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# IMAGE

## Innovative Management of Animal Genetic Resources

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Horizon 2020 FRAMEWORK PROGRAMME

**TOPIC: MANAGEMENT AND SUSTAINABLE USE OF GENETIC RESOURCES**

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### DELIVERABLE D2.1

Deliverable title: **Survey questionnaire to collect detailed information about  
germplasm and genomic collections**

Abstract: The questionnaire was developed for the purpose of a European wide genetic collections survey. The survey was ready for testing in September 2016 and distributed in October 2016. Detailed information of Survey Questionnaire can be found in Annex.

Due date of deliverable: **M6 2016/Aug** Actual submission date: **M9 2016/Nov**

Start date of the project: March 1<sup>st</sup>, 2016 Duration: 48 months

Organisation name of lead contractor: **Task Leader: IDELE; WP Leader: WR**

Contributors: **SGGW, BOKU, PTP, INRA, WR, IDELE**

Dissemination level: **PU**<sup>1</sup>

Revision N°: V0

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<b>PU</b> Public (must be available on the website)
<b>PP</b> Restricted to other programme participants (including the Commission Services)
<b>RE</b> Restricted to a group specified by the consortium (including the Commission Services) (precise to whom it should be addressed within IMAGE consortium)
<b>CO</b> Confidential, only for members of the consortium (including the Commission Services)

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## Executive Summary

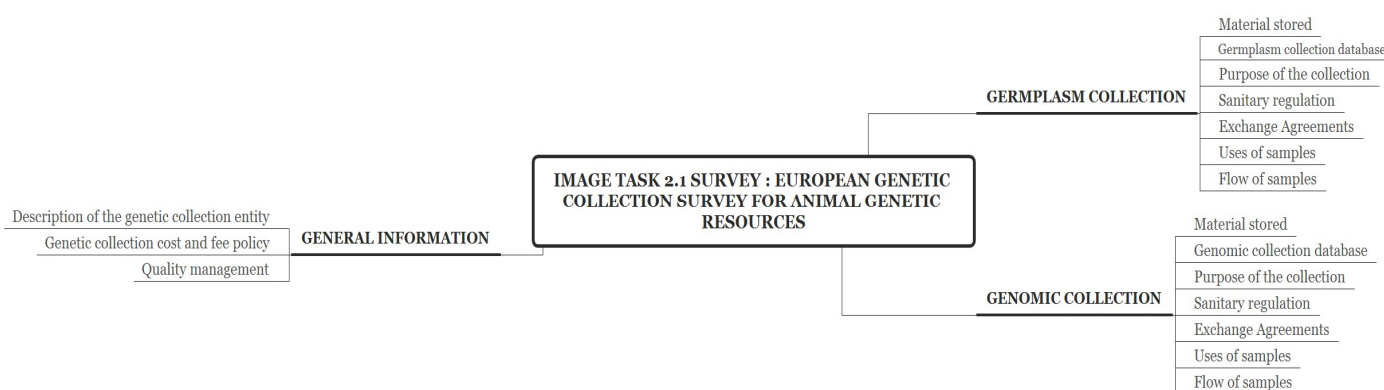
<b>Background</b>	IMAGE will provide for the first time a strategic analysis of the current ex-situ collections in Europe regarding their strategies, characteristics and complementarities/redundancies. For this purpose IMAGE will first produce a documented inventory of ex-situ animal genetic collections in Europe. The results of the inventory will contribute to improving the functioning and networking of gene banks.
<b>Objectives</b>	The objective is to produce a documented inventory of ex-situ animal genetic collections in Europe. The survey is expected to result in detailed information about characteristics and functioning of European animal genetic collections, in order to evaluate their diversity. A virtual integration of European animal genetic resources will be established through identification of genetic collections and connection with appropriate data resources.
<b>Methods</b>	A questionnaire template was developed and has been widely distributed to all relevant institutions or entities in Europe and among IMAGE consortium partners, keeping genetic collections.
<b>Results &amp; implications</b>	Through this survey IMAGE will collect detailed information about characteristics and functioning of germplasm and genomic collections in across Europe. Data will be made data accessible through a European portal for genetic collections

## I. European Genetic Collection Survey for Animal Genetic Resources

The survey "European Genetic Collection Survey for Animal Genetic Resources" is part of WP2 of the IMAGE project. WP2 will enhance functioning of genetic collections in terms of representativeness, standards and protocols, and subsequently will enhance the use of genetic collections.

### Topics of the survey :

The survey contains all relevant topics and characteristics of genetic collections related to genebank functioning. For some topics, the aim of the survey is to identify which genebank hold information about this topic, in order to ask them detailed information later during the IMAGE project. The topics of the survey are described in the following mind map:



### Purpose of the survey :

The aim of the survey is to make an inventory of germplasm collections and genomic collections across Europe. Then, the survey has several objectives:

- Implement a map of gene banks across Europe
- Understand the diversity and the characteristics of gene banks about their:
  - Objectives
  - Databases
  - Internal functioning
  - Protocols related to exchange of material
  - Relation with other genetic collections at national or international level
- Taking inventory of material stored in gene bank collections

### Public expected:

In order to have an inventory and a mapping of European animal genetic collections as exhaustive as possible, the survey has to be sent to all institutions or entities keeping or managing genetic collections in Europe.

**Use of the data collected:**

Information collected through this survey will be made accessible through a European portal for genetic collections, and will be used for further analysis of the state and characteristics of genetic collections of farm animal genetic resources in Europe.

## II. Appendix

### Word version of the online survey:

# European Genetic Collection Survey for Animal Genetic Resources

Thank you for your interest to contribute to the '**European Genetic Collection Survey for Animal Genetic Resources**'. The survey is a part of the IMAGE project, funded by the European Commission (Horizon 2020).

The goal of **this survey** is to generate an overview, and to better understand the diversity and characteristics of two types of genetic collections:

- 1) **Germplasm collection** is a collection that covers biological samples of reproductive material (semen, embryo, etc.).
- 2) **Genomic collection** is a collection that includes other biological material (DNA, blood, tissue).

We believe that it is important to undertake this survey to better understand the state of animal genetic collections in Europe, their problems, needs and areas requiring further development.

Information collected through this survey will be made accessible through a **European portal for genetic collections**, and will be used for further analysis of the state of genetic collections of farm animal genetic resources in Europe.

While participating in the survey will require time and efforts, we are sure that the outcome of the survey will be helpful to you and to all genetic collections. It will enhance their use and visibility, their daily operations and will provide opportunities for collaboration in research and breeding.

Thank you very much for your cooperation.

Note: you can stop and continue the unfinished survey whenever you want by clicking on "Resume later".

## I. General information

### I.1. What type of genetic collection do you have?

Please choose **all the items** that apply:

- Germplasm collection (reproductive material/germplasm)
- Genomic collection (DNA/blood/tissues)

• Germplasm collection: set of reproductive material collected for long term conservation of population diversity

• Genomic collection: set of other biological samples collected and stored for genomic studies (i.e. suitable for DNA or RNA extracted).

### I.2. Please fill in the contact detail of the entity managing the genetic collection:

Please write your answer(s) here:

- Full name of the entity
- Acronym of the entity
- Contact person first name
- Contact person last name
- Email
- Phone number
- Street address
- Zip
- City
- Country
- Geographic location (latitude/longitude)
- Website url

**I.1. What is the type of the institution managing the genetic collection?**

- Ministry
- Government Agency
- University
- Public research institute
- Private company or institute
- Association or foundation
- Public-Private partnership
- Other – please specify:

**I.2. Is there a duplicate collection of the genetic material on a secondary site or back-up site?**

**Help text: Samples from one animal/sampling are stored in two sites (duplicate site)**

- Yes
- No
- Other

**I.2.1. If yes, Is the duplication?**

- Full duplication
- Partial duplication

**I.3. Who has the ownership right(s) of the genetic material in your collection?**

**Several propositions are accepted**

- The institution managing the collection
- Ministry
- Government Agency
- University
- Public research institute
- Private company or institute
- Association or foundation
- Public-Private partnership
- Other

**I.1.1. In case ownership is not the same for all breeds/samples, please indicate what percentage of the collection belongs to which type of owner.**

**Help text :** The percentage is based on the number of donor animals

*(Only the propositions selected in the previous question will appear)*

- The institution managing the collection
- Ministry
- Government Agency
- University
- Public research institute
- Private company or institute
- Association or foundation
- Public-Private partnership
- Other:

**I.1.2. Are there differences in ownership of genetic material according to species**

- Yes (explain)
- No

**I.2. Are you part of a genetic collection network at a national level?**

- Yes
- No

**I.2.1. If yes, Describe the network and your position in the network:**

**(Text)**

**I.3. Is the genetic collection recognized as EUGENA gene bank for long term conservation by your national government?**

- Yes
- No
- In process to become officially recognized as EUGENA gene bank
- I don't know

**I.3.1. Is your collection part of any other international network?**

- Yes (explain)
- No
- I don't know

**I.4. Do you have/ do you record detailed information about costs related to the setting and operating of the genetic collection?**

- Yes
- No

**I.4.1. If yes, would you agree to share this information and willing to participate in further work about economic analysis of gene banks?**

- Yes
- No

**I.4.2. If no to I.4, Would you be able to collect such information and make it available?**

- 
- Yes
- No

**I.5. Do you have a fee policy for the samples in your genetic collection: do samples or cost of their processing have to be paid?**

- Yes
- No

**I.1.1. If yes; Please explain details about your fee policy:**

(Text)

**I.2. Do you have, or do you consider, implementing a quality management system?**

- Yes
- No

**I.2.1. If yes; Would you agree to be interviewed on quality management system?**

- Yes
- No

## II. Germplasm collection

Material stored in the germplasm collection:

**II.1. What species do you have in your germplasm collection?**

Please choose **all** that apply:

- Cattle
- Sheep
- Goat
- Horse
- Pig
- Donkey
- Rabbit
- Chicken
- Turkey
- Duck
- Quail
- Guinea-fowl
- Fish/ Shellfish
- Bee
- Other (specify):

**II.1.1. What is the "other" species?**

(Text)

**II.2. This question is about the quantity of samples for long term conservation you have in your germplasm collection, for each species and breed. Please, follow instructions below to answer.**

- 1.Go back the email you received with the survey questionnaire link.
- 2.Open the Excel table named "germplasm collection\_NameManagingEntity".
- 3.Fill in the Excel table
4. Change, in the Excel file name, the part "NameManagingEntity" by the name of your entity managing your germplasm collection.
- 5.Return the completed Excel table with the link "Upload files" (at the end of this question, below).

Note:

- In the table germplasm collection, you will find one sheet per species. Please fill in one sheet for each species you have selected in the previous question.
- Fill in the table with the common name of the breed (reference: EFABIS/DAD-IS) and the rest of the table with numbers.
- If you can extract a file from a database with the same format and data than the table, you can upload this file directly.
- You can still send the Excel File later to the Email address : anne-sophie.passe-mard@idele.fr BUT don't forget to change the Excel file name as detailed in point 4, above.

### I.1. What is the purpose of the germplasm collection?

Please indicate first, second and third priority objective:

- Support in situ conservation of local/native breeds
- Introduce diversity into *in vivo* population
- Reorient the evolution or selection of a breeding population
- Develop new lines/breeds with specific characteristics
- Have the possibility to recreate breeds or breed lines lost
- Research or genetic diversity studies
- Long term conservation, as insurance policy for unknown future

#### I.1.1. Are there purpose differences between species?

- Yes, please explain
- No

[Entrance of germplasm material:](#)

### I.2. Do you have specific rules or requirements for choosing donor animals and/or for sampling of germplasm material for your germplasm collection?

- Yes
- If yes, please explain
- No

### I.3. Is there a formal agreement/contract to regulate the acquisition of germplasm material for the germplasm collection (Material Acquisition Agreements, MAA)

Help text: Acquisition refers to the entry of material in collection

- Yes
- No

#### I.3.1. If yes, what are the components included in the acquisition agreement?

Help Text: agreement about the acquisition/entry of samples to be stored in the germplasm collection

- Donor animal information (breed, animal identification, pedigree)
- Information on the phenotype/performance of the donor animal (meta data)

- Property rights to the samples
- Cost /of sample acquisition, storage and processing
- Access conditions
- Intellectual property rights
- Veterinary/ sanitary status
- Storage sites and quality assurance
- Conditions related to data generated from the samples

**I.1.1. Please specify any other elements or clauses included in the acquisition agreement:**

(Text)

Exit of germplasm material:

**I.2. Is your germplasm collection available for use?**

- The collection is available for access/use, not depending on the type of use
- The collection is available for access/use, but depending on the type of use
- The collection is available for access/use, but depending on the origin of samples or the provider
- The collection is only partially available for access/use
- Other, please specify (text)

**I.2.1. If the collection is partially available: Why your germplasm collection is partially available?**

(Text)

**I.2.2. Please specify your 3 major criteria for getting access to (using) germplasm material from your germplasm collection:**

[text]

[text]

[text]

**I.3. Do you use Material Transfer Agreements (MTA) for distributing germplasm material from the germplasm collection to users?**

- Yes
- No

**I.3.1. If yes, Which of the following elements or clauses are included in the Material Transfer Agreement (MTA) implemented for your germplasm collection?**

- Information on the sample
- Specific conditions referring to the original acquisition agreement and the rights of the original provider of samples
- Specific conditions depending on the applicants, type of genetic resources and intended uses
- Technical conditions related to the proper/successful use of reproductive material from the collection
- Payment for sample/processing of the sample
- Obligations for users arising from national ABS (Access and Benefit Sharing) legislation, implementing Nagoya protocol and EU 511/2014 (i.e. attachment of IRCC (Internationally Recognized Certificate of Compliance) with PIS and MAT)
- Publication rights

- Rights to distribute the material further
- Right to use for other purposes
- Involving of a third party in processing material or in research

**I.1.1. Please specify any other specific elements or clauses included in the material transfer agreement (MTA) implemented for your germplasm collection.**

[text]

Sanitary regulation of the germplasm collection:

**I.2. Do you have specific regulations or derogations in National sanitary/veterinary law for COLLECTING material for germplasm collection?**

- Yes, please explain
- No
- Don't know

**I.3. Do you see major bottlenecks in terms of sanitary/veterinary requirements for establishing your germplasm collection**

- Yes
- If yes, please explain
- No

**I.4. Do you have specific regulations or derogations in National sanitary/veterinary law for using genetic material from your germplasm collection?**

- Yes, please explain
- No
- Don't know

**I.5. Do you see major bottlenecks in terms of sanitary/veterinary requirements for using your germplasm collection**

- Yes, please explain
- No

**I.5.1. If yes, are you interested participating in further work on this topic?**

- Yes
- No

Information about germplasm database:

**I.6. Do you document information about samples in germplasm collection in your local database?**

- Yes
- No

**I.1. If yes, What is the type of database?**

- Access
- Excel
- Cryoweb
- In-house-built, please specify

**I.2. Is the database fully/partly publicly accessible through the internet:**

- No
- Yes, please provide the link/URL

**I.3. What type of information on the donor animals is available in your database?**

- Animal identification
- Sex
- Birth date
- Breed
- Owner of the donor animal at time of collection
- GPS coordinate of donor animal
- Environment or Farming management system
- Phenotypic data
- Genomic data (genetic markers or DNA sequence data)
- Other, please specify

**I.3.1. If Genomic data is selected; What type of genomic data is available in your database?**  
(Text)

**I.4. What type of information on the samples is available in your database?**

- Sample identification
- Collection method
- Collection date
- Collection location
- Sample quality/ quality assessment method
- Storage information (Location, container, type of tube, temperature)
- Conditioning/Freezing protocol used
- Sample ownership
- Sample sanitary status
- Other, please specify

Information specific to each species present in the germplasm collection:

**I.5. What percentage of your germplasm collection has an EU sanitary status for species XXX?**

**Help text: The percentage is based on the number of donor animals**

(Text)

**I.1. For species XXX : During the past 10 years, what is the average number of new donor animals, for which samples have been acquired every year for your germplasm collection?**

(Text)

**I.1.1. If you have any comment about the yearly entrance of new donor animals in germplasm collection for species XXX, please indicate it :**

(Text)

**I.2. What is the average number of samples taken out from your germplasm collection every year for species XXX?**

(Text)

**I.2.1. If you have any comment about the number of samples taken out from your species XXX germplasm collection, please indicate it :**

(Text)

## II. Genomic collection

Material stored in the genomic collection:

**II.1. What species do you have in your genomic collection?**

Please choose **all** that apply:

- Cattle
- Sheep
- Goat
- Horse
- Pig
- Donkey
- Rabbit
- Chicken
- Turkey
- Duck
- Quail
- Guinea-fowl
- Fish
- Bee
- Other (specify):

**II.1.1. What is the “other” species?**

(Text)

**II.2. This question is about the quantity of samples for long term conservation you have in your germplasm collection for each species and breed. Please, follow instructions below to answer to the question.**

1. Return in the email send with the survey questionnaire link.
2. Load the Excel table named “germplasm collection”.
3. Fill in the Excel table
4. Change, in the Excel table name, the part “NameManagingEntity” by the name of your entity managing your genomic collection

1. Return the complete table with the link "Upload files" (at the end of the question).

**Note:**

- In the table germplasm collection, you will find one sheet per species. Please fill in one sheet for each species you have selected in the previous question.
- Fill in the table with the common name of breed (reference: EFABIS/DAD-IS) and the rest of the table with numbers.
- If you can extract a file from a database with the same format and data than the table, you can upload this file directly.
- You can still send the Excel File later to the Email address : anne-sophie.passemaid@idele.fr BUT don't forget to change the Excel file name as detailed in point 4, above.

**I. What is the purpose of the genomic collection?**

Please indicate first and second priority objective:

- Diversity studies
- Genotype-phenotype association studies
- Generic studies for gene mapping and genome annotation
- Selection signature (monitoring selection response at the DNA level)
- Biomedical model

**I.1.1. Are there purpose differences between species?**

- Yes, please explain
- No

[Entrance of genomic material:](#)

**I.2. Do you have specific rules or requirements for choosing donor animals and/or for sampling of genomic material for your collection?**

- Yes
- If yes, please explain
- No

**I.3. Is there a formal agreement/contract to regulate the acquisition of genetic/biological material for the genomic collection (Material Acquisition Agreements, MAA)**

**Help text:** Acquisition refers to the entry of material in collection

- Yes
- No

**I.3.1. If yes, what are the components included in the acquisition agreement?**

**Help Text:** agreement about the acquisition/entry of samples to be stored in the genomic collection

- Donor animal information (breed, animal identification, pedigree)
- Information on the phenotype/performance of the donor animal (meta data)
- Property rights to the samples
- Cost /of sample acquisition, storage and processing
- Access conditions

- Intellectual property rights
- Veterinary/ sanitary status
- Storage sites and quality assurance
- Conditions related to data generated from the samples

**I.1.1. Please specify any other elements or clauses included in the acquisition agreement:**

(Text)

Exit of genomic material:

**I.2. Is your genomic collection available for use?**

- The collection is available for access/use, not depending on the type of use
- The collection is available for access/use, but depending on the type of use
- The collection is available for access/use, but depending on the conditions of original provider's samples.
- The collection is only partially available for access/use
- Other, please specify (text)

**I.2.1. If the collection is partially available: Why your genomic collection is partially available?**

(Text)

**I.2.2. Please specify your 3 major criteria for getting access to (using) genetic/biological material from your genomic collection:**

[text]

[text]

[text]

**I.3. Do you use Material Transfer Agreements (MTA) for distributing genetic/biological material from the genomic collection to users?**

- Yes
- No
- Other, please specify

**I.3.1. If yes, Which of the following elements or clauses are included in the Material Transfer Agreement (MTA) implemented for your genomic collection?**

- Information on the sample
- Specific conditions referring to the original acquisition agreement and the rights of the original provider of samples
- Specific conditions depending on the applicants, type of genetic resources and intended uses
- Technical conditions related to the proper/successful use of reproductive material from the collection
- Payment for sample/processing of the sample
- Obligations for users arising from national ABS (Access and Benefit Sharing) legislation, implementing Nagoya protocol and EU 511/2014 (i.e. attachment of IRCC (Internationally Recognized Certificate of Compliance) with PIS and MAT)
- Publication rights
- Rights to distribute the material further
- Right to use for other purposes

- Involving of a third party in processing material or in research

**I.1.1. Please specify any other specific elements or clauses included in the material transfer agreement (MTA) implemented for your genomic collection.**

[text]

Information about genomic database:

**I.2. Do you document information about samples in genomic collection in your local database?**

- Yes
- No

**I.3. If yes, What is the type of database?**

- Access
- Excel
- Cryoweb
- In-house-built, please specify (text)
- Other, please specify (text)

**I.4. Is the database fully/partly publicly accessible through the internet:**

- No
- Yes, Please provide the link/URL

**I.5. What type of information on the donor animals is available in your database?**

- Animal identification
- Sex
- Birth date
- Pedigree
- Breed
- Owner of the donor animal at time of collection
- GPS coordinate of donor animal
- Environment or Farming management system
- Phenotypic data
- Genomic data (genetic markers or DNA sequence data)
- Other

**I.5.1. If Genomic data is selected; What type of genomic data is available in your database?**

(Text)

**I.6. What type of information on the samples is available in your database?**

- Sample identification
- Collection method
- Collection date
- Collection location
- Sample quality/quality assessment method
- Storage information (location, container, type of tube, temperature)
- Conditioning/freezing protocol used
- Sample ownership
- Sample sanitary status
- Other

**I.1. Is information from your database recorded in EMBL-EBI's database (European Molecular Biology Laboratory - European Bioinformatics Institute)?**

- Yes
- No

**END**

This is the end of the survey.

- If you have finished answering the survey, please click on "submit".
- If you want to complete some answers (for example you haven't uploaded the Excel file with the quantity of samples in collection yet) and you want to do it later, please click on "Resume later".

Thank you for your participation.

## Excel file for germplasm collection:

First sheet to complete:

	A	B	C	D	E
1	<b>Please complete the two following information</b>				
2					
3					
4	Country				
5	Name of your entity managing the germplasm collection				
6					
7					
8					
9					
10					
11					
12					
13					
14					

Exemple of sheet for one species :

	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O	P	Q	R
1	<b>Please complete this table with the quantity of germplasm samples you have in your collection</b>																	
2																		
3	If you don't have one of the type of material, please put 0 in the column																	
4																		
5	species	Cattle																
6																		
7	Name of the breed, please complete this column with the most common name (see FPABIS/OAD-IS database for reference)																	
8																		
9	Name of the breed	Semen		Embryos		Oocytes		Ovarian tissue		Somatic cells		Somatic cells		First year of sampling	Last year of sampling	Average frequency of sampling (every year, 5 year, 10 year,...)	Will additional samples be added to the collection in the future? (Yes/No)	
10		Number of donors (male)	Number of straws	Number of donors (female)	Number of embryos	Number of donors (female)	Number of oocytes	Number of donors (female)	Number of ovarian tissues	Number of donors (male)	Number of somatic cells	Number of donors (female)	Number of somatic cells					
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## Excel file for Genomic collection:

First sheet to complete

	A	B	C	D
1	<b>Please complete the two following information</b>			
2				
3				
4	Country			
5	Name of your entity managing the genomic collection			
6				
7				
8				
9				
10				
11				

Exemple of sheet for one species :

	A	B	C	D	E	F	G	H	I	J
1	<b>Please complete this table with the quantity of biological samples (DNA, blood, tissue) you have in collection (except reproductive material)</b>									
2										
3	species	Cattle								
4	If your collection is not structured by research project, please ignore the first column									
5	Name of the breed: please complete this column with the most common name (see EFABIS/DAD-IS database for reference)									
6	Name of the project that funded the establishment of collection (if relevant)	Breed	Type of genetic material	Number of samples	Number of donors	First year of sampling	Last year of sampling	Average frequency of sampling (every year, 5 year, 10 year,...)	Will additional samples be added to the collection in the future ? (Yes/No)	
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Presentation: Cattle | Sheep | Goat | Horse | Pig | Donkey | Rabbit | Chicken | Turkey | Duck | Quail | Guinea-fowl | Fish-Shellfish