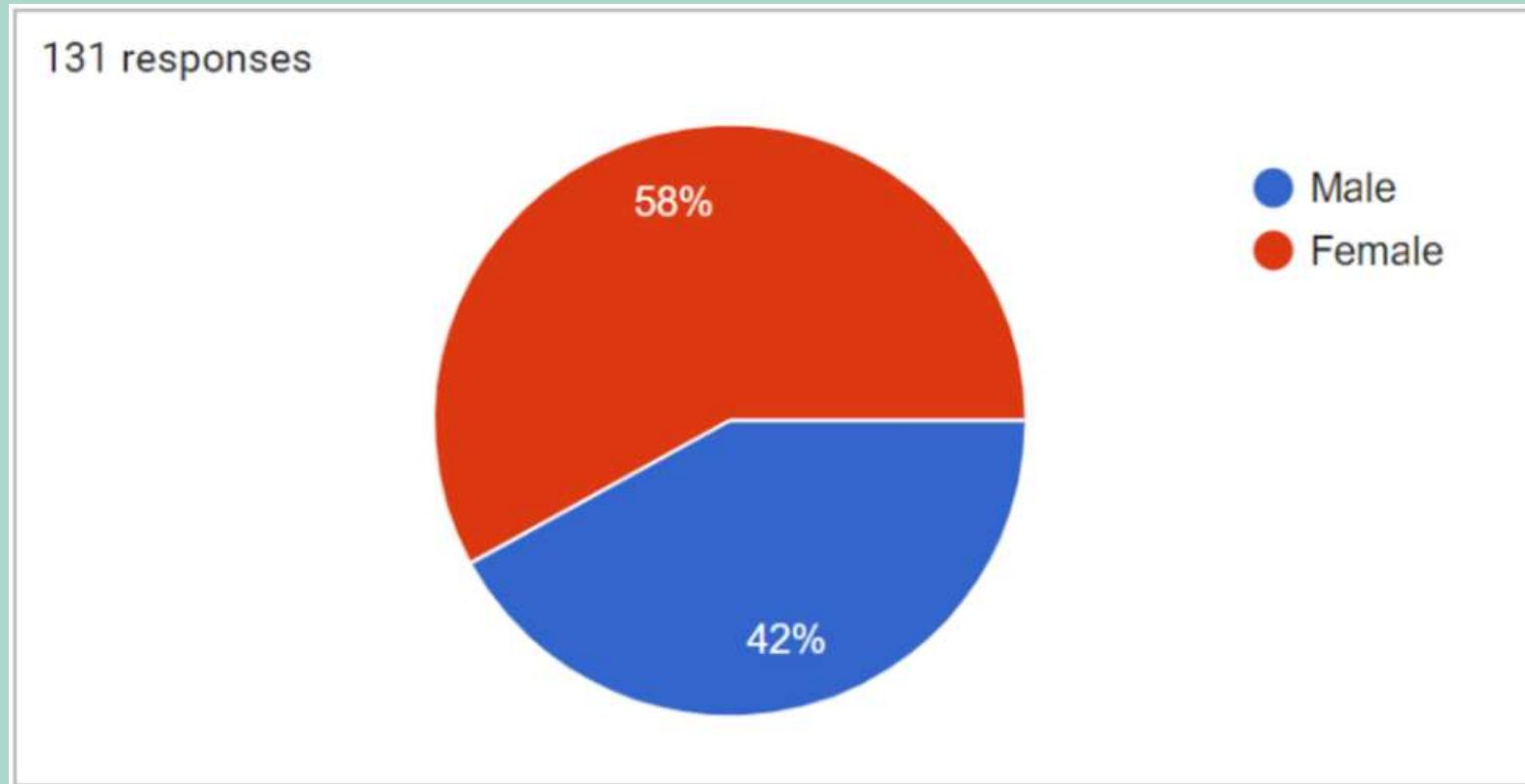
TARGET POPULATION AND SAMPLE SIZE

Tabelul 2. Cercetători pe domenii științifice, în anii 2021-2022

	Persoane				Structură, %			
	2021		2022		2021		2022	
	Total	inclusiv femei	Total	inclusiv femei	Total	inclusiv femei	Total	inclusiv femei
Cercetători - total	2 920	1 459	2 809	1 429	100	100	100	100
științe naturale	941	469	867	447	32,2	32,1	30,9	31,3
științe inginerești și tehnologice	336	69	365	89	11,5	4,7	13,0	6,2
științe medicale	396	240	402	247	13,6	16,5	14,3	17,3
științe agricole	464	226	375	189	15,9	15,5	13,3	13,2
științe sociale	535	323	559	335	18,3	22,1	19,9	23,5
științe umaniste	248	132	241	122	8,5	9,1	8,6	8,5

RESULTS AND DISCUSSIONS

SOCIODEMOGRAPHIC CHARACTERISTICS

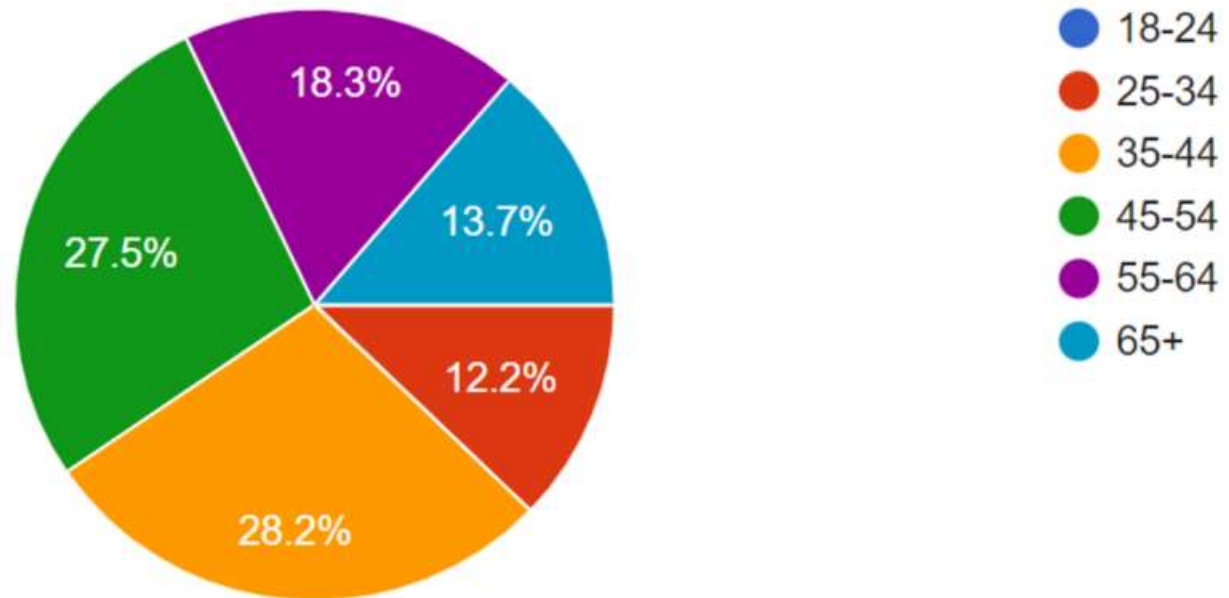


Gender dimension of the respondents

RESULTS AND DISCUSSIONS

SOCIODEMOGRAPHIC CHARACTERISTICS

131 responses



Distribution of respondents by age

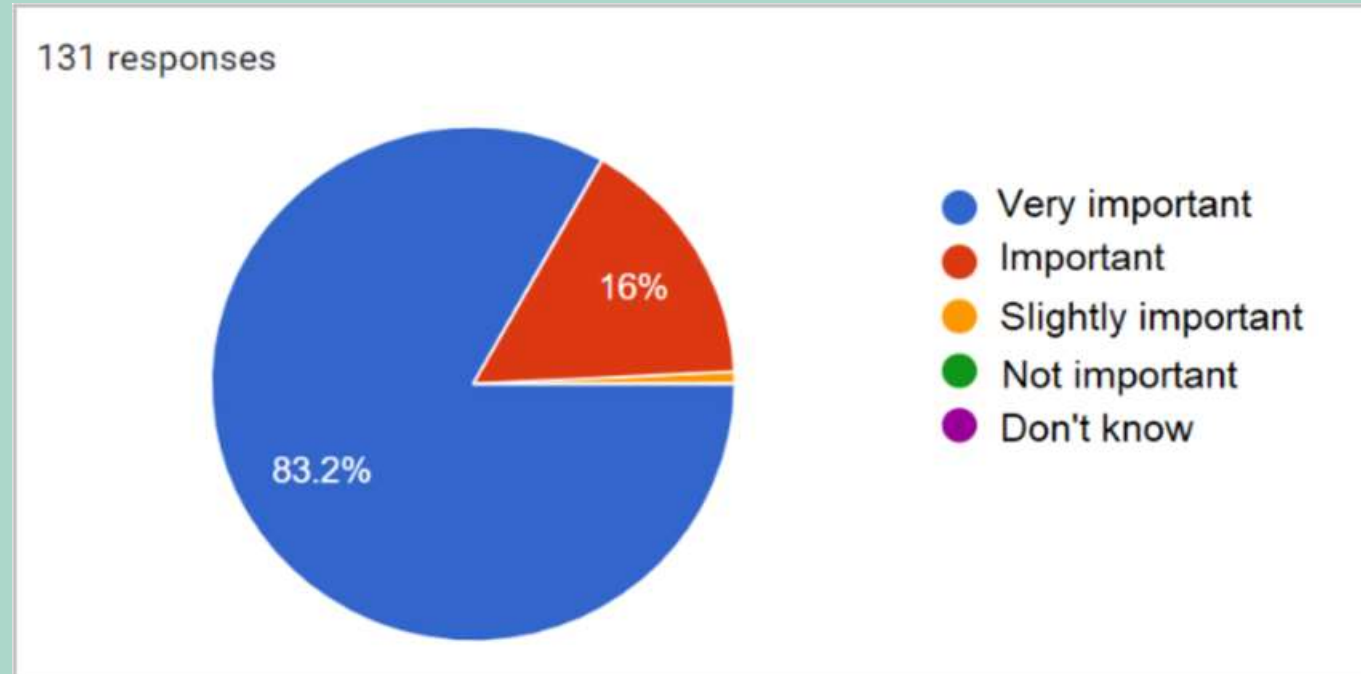
RESULTS AND DISCUSSIONS

SOCIODEMOGRAPHIC CHARACTERISTICS

Position	No of respondents	Share of total
Scientific and didactic staff	56	42.7%
Research staff	40	30.5%
Doctoral / postdoctoral student	18	13.7%
Management / administrative staff	11	8.4%
Veterinarian	2	1.6%
Other	4	3.1%

RESULTS AND DISCUSSIONS

THE IMPORTANCE AND BENEFITS OF OPEN RESEARCH DATA



Opinions of respondents on importance of research data for the development of agriculture

RESULTS AND DISCUSSIONS

THE IMPORTANCE AND BENEFITS OF OPEN RESEARCH DATA

What are the benefits of opening / sharing research data?	No of responses	Share of total
Increasing the visibility of research	97	74.0%
Transparency of the research process	90	68.7%
New opportunities for collaboration	90	68.7%
Accelerating the pace of science	75	57.3%
Avoiding duplication of effort	72	55.0%
Improving researcher's profile	70	53.4%
Increasing the number of citations	67	51.1%
Recognition for the data produced	56	42.7%
Facilitating research reproducibility	49	37.4%

RESULTS AND DISCUSSIONS

THE IMPORTANCE AND BENEFITS OF OPEN RESEARCH DATA

Why open research data are needed in agriculture? Open research data would allow to / help to:	No of responses	Share of total
Adapt to climate change in agriculture	111	84.7%
Enhance the management of plant pests and diseases	94	71.8%
Efficient use of fertilizers	82	62.6%
Plan the planting season	77	58.8%
Reduce the risk of frost or drought affecting crops	73	55.7%
Inform consumers about food contamination	66	50.4%
Optimize the irrigation system	65	49.6%
Avoid price crises	51	38.9%

RESULTS AND DISCUSSIONS

DATA PRODUCED / COLLECTED / USED / STORED

What types of research data do you produce or use?	No of responses	Share of total
Agronomical data	79	60.3%
Productivity data	75	57.3%
Pedology data	59	45.0%
Meteorological data	45	34.4%
Social-economic data	38	29.0%
Marketing data	29	22.1%
Animal husbandry data	27	20.6%
Land fund data	25	19.1%
Infrastructure data	17	13.0%
Forest fund data	15	11.5%
Hydrological data	13	9.9%

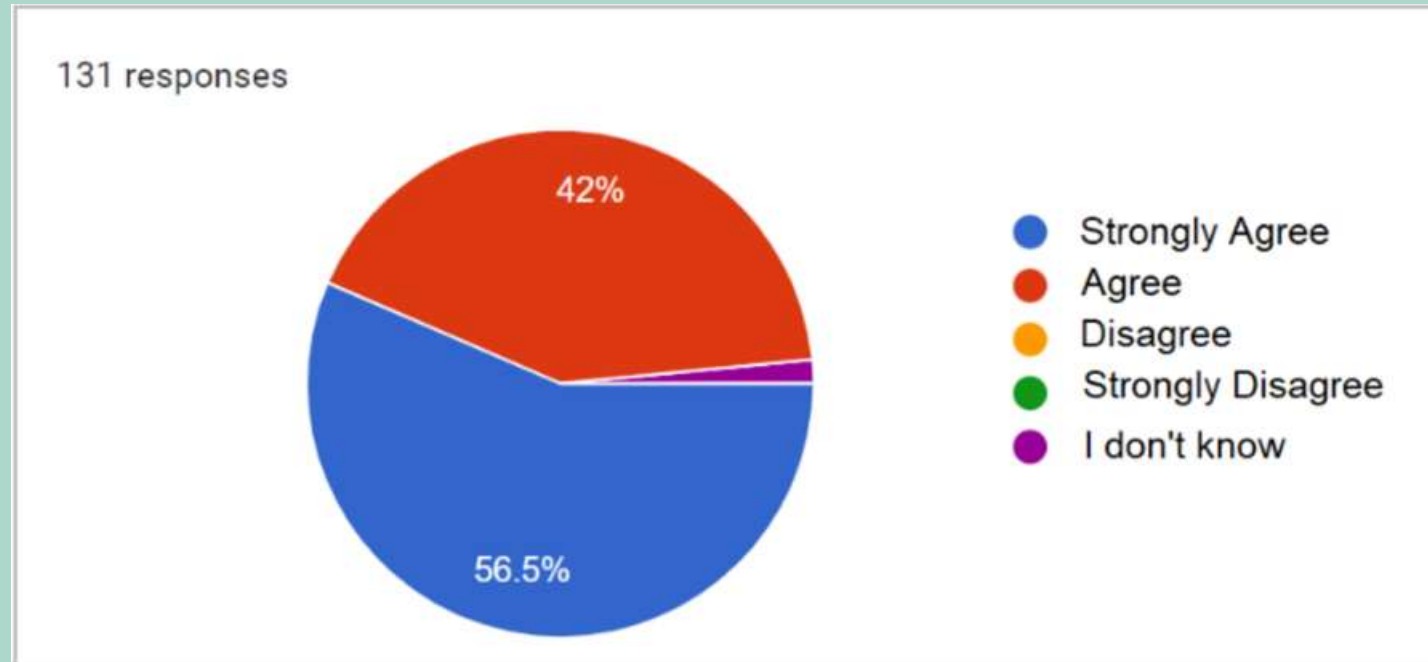
RESULTS AND DISCUSSIONS

DATA PRODUCED / COLLECTED / USED / STORED

What categories of data you produce and collect?	No of responses	Share of total
Statistical data	111	84.7%
Experimental observations	102	77.9%
Tables, charts	78	59.5%
Databases, simulation software, data files	55	42.0%
Field notes	46	35.1%
Lab notes	45	34.4%
Photos, videos, slides	44	33.6%
Instrumental measurements	42	32.1%
Research notebooks, registers	38	29.0%

RESULTS AND DISCUSSIONS

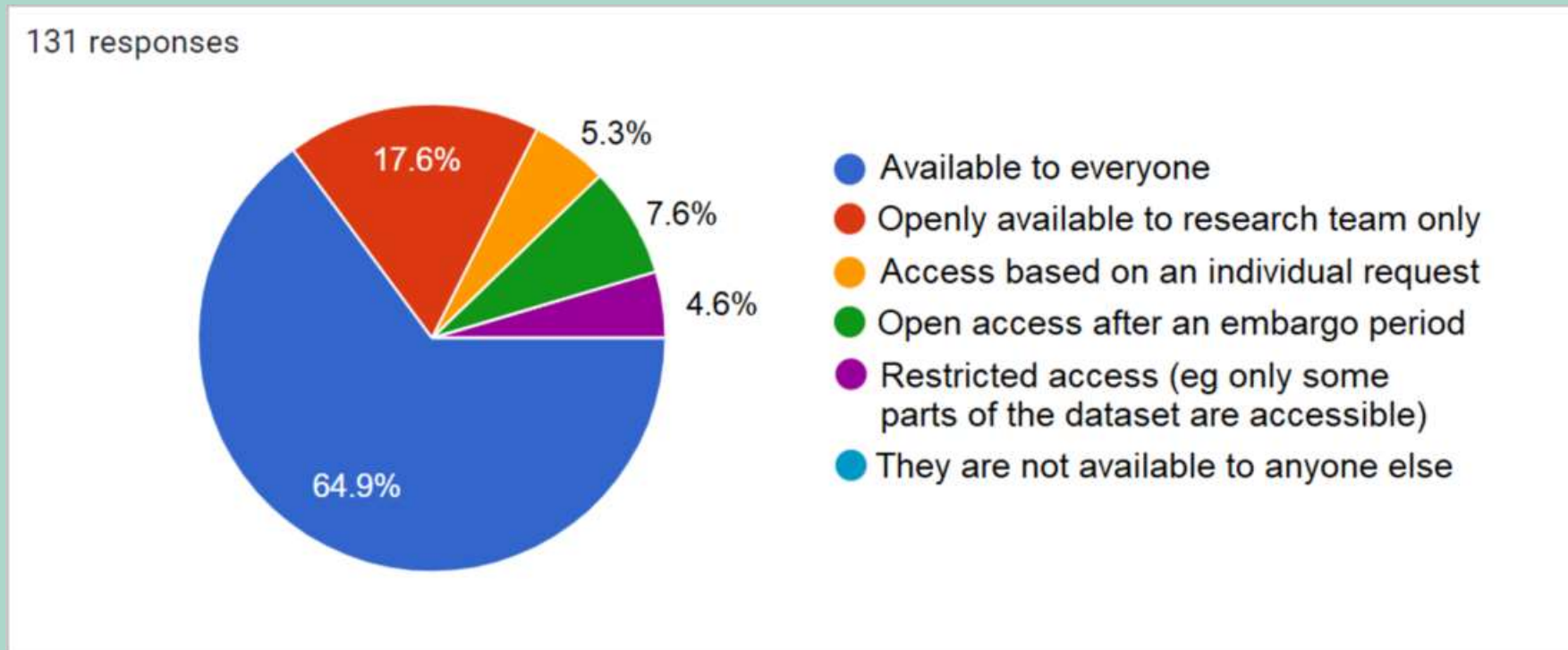
WILLINGNESS AND BARRIERS FOR DATA SHARING



The level of agreement to publish in open access research results funded by Government

RESULTS AND DISCUSSIONS

WILLINGNESS AND BARRIERS FOR DATA SHARING



The level of access researchers are ready to give to their research data

RESULTS AND DISCUSSIONS

WILLINGNESS AND BARRIERS FOR DATA SHARING

What motivates/obligenes you to publish your research data in open access?	No of responses	Share of total
Dissemination and promotion of own research	85	64.9%
Research stimulation	71	54.2%
Institutional policy	57	43.5%
Personal commitment to open data	43	32.8%
Funding body policy	33	25.2%
Editorial policy	24	18.3%

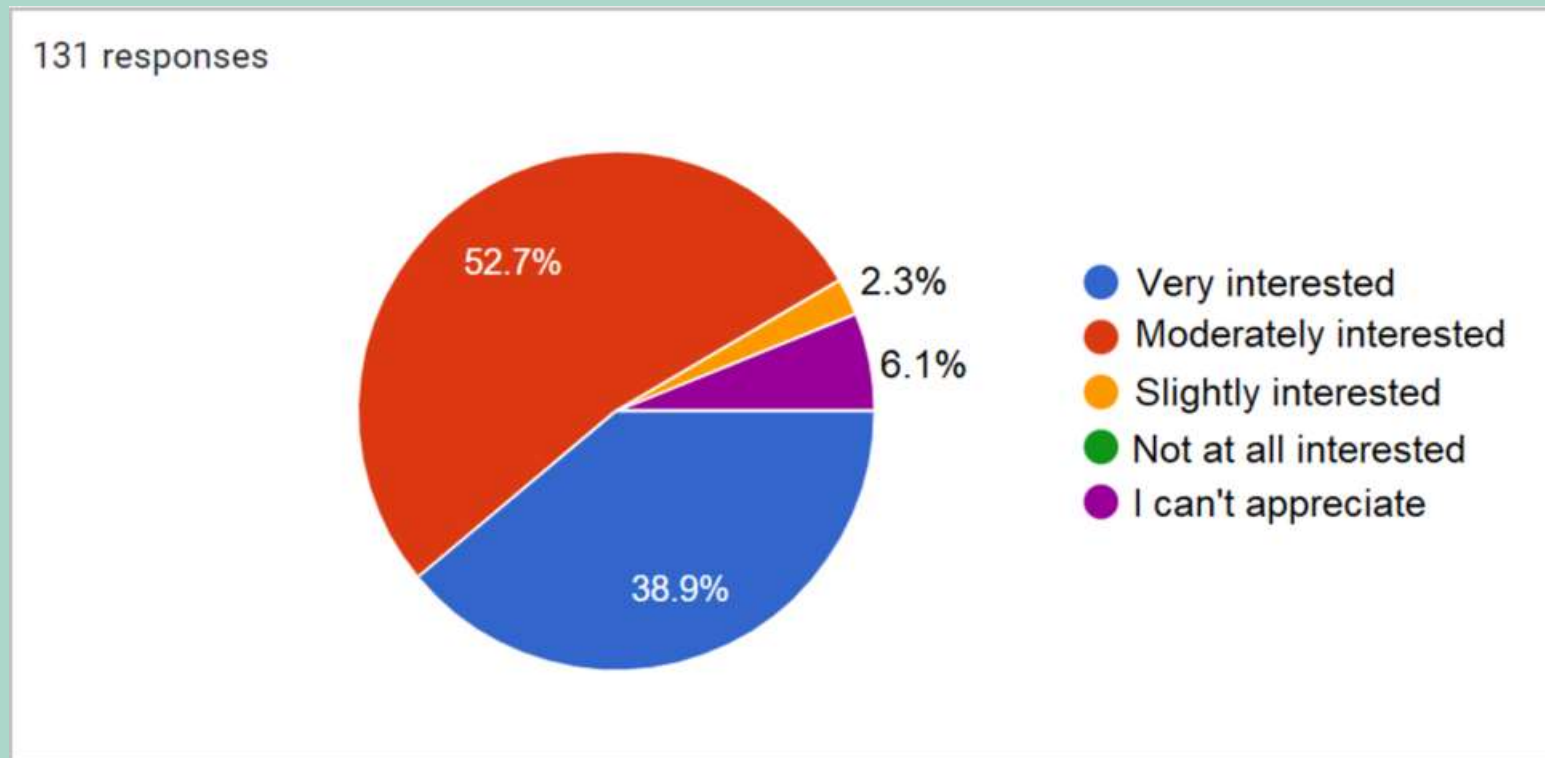
RESULTS AND DISCUSSIONS

WILLINGNESS AND BARRIERS FOR DATA SHARING

What would be the reasons for not sharing your research data?	No of responses	Share of total
Insufficient time to share data	42	32.1%
Data security and privacy concerns	35	26.7%
Concerns about losing control over intellectual property	34	26.0%
Concerns about the misinterpretation and misuse of data	29	22.1%
Motivational barriers (lack of incentives to share data, etc.)	25	19.1%
The data are not valuable to others	19	14.5%
Open data can lead to data corruption/falsification	19	14.5%
Lack of necessary technical skills and knowledge	18	13.7%
Data may not be in a presentable and understandable form	17	13.0%
No rights to make the data public	12	9.2%
Others may not be able to replicate the findings	11	8.4%

RESULTS AND DISCUSSIONS

WILLINGNESS AND BARRIERS FOR DATA SHARING



The level interest in library assistance with data management

CONCLUSIONS

- Researchers are aware of the importance and benefits of data sharing.
- They consider that shared research data can help to solve many problems, especially, adapting to climate change, enhancing the management of plant pests and diseases, more efficient use of fertilizers, reducing the risks of drought and frost, raising awareness of consumers about risks of food contamination
- Among the main benefits of open data, researchers emphasized the visibility and transparency of research, opportunities for collaboration, acceleration of science development, avoiding duplication of research.
- Among the main barriers to share data, researchers mentioned lack of time, data security and losing control over intellectual property concerns, possible misinterpretation and misuse of data.
- A lot of researchers have low level of knowledge on open data practices
- Because there are no mandatory requirements on research data sharing, research data are shared according to the wishes of researchers
- The implementation of Open Science and FAIR principles in the Republic of Moldova represents a complex and expensive process, which requires a lot of expertise, collaboration, interoperability rules, efficient coordination models, human resources with appropriate skills.

RECOMMENDATIONS

- Designing effective research data management approaches at the national level, elaboration and setting up an efficient mechanism for implementation of research data management in the Republic of Moldova;
- Developing a national policy on research data, based on which institutional, disciplinary data management and sharing policies would be created that would encourage agricultural researchers to share their data more widely;
- Continuous training and development of the competences and abilities of the data support staff regarding all aspects of research data management, followed by the training of researchers for the effective management of research data;
- Change the culture, inspire trust and create a climate that encourages research data sharing among researchers.



ACKNOWLEDGMENTS



- The study was conducted under the RDA/EOSC Future Grant no: RDA COM PRA-344 “Enhancing awareness about open data in food and agriculture in the Republic of Moldova”, specifically the EOSC Future project, which has received funding from the EC Horizon 2020 research and innovation programme grant agreement No 101017536

THANK YOU!

