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REACT

Rapid elimination of invasive insect agricultural pest outbreaks by tackling them with Sterile Insect Technique programs

Project Deliverable Report
Deliverable D7.3: Data management plan (DMP)

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Document Information

Project Number	101059523	Project Acronym	REACT
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EU Project Officer	Antonio PEREZ-RENDON		
Project Coordinator	Justus-Liebig-University Gießen - JLU		

Deliverable	D7.3 – Data Management Plan (DMP)			
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0.10	24/02/2023	Michael Anranter	Deliverable structure set-up (request for data summary input shared with consortium partners); First draft
0.20	28/02/2023	Evelyn Vollmeister	Comments and minor additions; separation DMP / Ethics (own deliverable)
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0.60	20/04/2023	Michael Anranter	Revision by OKP; Updates according to freshly arrived Data Summaries
1.00	28/04/2023	Evelyn Vollmeister	Final version for submission to EC

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1 Abstract

The REACT Data Management plan is to identify the project's research data and establish the approach to be taken for the storing, securing, sharing, and managing of data. Starting from the different types of data generated within the REACT project, this deliverable is to discuss all applicable ethical and data protection issues aligned with REACT activities.

Also, there is a dedicated section to discuss the application of F.A.I.R. (findable, accessible, interoperable, and reusable) data management. All partners were asked to provide detailed information about the data they are generating during the REACT project.

Delivered in M6, D7.3 will heavily impact on all interactions that inform all research and data analysis. The Data Management Plan is to be updated in month 18 and 36.

2 Introduction

Data management is important to ensure that all types of data are handled secure. It includes the collection, storage, transfer, utilisation and maintenance. A Data Management Plan (DMP) is intended to outline the approach to be adopted within REACT for storage, security, sharing, and management of data generated under the various actions undertaken by the project work plan. Most importantly, research data in REACT will be administered in accordance with the F.A.I.R. data management guidelines. The F.A.I.R principles stipulate for data to be findable, accessible, interoperable, and reusable. Furthermore, the DMP includes a section on research ethics and integrity.

A central component of the DMP architecture is the release of scientific and technological publications published within REACT. In the process, data for scientific publications are to be used, and in a further step also made available to third parties. In addition, once the data have been released by their authors, short and independent descriptions of the shared data sets should ensure their interoperability. To avoid issues related to intellectual property rights and access, the REACT Exploitation Panel (ExP) must approve the release of data before publication. Further specifications are outlined in D.7.2 DECP (month 6). In the REACT Description of Action (DoA), a DMP is required at month 6 of the project implementation. Within D.7.3 Data Management Plan we report an initial analysis of how the REACT consortium intends to manage all the different types of data produced.

In the context of REACT, the DMP is intended to be a living document where information can be made available with the greatest accuracy and detail through updates as project implementation progresses and significant changes occur. Further updates on data management will be provided in month 18 and month 36 of the project.

3 Data Summary

The Data Summary aims to give an overview of the data collected in REACT. All REACT beneficiaries were invited to indicate which data they plan to collect for which purposes and objectives. In addition, all data formats used, including the expected scope, as well as potential data utilities outside the project were collected. The tables below summarize all characteristics of data to be generated in REACT.

3.1 Data Summary JLU

WPs concerned: 4,7,8,9

Date: 23.02.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or re-used**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Text documents	WP8 Project management, WP9 Ethics	Own writings (e.g., reports, meeting programmes etc.)	.docx, .pdf, .rf, .txt	5 GB	communication to EC
2	Spreadsheets	WP8 Project management, WP4	Own tables or exports from software or EU portal	.xls, .csv	100 MB	Communication to EC, scientific community
3	Graphics, images	WP8, WP7 WP4	Own data for depicting results and outcomes or exports from software (EmDesk), images from microscopes	.jpeg, .tiff, .png, .gif, .svg, .lif	10 GB	Communication to EC, scientific community, public, various stakeholder
4	Sequence data	WP4		Geneious, .fasta, .fastq, .gb,.bam	200 MB	Scientific community
5	Sensitive data (names, email addresses, bank account data, etc)	T8.1 Contract and finance management, T8.2 internal communicatio n, T8.4 organization of consortium and meetings	Participants, Stakeholder advisory board members and other stakeholder to whom reimbursements occur from JLU	.xlsx, .csv	5 MB	none
6	Laboratory data, observational data, experiments	WP4		.pdf, .xlsx, .docx, .txt, .jpg, .tiff, .eps, .ai	5 GB	Scientific community
7	Presentation slides, poster etc	WP8, WP4	Generation of own data for scientific and public dissemination	.pptx, .pdf	1 GB	Scientific community, public, various stakeholder

3.2 Data Summary Agriculture

WPs concerned: 1,4,7,8
Date: 25.04.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or reused**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**

1	Laboratory data, observational data, experiments	WP1, WP4	Own data to be collected from laboratory observations and field experiments	.pdf, .xlsx, .docx, .txt, .jpg,	1 GB	Scientific Community and planters
2	Presentation slides, poster etc	WP7, WP8	Generation of own data for scientific publication	.pdf, .xlsx, .docx, .txt,	1 GB	Scientific Community

3.3 Data Summary ARO

WPs concerned: 1,2,3,8

Date: 14.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or re-used**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Laboratory data, observational data, experiments	WP1	Self-generated / field work	.pdf, .xlsx, .docx, .txt, .jpg, .tiff	10 GB	Scientific community
2	Laboratory data, observational data, experiments	WP2	Self-generated	.pdf, .xlsx, .docx, .txt, .jpg, .tiff	10 GB	Scientific community
3	Sequence data	WP2	Self-generated	.fasta, .fastq,	200 MB	Scientific community
4	Sequence data **re-use**	WP3	Currently unknown	Geneious, fasta, .fastq, .gb,.bam	5 GB	
5	Species-specific sequences	WP3	Genomic sequence data	Geneious, fasta, .fastq, .gb,.bam	100 MB	Scientific community
6	Presentation slides, poster etc	WP8	Self-generated	.pptx, .pdf	1 GB	All stakeholders

3.4 Data Summary CNR

WPs concerned: 3,8

Date: 10.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or reused**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Spreadsheets	WP3, WP8 Project management	Tables listing the identified metabolites, Technical Manager files	.xls, .csv	100 MB	Scientific community

2	Graphics, images	WP3	Own data and microscope images for depicting results and outcomes	.jpeg, .tiff, .png, .gif, .svg,	10 GB	Scientific community, public, various stakeholder
3	Laboratory data, observational data, experimental procedures	WP3	Own data	.pdf, .xlsx, .docx, .txt, .jpg, .tiff, .eps, .ai, .lif, .czi, .d	10 GB	Scientific community
4	Presentation slides, posters	WP3	Generation of own data for scientific and public dissemination	.pptx, .pdf	1 GB	Scientific community, public, various stakeholder
5	Text documents	WP3, WP8 Project management	Own writings (e.g., protocols, reports, Technical Manager files)	.docx, .pdf, .rtf, .txt	5 GB	communication to EC

3.5 Data Summary CRI

WPs concerned: 6

Date: 13.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or reused**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Spreadsheets	WP6	Online questionnaire survey, interviews, workshops, own data	.xlsx	1 GB	Stakeholders, Scientific community
2	Text documents	WP6	Own writings (e.g questionnaires, protocols, reports, scientific publications)	.docx, .pdf	1 GB	Stakeholders, Scientific community
3	Presentations	WP6	Own data	.pptx., .pdf	500 MB	Stakeholders, Scientific community

3.6 Data Summary inSilico-IPM

WPs concerned: 1,2,5,6,7,8

Date: 14.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Spreadsheets	To support execution of the planned tasks in WPs 1,2,5,6,7,8	Tables listing the identified metabolites, Technical Manager files	.xls	100 MB	Scientific community
2	Graphics, images		Own data and filed pictorial documentation	.jpeg, .tiff, .png, .gif, .svg,	5 GB	Scientific community, public, various stakeholder
3	Scenarios and projections		Generated by the PESTonFARM sub-models	.xls, .pdf	10 GB	
4	Text documents		Own writings (e.g., protocols, reports, etc.	.docx, .pdf, .rtf, .txt	2 GB	communication to EC

3.7 Data Summary RMCA

WPs concerned: 1, 2
Date: 14.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Sequencing data	WP1	Own generated and reused data, other WP members	.fastq, .fasta, .bam, .vcf,	5 TB	Scientific community
2	Computer scripts	WP1	Own generated and reused code or published by scientific community	.sh, .pbs, .R,	-	Scientific community
3	Graphs, Images	WP1	Own data, communication between WP members	.jpg, .svg, .png	500 MB	Communication to EC, scientific community, public, various stakeholders
4	Laboratory data	WP1	Own generated data	.xlsx, .txt	1 MB	Scientific community
5	Presentation slides, posters etc	WP1	Generation of own data for scientific and public dissemination	.pptx, .pdf	500 MB	Scientific community, various stakeholders

3.8 Data Summary UPAT

WPs concerned: 1, 2
Date: 14.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Sequence data	WP1 & WP2		Fasta, fastq, fast5, bam, sam, gb, fnn, faa, gbk	2 TB	Scientific community
2	Graphics, images	WP1 & WP2		jpeg, .tiff, .png, .gif, .svg	5 GB	Communication to EC, scientific community, public, various stakeholder
3	Presentation slides	WP1 & WP2	Generation of own data for scientific and public dissemination	.pptx .pdf	1 GB	Scientific community, stakeholders
4	Laboratory data	WP1 & WP2		.docx, .xlsx, .pdf, .txt, .sh, .pl,	2 GB	Scientific community,

3.9 Data Summary UTH

WPs concerned: 4, 5
Date: 17.04.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Sequencing data	WP4	Assemblies, RNAseq data from laboratory colonies of Tephritid species	Geneious, .fasta, .fastq, .bam	2 TB	Scientific community
2	Laboratory data, observational data, experiments	WP4 & WP5		.pdf, .xlsx, .docx, .txt, .jpg, .tiff, .eps, .ai	10 GB	Scientific community
3	Presentation slides	WP4 & WP5	Generation of own data for scientific and public dissemination	.pptx .pdf	1 GB	Scientific community, stakeholders
4	Graphics, images	WP4 & WP5	Own data for depicting results and outcomes	jpeg, .tiff, .png, .gif	5 GB	Communication to EC, scientific community, public

3.10 Data Summary HUJI

WPs concerned: 4
Date: 16.04.23

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Omics sequencing data	WP4	Assemblies, raw WGS and RNAseq data from laboratory colonies of Tephritid species	.fasta, .fastq,	10 TB	Scientific Community
2	Laboratory data, observational data, experiments, presentations, posters	WP4		.pdf, .xlsx, .docx, .txt, .jpg, .tiff, .eps, .ai	10 GB	Scientific Community

3.11 Data Summary OKP

WPs concerned: 7
Date: 21.02.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Video films	T7.2 Project Communication and Dissemination.	Own filming from GA meetings, pilot actions and selected sites and laboratories (e.g., Seibersdorf). Informed consent if necessary.	.mp4	1 TB	Could be useful communication material for cognate projects.
2	Short films, Photographs	T7.2l Project Communication and Dissemination.	Own photographs from GA meetings, pilot actions and selected sites and laboratories (e.g., Seibersdorf). Informed consent if necessary.	.mp4, .jpeg	10 GB	Could be useful communication material for cognate projects.
3	Names, E-mails and telephone numbers	T7.1d, T7.2u PR contacts and facilitation of press trip	Desktop research	.xls, .csv	1 MB	Could be useful communication material for cognate projects.
4	Names, E-mails and IP-addresses	T7.1c, Task 7.2k Newsletter subscription & website traffic monitoring	Voluntary participation. Data collection via standardized and automised data form. Data are not shared with third parties.	.xls, .csv	1 MB	none

5	Names, E-mails and IP-addresses	T7.2m personal data and information	Voluntary participation. Data collection via standardized and automised data form. Data are not shared with third parties.	.xls, .jpeg	15 GB	Research purpose. Citizen science and other cognate projects.

3.12 Data summary CIRAD

WPs concerned: 1, 2
Date: 20.03.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or reused**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Computer scripts	WP1, 2	Own generated and reused code or published by scientific community	.R	-	Scientific community
2	Graphs, Images	WP1, 2	Own data, communication between WP members	.jpg, .svg, .png	500 MB	Communication to EC, scientific community, public, various stakeholders
3	Laboratory data	WP1, 2	Own generated data	.xlsx, .docx	5 MB	Scientific community
4	Presentation slides, scientific publications, posters etc…	WP1, 2	Generation of own data for scientific and public dissemination	.pptx, .pdf	500 MB	Scientific community, various stakeholders

3.13 Data Summary HAO

WPs concerned: 5
Date: 19.04.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or reused**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Laboratory data, observational data, experiments, rearing protocols and guidelines, QC protocols and guidelines	WP5		.pdf, .xlsx, .docx, .txt,	2 GB	Scientific community, insect rearing facilities
2	Presentation slides	WP5	Generation of own data for scientific and public dissemination	.pptx .pdf	2 GB	Scientific community, stakeholders

3	Graphics, images	WP5	Own data for depicting results and outcomes	jpeg, .tiff, .png, .gif	2 GB	Communication to scientific community, public, various stakeholder

3.14 Data Summary Iscte

WPs concerned: 2,6
Date: 26.04.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	**Describe the purpose of the data generation or re-use and its relation to project objectives.**	**Explicit the origin/provenance of the data either generated or reused**	**Describe the type of data and data formats that you will generate or re-use.**	**Estimate the size of the data that you intend to gather or re-use.**	**Outline to whom outside the project your data might be useful (data utility)**
1	Text documents	Data use for the revision of literature in WP2 and WP6	Academic and grey literature from scientific databases and from pest management field programmes	.pdf .doc	2 GB	Scientific community
2	Spreadsheets	Economic analysis model in WP6	Own spreadsheets	.xlsx	100 MB	Scientific community
3	Experimental data	Data used for the economic analysis in WP6	Pilot tests conducted in WP5	.doc and .xlsx	100 MB	Scientific community and project key stakeholders
4	Interview data Name, email address and organization of participants in surveys and interview. Data on stakeholders' perception on fruit fly pests, fruit fly damage and fruit fly control actions	Data used to for the socio-economic analysis in WP6	Data collected from online interviews and exchanges with stakeholders	.xlsx .doc	100 MB	Scientific community and project key stakeholders
5	Presentation slides	WP2 and WP6	Self-generated for scientific and public dissemination	.pptx	1 GB	Scientific community, public, various stakeholder
6	Text documents	WP6	Own writing (reports, deliverables, scientific publications)	.doc	2 GB	Scientific community, public, various stakeholder

3.15 Data Summary ICL

WPs concerned: 4,8
Date: 19.04.2023

	Describe any data that you are planning to generate or re-use in the context of REACT.	Describe the purpose of the data generation or re-use and its relation to project objectives.	Explicit the origin/provenance of the data either generated or reused	Describe the type of data and data formats that you will generate or re-use.	Estimate the size of the data that you intend to gather or re-use.	Outline to whom outside the project your data might be useful (data utility)
1	Quantitative and qualitative experimental data (in the lab and during fly work)	WP4	Built upon data provided by collaborators, but primarily herein generated	.xlsx, .geneious, .pdf, .jpg, .tiff, .docx, .ab1, .csv, .R	-	Collaborators and the scientific community
2	Presentation data	WP4 and WP8	Based on point 1. and intended for a range of audiences	.docx, .pptx, .pdf	-	Collaborators, wider scientific community and the public
3	Publication data	WP4 and WP8	Based on point 1	.pdf, .R, .csv, .jpg, .xlsx	-	Wide scientific community and the public

3.16 Material Transfer

The transfer of (laboratory) material and associated data is essential for the success of the REACT project. Therefore, REACT has created a document for the exchange of material and related data, which can be used if the institute's own document will not be used (see chapter 11. Annex III). The document is entitled "**MATERIAL TRANSFER AGREEMENT** FOR THE IMPLEMENTATION OF PROJECT: Rapid elimination of invasive insect agricultural pest outbreaks by tackling them with Sterile Insect Technique programmes" (REACT MTA). It is based on good scientific practice and takes into account the relevant provisions of the General Data Protection Regulation (GDPR). The REACT MTA is attached as Annex III to this deliverable D7.3 (see chapter 11. Annex III).

4 F.A.I.R. Data

As some data arising from project activities are sensitive because of IPR considerations or limited to GDPR regulations[1], not all data might be available for sharing. However, while accepting these restrictions, as much data as possible from the project will be made available in accordance with the F.A.I.R. principles of data management.

4.1 Making Data Findable

While the format of each dataset is to be individually determined, the provision of standardized metadata – data describing other data – is key to ensuring that freely accessible data can be found. Metadata associated to datasets should enable future users to find datasets and decide whether they want to use them. It is also the reason why all metadata shall have meaningful titles and a precise and concise description. By using fully searchable metadata, the data can be found by potential users. This data is given a Digital Object Identifier (DOI) and stored on the preregistration repository Zenodo[2] or similar along with a full description. The use of a DOI

[1] General Data Protection Regulation 2016/679
[2] https://zenodo.org/communities/react-insect

guarantees unique identification of the single dataset and the possibility of automatic data web retrieval. Links to these data and metadata will also be made available via the project website[3] and REACT social media channels.

The metadata developed in REACT will be based on appropriate standards and consider other relevant regulations and guidance. Standard naming conventions and metadata for the project will be developed and documented by Month 12. If data cannot be fully shared due to data protection obligations, alternative supporting results will be made available based on appropriate standards[4,5] and consider other relevant regulations and guidance[6]. Standard naming conventions including keywords to be provided to optimize the possibility for discovery will be developed and documented for the project by month 18.

4.2 Making Data Accessible

As mentioned above, some of the data generated by this project will be kept closed for privacy and data protection reasons, but also for intellectual property reasons. All other research data will be openly available. Decisions for the publication of data and datasets marked as confidential in the Grant Agreement will be unlocked by the Exploitation Panel (ExP) as appropriate. Until released, data will be stored on local servers and data repositories that belong to beneficiaries. However, these local data storages must comply EU standards.

All research data will be attributed a DOI and made publicly available through public REACT deliverables, in the form of metadata descriptions shared on the project webpage[7] and the funding and tenders web portal, as well as on Zenodo. Selected data, such Computer Scripts to be developed or improved by RMCA will be attributed with a CC0 license or higher and made accessible through GitHub or other repositories (e.g., the INSDC repository[8] for the storage of raw sequencing data, genome assemblies and sample metadata, and the EVA European Variation Archive[9] for all species genetic variation data).

Finally, all publications building on data gathered within REACT must follow a strict Open Access OA "[…] under the latest available version of the Creative Commons Attribution International Public Licence (CC BY) or a licence with equivalent rights"[10]. Exceptions are possible for monographs and other long-text formats, where "the licence may exclude commercial uses and derivative works"[11]. As for the time being, there are no such long-text formats planned. The most recent Creative Commons license to be attributed to published papers, is CC BY 4.0[12].

4.3 Making Data Interoperable

All data available for publication are provided in standardized and machine-readable open formats and are compliant with open and/or proprietary software. Data formats conform to widely accepted standards and are readable with tools that are freely available today and are likely to remain so. This should facilitate data exchange between researchers and institutions. Overall, in REACT we expect data to be stored and shared in the following formats: *e.g. .docx, .pdf, .rf, .txt, .pptx, .xlsx,*

[3] www.react-insect.eu
[4] e.g., describe data for gene sequences
[5] e.g., EBUCore is a set of descriptive and technical metadata based on the Dublin Core and adapted to media
[6] INSPIRE Directive 2007/2/EC consolidated and associated EC-Regulation 1205/2008
[7] https://react-insect.eu/?page_id=663
[8] https://www.insdc.org/
[9] https://www.ebi.ac.uk/
[10] See Annex 5 to the Model Grant Agreement, additional obligations for Art.17
[11] Ibid.
[12] https://creativecommons.org/licenses/by/4.0/

.csv, .jpeg, .tiff, .png, .gif, .svg, .mp4, eps, .ai, .lif, .cz, .vcf, .lif, Geneious, .fasta, .fastq, .gb, .bam, .sh, .pbs, .R, .fast5, .sam, .fnn, .faa, .gbk.

Text-based data will be converted to PDF format before publication.

To further increase data interoperability in REACT we adopt a standard vocabulary. In case this is not possible, a mapping of more common ontologies will be provided. Such mappings shall be published in meta-descriptions, deliverables, and/or peer-reviewed OA publications.

4.4 Making Data Reusable

As outlined above, all data that is publicly shared will be made available to open licences such as Creative Commons. This will enable others to use the data for any purpose, if the re-use gives appropriate acknowledgement to the data creator, the REACT project and EU Horizon Europe research and innovation programme. Data embargo's may be required whilst agreement is reached on ownership and intellectual property protection, or until journal publications are released. Otherwise, the data will be available for re-use as soon as they are published.

Data quality is assured by each partner, while the tools necessary for describing and identifying datasets and for the preparation of descriptions of metadata will be provided by the coordinator in collaboration with the ExP.

5 Responsibility and Allocation of Resources

Each partner processing data is responsible for ensuring that data collection, handling and processing is conducted in accordance with EU regulations or higher. The project coordinator, instead, is responsible for the overall data management within the project and will therefore liaise with each partner to ensure appropriate data management.

The costs outlined for making data F.A.I.R. below do not include additional budgetary provisions foreseen for outsourced data collection, data management and data storage.

Budgetary provision for data storage confirmed in the Grant Agreement: ARO, €9.500; inSilico-IPM €5.000; HUJI €10.000; OKP €8.500; ISCTE €23.000.

Budgetary provision for OA publications confirmed in the Grant Agreement: JLU €18.000; CNR €12.000; inSilico-IPM €15.000; RMCA €9.000; UPAT €6.000; UTH €21.000; HUJI €9.000; CIRAD €9.000; HAO €9.000; ISCTE €9.000.

6 Data Considerations

13 partners will be collecting and processing data during the study. The majority of these organisations have a Data Protection Officer (DPO) appointed under the GDPR. The remaining organisations are not required to appoint a DPO under the GDPR, they will however appoint a project-specific data protection officer in respect of data collected as a part of REACT activities. Some of the activities carried out in REACT inherently require the collection and processing of data. Certain measures are taken into account to minimise the collection and use of personal data.

As for other data, that are not personal data and sensitive because of potentially conflicting intellectual property rights, all data will be stored in private and/or collaborative platforms with restricted access to authorised users only.

Note: The transfer of sensitive personal data from EU countries to third-party countries is strictly prohibited. No personal data will be exported from the EU to Mauritius, Israel or South Africa. Data sets will however be imported to the EU from respective countries. Any such data transfers will be done in accordance with the national laws and the laws of the European Union.

7 Ethics and Research Integrity

All research is conducted according to the Allea European Code of Conduct for Research Integrity[13]. Furthermore, the Consortium confirms that the guidance provided in the European Commission Ethics Self-Assessment Guidelines for any applicable ethics issue will be rigorously followed. As the fulfilment of ethics requirement adheres to WP9 (D9.1, 9.2, 9.3, 9.4), this document does only discuss research integrity and ethics in the context of personal data storage.

As for the collection of personal data that are particularly sensitive, prospective research participants, interview respondents, and participants joining stakeholder meetings, a number of ethical considerations were identified:

- Voluntary participation: participation and attendance at stakeholder events is entirely voluntary and this will be made explicitly clear in all interactions with potential participants.
- Adult participants: participants will be asked to confirm (or in case of building on software and platforms trusted) to confirm that they are over the age of 18.
- Non-adult participants: No data collection is allowed to take place in REACT with people under the age of 18. Communication and dissemination activities targeting young people and children are needed to be designed in a way that no personal data are collected. Participation at respective events requires parental consent.
- Right to withdraw: Participants retain the right to withdraw from the study as will be made explicitly clear to them in the initial briefing document. Where data can be linked to a specific participant (e.g., recordings), participants can withdraw consent at any time during and up to two weeks after the collection of the data; where data has been gathered anonymously participants can withdraw up until submission of the data.
- Storage of information: data collected will be stored securely and will not made available to anybody outside of the project team. Security will include:
    - Encryption of laptops or disk images (e.g., using Filevault on MacOs, Bitlocker on Windows)
    - Password Protection of Audio/Video recordings
    - Prohibition of use of USB memory keys for such data
    - Use of secure network file storage in preference to cloud-based solutions
- Data minimisation: data will only be collected and processed such that it is adequate, relevant and limited to what is necessary for the purposes for which they are processed. Accordingly, data collection will be carefully designed to ensure that superfluous information is not collected. Furthermore, collected data, especially if personal data, will

[13] https://allea.org/code-of-conduct/

not be stored beyond or further used unless this is essential for reasons that were clearly stated in advance.

- Informed consent: all prospective participants to the project will be provided with a briefing document (see Annex 1) which will inform them of the nature of the project, and explain how their data will be used, controlled, stored and ultimately disposed. The briefing document will also contain the contact details for both the local project team representative and the coordinator. Researchers involved will ensure the participants understand the content fully and answer any questions they may have. Following this, prospective participants will be invited to give their written consent (see Annex 2) to participate to REACT research, communication and dissemination, and/or stakeholder meetings. Copies of the written consent will be kept and stored by the respective beneficiary implementing an action. As for filming purposes, it is possible to record the consent on tape.
- Confidentiality: Research participants will be assured that any data collected will be treated confidentially and used only for the purposes stated beforehand. Where data is collected through public forums, confidentiality issues will be discussed before the session and participants will be requested to agree in the consent forms to maintain confidentiality. The use of video material, photographs and audio files recorded for dissemination and communication purposes is strictly limited to the communication and dissemination of REACT.
- Debriefing: REACT researchers, REACT stakeholder event organisers, and REACT communication experts ensure that participants are comfortable talking about any subjects that may arise. In case further information is needed or critical issues are raised, project partners are happy to provide further information and share the contact details of the local project contact and/or coordinator.

8 References

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9 Annex I: Participant Briefing Document

Participant Briefing Document

Project description:

REACT aims to develop long-term environmentally friendly response strategies and novel sustainable tools to protect fruit and vegetable production and export capacities from two invasive insect pests of EU priority – *Bactrocera dorsalis* (Bd) and *Bactrocera zonata* (Bz).

The project will provide enhanced capacity to prevent, identify, monitor, and control these pests. To assess invasion risks, REACT will study the main facilitators and drivers of early invasive processes, the sources and dynamics of adventive populations, and suitable hotspots for species establishment. The project will also develop a novel field-deployable, rapid, and cost-effective mobile solution for interception. Multiple novel reaction strategy components and tools will be developed and integrated to tackle outbreak events by economically sound programs. The project will also conduct experiments to prove the feasibility of an eradication approach for the first time in Europe. The program and its socio-economic impact will be evaluated with stakeholders and multiple actors. The goal is to create rapid response pest eradication capabilities that are pesticide-free and safe for the environment.

Potential involvement: the project team wishes to speak with persons who have experience of or are affected by invasive insect pests. We will engage with interested participants through a mixture of standardized quantitative, qualitative and journalistic methods.

What does it mean for me?

- Participation in the study is entirely voluntary and nobody 'has to take part' just because of their experience with invasive pest reduction. Participants should be over 18 years of age.
- All data will be anonymised before being analysed. The aim is to identify explicit opinion and attitudes. As for audio, photo, and video recordings I may / may not consent with publication for purpose reasons.
- Confidentiality will be maintained insofar as possible. Where focus groups are used, confidentiality issues will be discussed and agreed prior to the session.

- Participants retain the right to withdraw from the study at any time in the process.
    - where data can be linked to specific individual participants (e.g., audio recordings of interviews), participants can withdraw consent at any time during and up to two weeks after the collection of the data – in which case the material will be deleted;
    - where data has been gathered collectively (e.g., focus groups), participants can withdraw any time, but the data collected up to that point will be retained;
    - where data has been gathered anonymously, participants can withdraw any time until the data is collected by the researchers.
- Data collected will be used only for this project and follow-on studies. It will be stored securely and not made available to anybody outside of the research team. Security will include: password protection of audio and video recordings; encryption of laptops; non-use of USB memory keys; and use of secure network file storage for long-term storage.
- Any physical documents will be stored in locked cabinets in the offices of the research team. The data will be securely stored for a minimum of ten years before disposal.

Further Information:

URL: www.react-insect.com

Contacts:

Local Project Contact (please fill in)

_____

_____

_____

_____

_____

_____

Project Coordinator:

Prof. Dr. Marc Schetelig

Institute for Insect Biotechnology

Dep. of Insect Biotechnology in Plant Protection

0049 641/99-35900

marc.schetelig@agrar.uni-giessen.de

Winchester Str. 2; Gießen (DE)

Signed: _____

Date: _____

10 Annex II: Consent Form

Consent Form

I, _____ (Print Name) agree to participate in the REACT project.

- The purpose and nature of the study has been explained to me.
- I confirm that I am over 18 years of age and that I am participating voluntarily.
- I give permission for my interviews with the researchers to be audio- and/or video recorded.
- I understand that I can withdraw from the study, without repercussions, at any time, whether before it starts or while I am participating.
- I understand that sensitive data provide to the project will be treated confidentially and that anonymity will be ensured in the write-up by disguising my identity.
- I understand that disguised extracts from my interview may be quoted in any subsequent publications if I give permission below:

(Please tick one box:)

☐ I agree to anonymised quotation/publication of extracts from my interview for publication purposes.

☐ I do not agree to anonymised quotation/publication of extracts from my interview for publication purposes.

Signed: _____

Date: _____

11 Annex III: Material Transfer Agreement

MATERIAL TRANSFER AGREEMENT FOR THE IMPLEMENTATION OF PROJECT:

Rapid elimination of invasive insect agricultural pest outbreaks by tackling them with Sterile Insect Technique programs

Clause One
(Definition)

The Parties wish to establish the rights and obligations arising from material transfers under the Project. The materials ("Materials") shall include but not be limited to any and all materials that one Party may provide to another under or in connection with the Project and this Material Transfer Agreement and all replicated forms, any data, any software, any material of soil/substrate, plant, animal, bacteria, fungus, algal or protozoan origin, including reproductive and vegetative propagating material, containing functional units of heredity, any constructs, strains, derivatives, portions, progeny and cells, tissues, genes, plants and seeds, nucleic acids, transformants, bioactive or other biological materials, proteins, enzymes, antibodies, isotope-labelled or unlabeled substrates and /or molecules, auxiliary segments of DNA such as, but not limited to, promoters, selectable markers, introns, terminal sequences, targeting sequences and leader sequences containing any part of the Materials and improvements thereof.

Clause Two

(Property, Use and Intellectual Property Rights)

1. The Materials shall remain the property of the Party that delivers the Materials ("Supplier") and shall be returned immediately or destroyed if requested by the Supplier or by the General Assembly in the event that the Party receiving the Materials ("Recipient") is in breach of any of the conditions of this Material Transfer Agreement, without prejudice to the provisions of the following paragraph.
2. The Recipient shall keep the Materials secure at the laboratories of the Research and development staff involved in the Project ("Recipient Staff") and ensure that no-one other than the Recipient Staff and authorised co-workers have access to them.
3. The Recipient shall ensure compliance with all applicable local, national, and international laws, guidelines, and regulations governing the importation, transportation, disposal, keeping and usage of the Materials
4. The Recipient will ensure that the Recipient Staff shall use the Materials with the highest

standards of skill and care.

5. All considerations regarding intellectual property, its protection and exploitation shall be subject to the provisions of the Consortium Agreement.

Clause Three

(Records of Material Transfers)

For each transfer of Materials between two Parties, a registration sheet shall be executed, according to the model in Annex 1. Scanned, electronic and facsimile signatures will be as valid as original signatures. A copy of the fully executed registration sheet shall be given to each of the two Parties involved in the transfer (Supplier and Recipient) and another copy will be destined to the REACT Coordinator.

Clause Four

(Term)

This Material Transfer Agreement will have a duration starting with its signature and ending with the termination of the Agreement.

Clause Five

(Survival)

It is agreed that Clause Two, Clause Three and of this Clause Five shall survive the termination or expiry of the Consortium Agreement.

Attachment 1

Registration sheet for the transfer of Materials

within the scope of REACT:

"Rapid elimination of invasive insect agricultural pest outbreaks by tackling them with Sterile Insect Technique programs"

_____(Supplier)

delivers Materials to

_____(Recipient)

to be used exclusively within **REACT**, according to the following information:

Materials

- Reference code (if applicable): _____
- Description (type of Materials, origin, previous processing/transformation, etc):

  _____
- Quantity: _____

Transfer

- Supplier
  - Signature of collaborator/employee of Supplier: _____
  - Shipping date:___/____/_____(DD/MM/YYYY)
  - Carrier used: _____
- Recipient
  - Signature of Recipient Staff: _____
  - Date of receipt:___/___/_____(DD/MM/YYYY)