

THE EU.CHERRY PROJECT

**AND THE OPPORTUNITY TO FINALISE TASK 2 OF
COST FA1104**

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CHERRY 2016



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1. Context : The ECPGR Prunus Working Group
2. The EU.CHERRY project
3. Opportunities for WP1 Task 2

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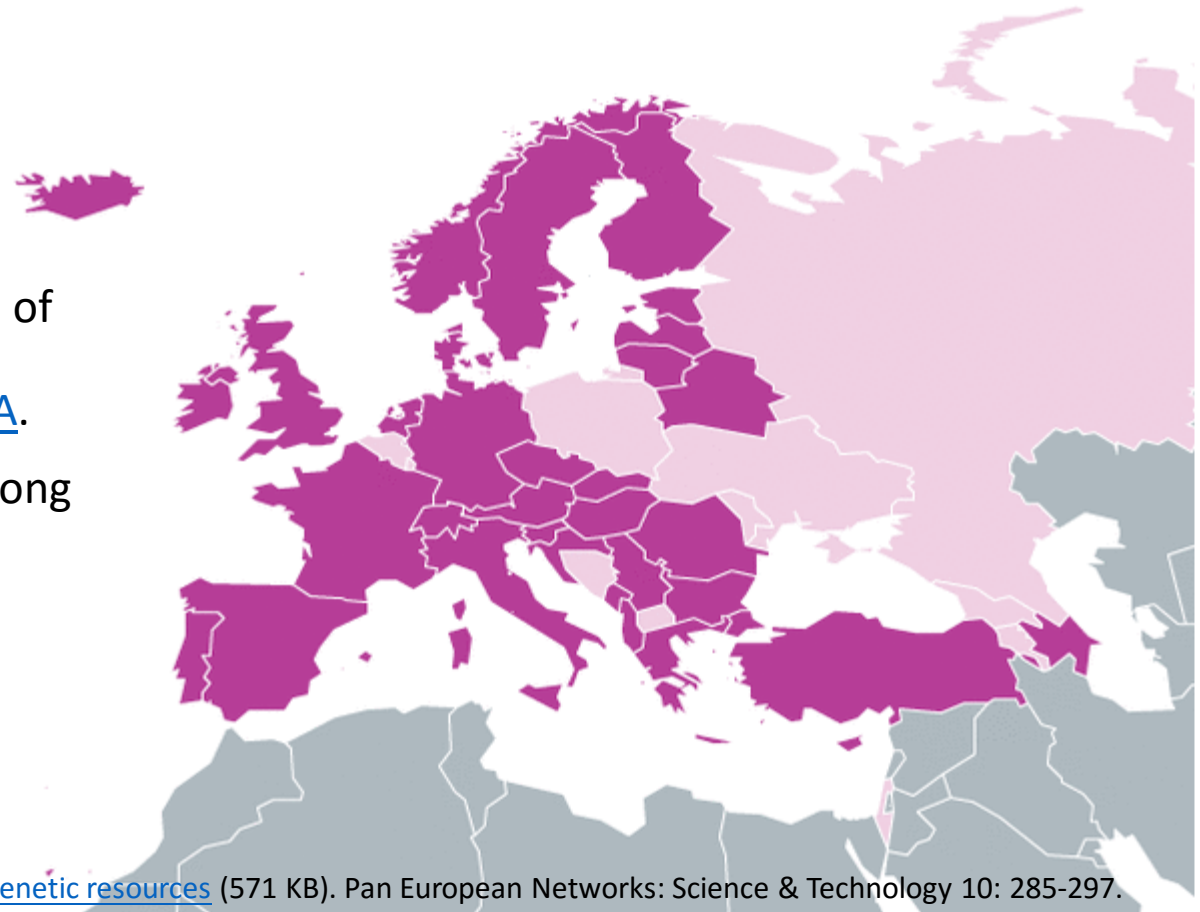
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The ECPGR : European Cooperative Programme for Plant Genetic Resources



- aiming at ensuring the **long-term conservation** and **facilitating the utilization of plant genetic resources** in Europe.
- founded in 1980 on the basis of the recommendations of the [UNDP](#), the [FAO](#) and [EUCARPIA](#).
- collaborative Programme among most European countries
- financed by the participating countries

■ Signatories of ECPGR Membership in Phase IX
■ Countries invited to join Phase IX



References

- www.ecpgr.cgiar.org
- Maggioni L, Engels J. 2014. [Networking for plant genetic resources](#) (571 KB). Pan European Networks: Science & Technology 10: 285-297.

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- aiming at ensuring the **long-term conservation** and **facilitating the utilization** of **plant genetic resources** in Europe.

⇒ECPGR supports two **tools**



- **Eurisco**, the European catalogue
- **Aegis**, the European collection



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the European Search Portal for Plant Genetic Resources

international database

information about European *ex situ*
conserved accessions of plant
genetic resources for food and
agriculture (PGRFA)

its dataset presently comprises
passport data

- From 43 countries; 400 European Institutions
- of approximately 1.84 million accessions
- belonging to more than 6,200 plant genera.

18 500 *Prunus* Accessions
6 500 Cherry Accessions

National Inventory	N° <i>P avium</i> Accessions	N° <i>P cerasus</i> Accessions
Albania	65	2
Austria	242	95
Belgium	271	33
Croatia	8	16
Czech Republic	332	107
Estonia	44	5
Germany	320	90
Greece	50	7
Italy	802	120
Latvia	42	22
Macedonia FYR	46	9
Moldova	14	0
Nordic Countries	0	1
Spain	278	20
Switzerland	2331	16
Ukraine	388	356
United Kingdom	274	36

References

<http://eurisco.ipk-gatersleben.de>

COST 2016: Poster « Documenting European Agrobiodiversity »



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Since 2015 : C&E Data
(Characterization & Evaluation)

References

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<http://www.ecpgr.cgiar.org/contacts-in-ecpgr/ecpgr-contacts/eurisco-national-inventory-focal-points/>

aegis, A European Genebank Integrated System

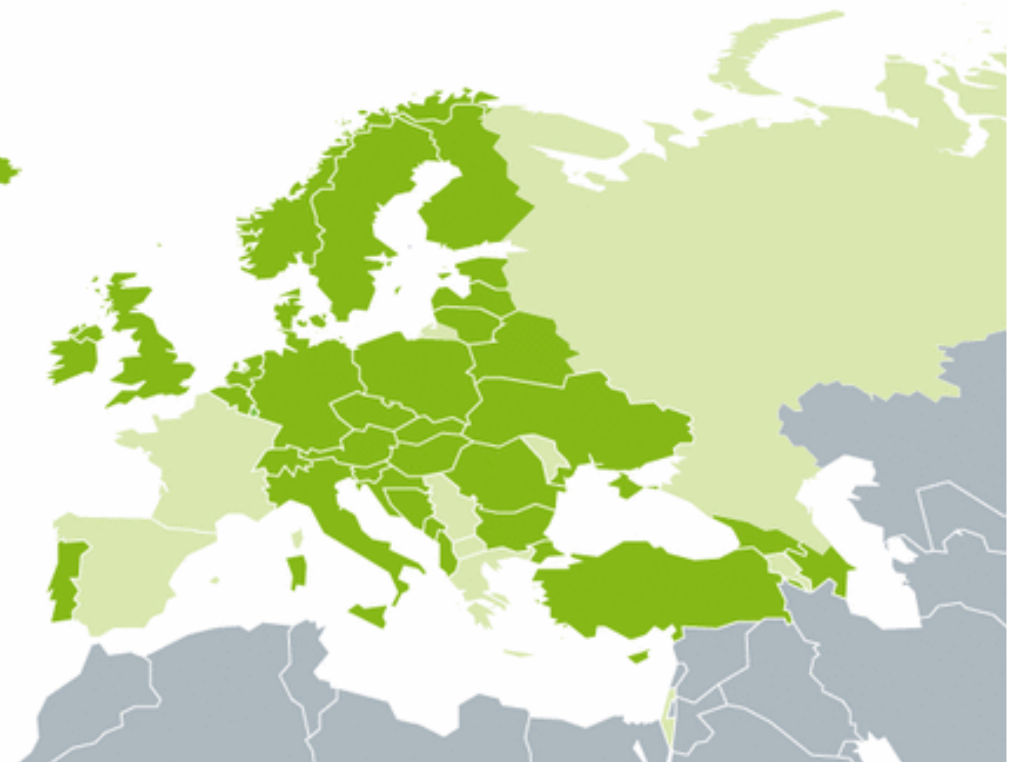




Aegis aims to create a decentralised European collection

Members of AEGIS are in the process of selecting individual accessions as **European Accessions**, for which they are prepared to assume :

- long term conservation responsibilities according to agreed technical standards;
- ensure the safety duplication;
- to make the European Accessions available along with the pertinent information, in accordance with the principles defined in the (SMTA)

28 686 European Accessions
(No *Prunus* accessions)



 AEGIS Member Countries
 Countries invited to join AEGIS

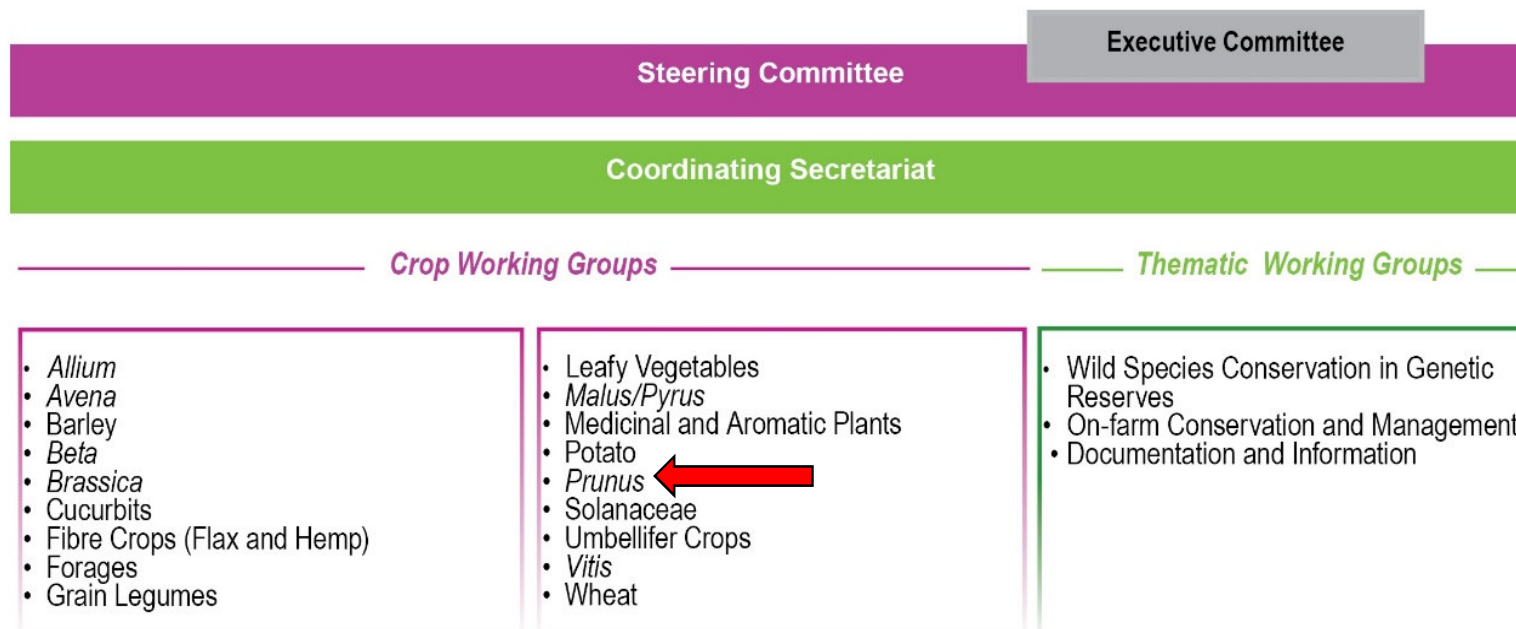
SMTA: Standard Material Transfer Agreement

References

<http://www.ecpgr.cgiar.org/aegis/>

The ECPGR Prunus Working Group

ECPGR operates through Working Groups dealing with groups of crops or with general themes related to plant genetic resources.



Chair: Daniela Giovannini (CRA-FRF Unitã di Ricerca per la Frutticoltura à Forli)

87 ECPGR *Prunus* Working Group Members from 39 countries

References

Benediková D, Giovannini D. 2013. [Review on genetic resources in the ECPGR Prunus Working Group](#). Acta Hort. (ISHS) 981:43-51.

The ECPGR Prunus Working Group

Activities

- **Long term conservation**

=> Standards

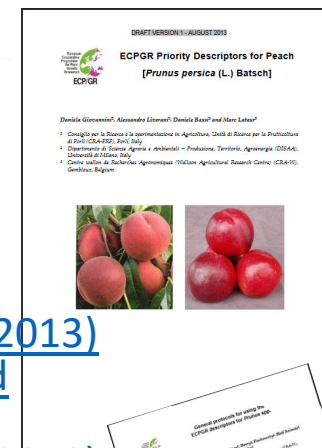
- [Prunus-specific standards \(PGS\) for genebank management \(V1, January 2016\)](#)



- Progress in the **harmonized characterization** of the Prunus accessions in the various European Prunus collections

=> Descriptors

- [ECPGR Priority Descriptors for Peach \(draft version 1, August 2013\)](#)
- ECPGR Priority Descriptors for Plum (soon be released)
- [General protocols for using the ECPGR descriptors for Prunus spp. \(July 2013\)](#)
- [The European Prunus Database – A new list of Prunus passport data and descriptors \(2011\)](#)
- [List of minimum passport descriptors for all Prunus species \(November 2010\)](#)



- **Easy access to data** on Prunus Genetic Resources

- European Prunus DataBase



The European Prunus Data Base

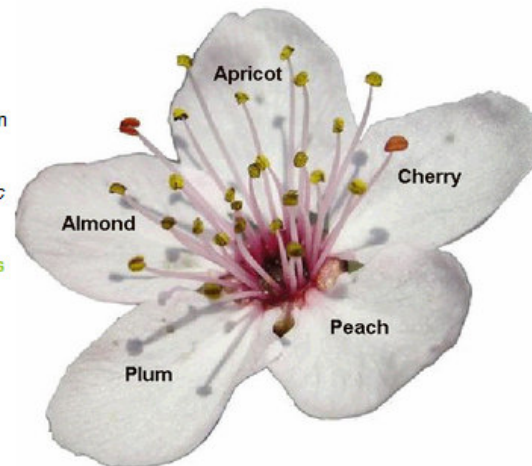


The European *Prunus* Database:
Stone Fruit Genetic Resources maintained by European
countries



The European *Prunus* Database was originally established at the Nordic Gene Bank in 1983 and then maintained by the French National Institute for Agricultural Research (INRA) at Bordeaux, under the initiative of the *European Crop Programme for Genetic Resources* (ECPGR) Networks since 1994.

The database contains data of **European collections** of all *Prunus* species, cultivated stone fruits and their related species as well as the wild ones. The EPDB portal provides access to 5 distinct databases providing passport, characterisation, and evaluation data.



Passport data consist of a list of passport descriptors defined by the ECPGR *Prunus* working group (WG), plus the EURISCO descriptors, derived from the FAO-IPGRI Multi Crop Passport Descriptors.

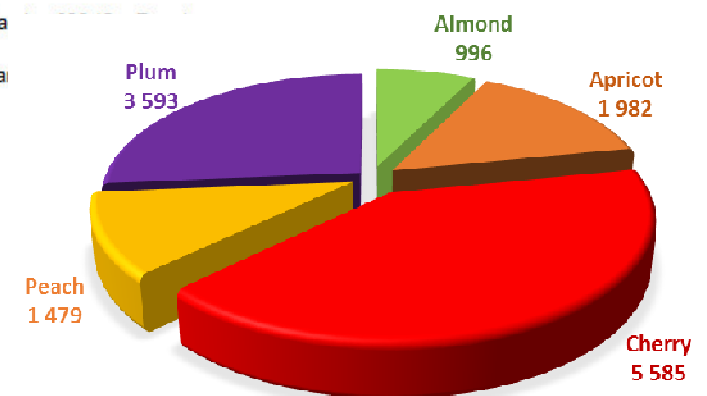
Phenotypic data consist of characterisation and evaluation descriptors defined by the ECPGR *Prunus* WG and pictures of trees, fruits, flowers and leaves.

Molecular data consist of descriptors describing both molecular markers (i.e. SSR primer sequences) and genotypes (i.e. in general 2 allele sizes for diploid species).

To access to the database, click on one of the petal, or click on one of the following links: [Almond](#) / [Apricot](#) / [Cherry](#) / [Peach](#) / [Plum](#)

These five databases were developed thanks to the ECPGR funds and the AGRI GEN RES "European Small Berries genetic resources" allocated funds. The [GenBerry Database](#) was used as a model.

Acknowledgements: thanks to all partners, members of the ECPGR *Prunus* Working Group, that had contributed to get passport and cha
Last update: March 2012



References

<http://www.bordeaux.inra.fr/euprunusdb/>

COST 2016: Poster « Documenting European Agrobiodiversity »

THE EU.CHERRY PROJECT

AND THE OPPORTUNITY TO FINALISE TASK 2 OF COST FA1104

1. Context : The ECPGR Prunus Working Group
2. **The EU.CHERRY project** : Collaborative action for updating, documenting and communicating the cherry patrimonial richness in EU
3. Opportunities for WP1 Task 2

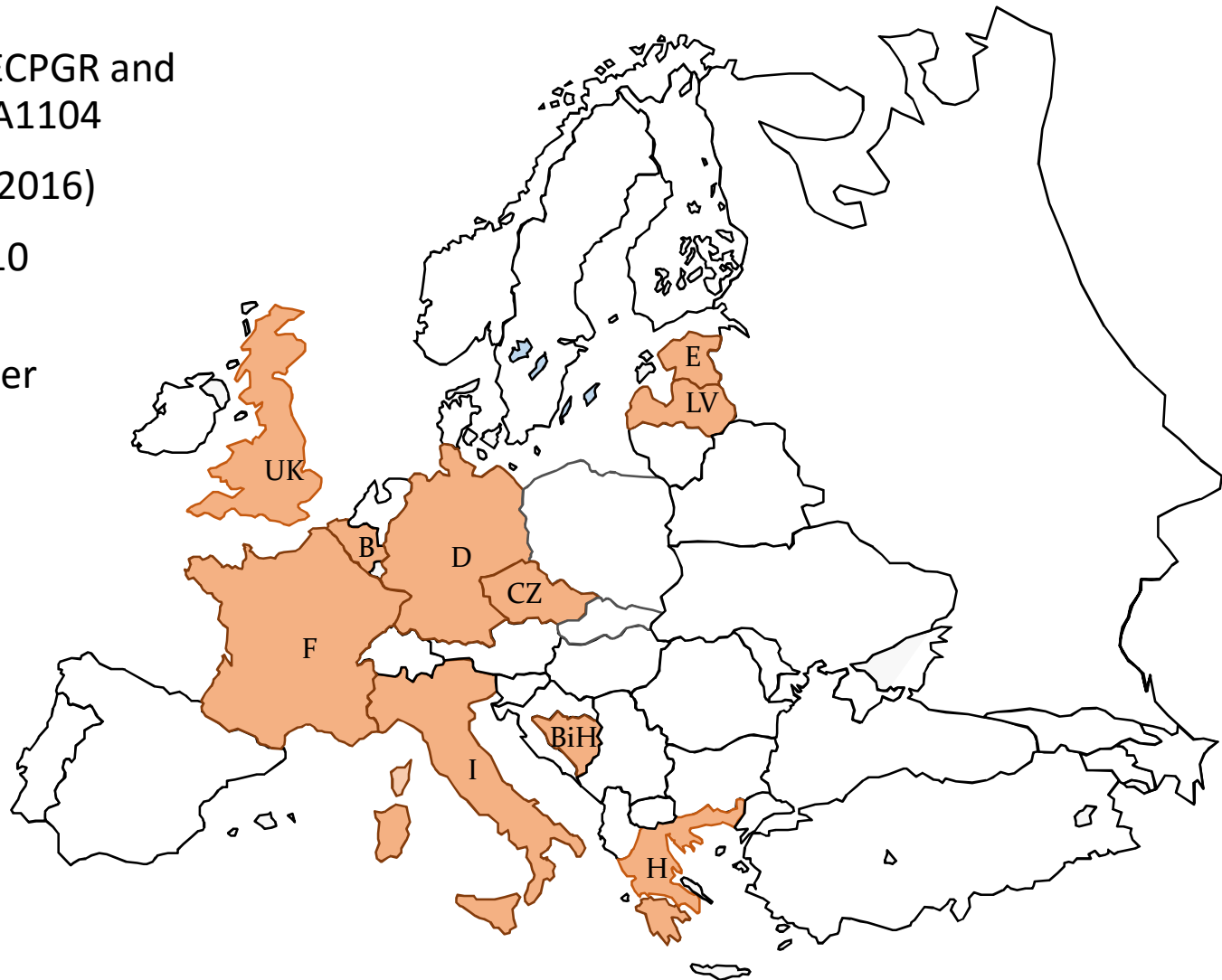
 **CHERRY 2016**



EU.CHERRY : Collaborative action for updating, documenting and communicating the cherry patrimonial richness in EU



- Co-sponsored by ECPGR and the COST Action FA1104
- Duration : 1 year (2016)
- 12 partners from 10 countries
- + 1 EURISCO partner



EU.CHERRY: Activities

- **Action_1. Increase the quality of data on sweet cherry accessions included or which could be included in Eurisco**
- Action_2. Contribute to the establishment AEGIS *Prunus* collection
- Action_3. Prepare transfer of *Prunus* data and *Prunus* C&E data experience from EPDB to EURISCO

Action_1. Increase the quality of data on sweet cherry accessions include or which could be included in Eurisco

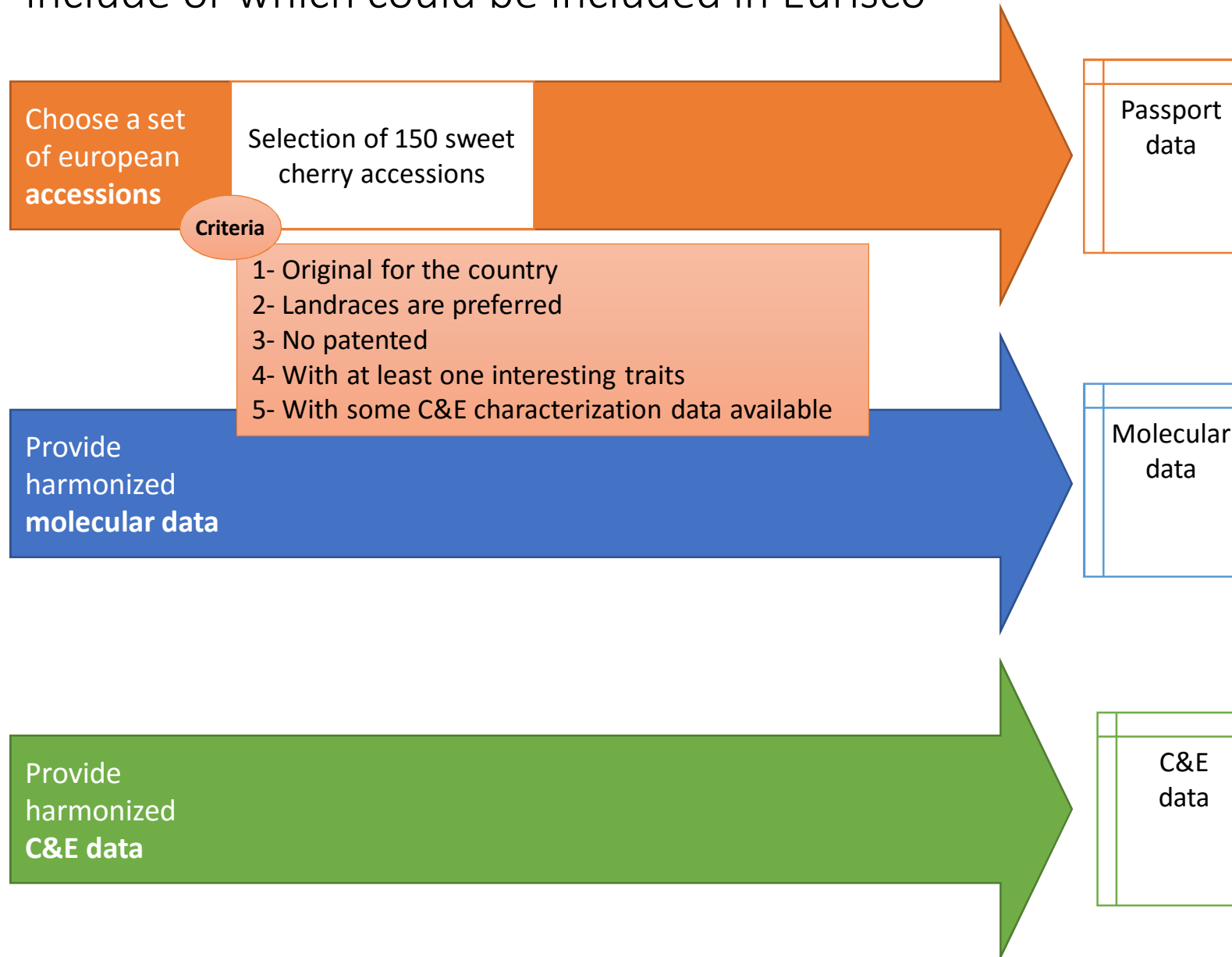


Choose a set
of european
accessions

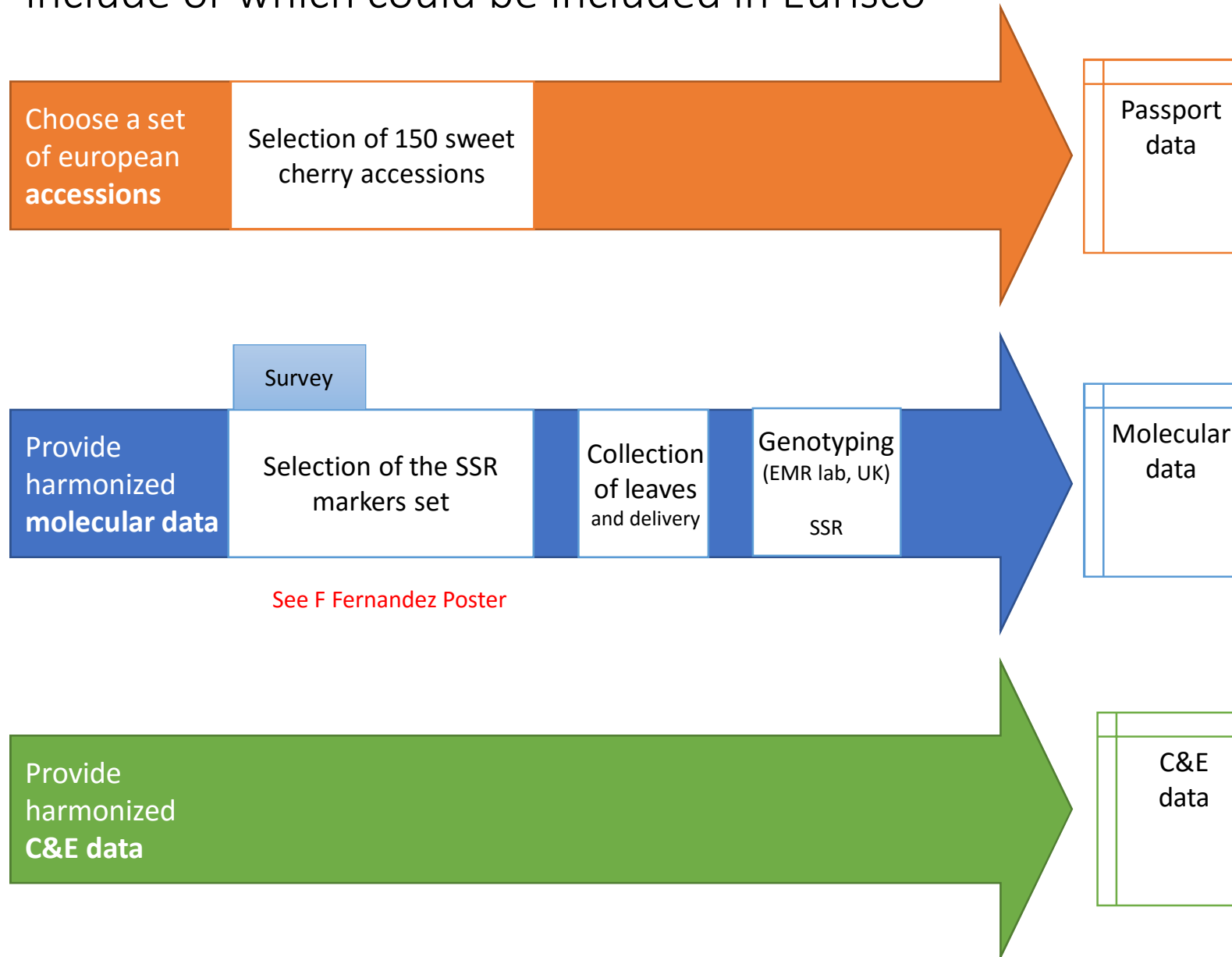
Provide
harmonized
molecular data

Provide
harmonized
C&E data

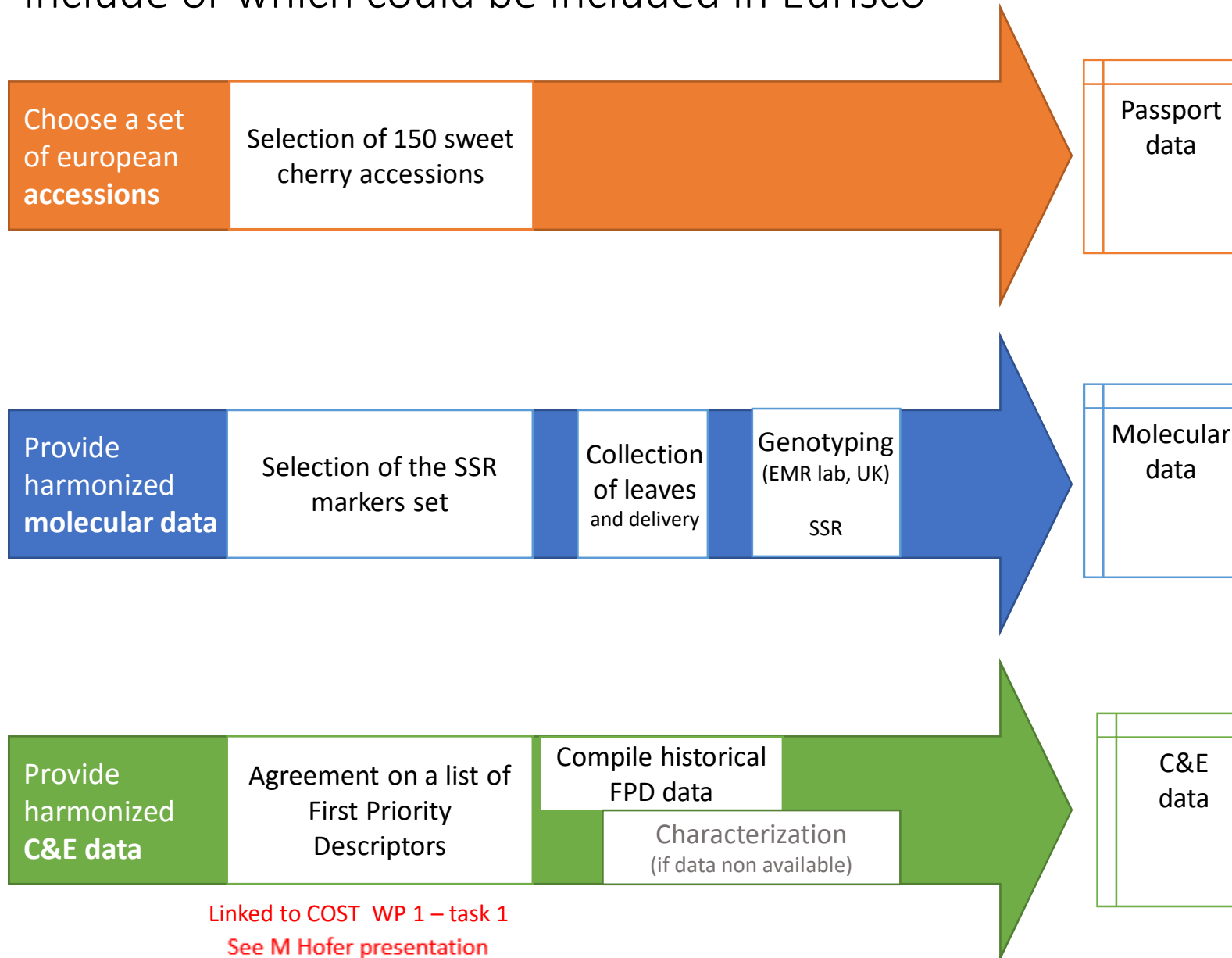
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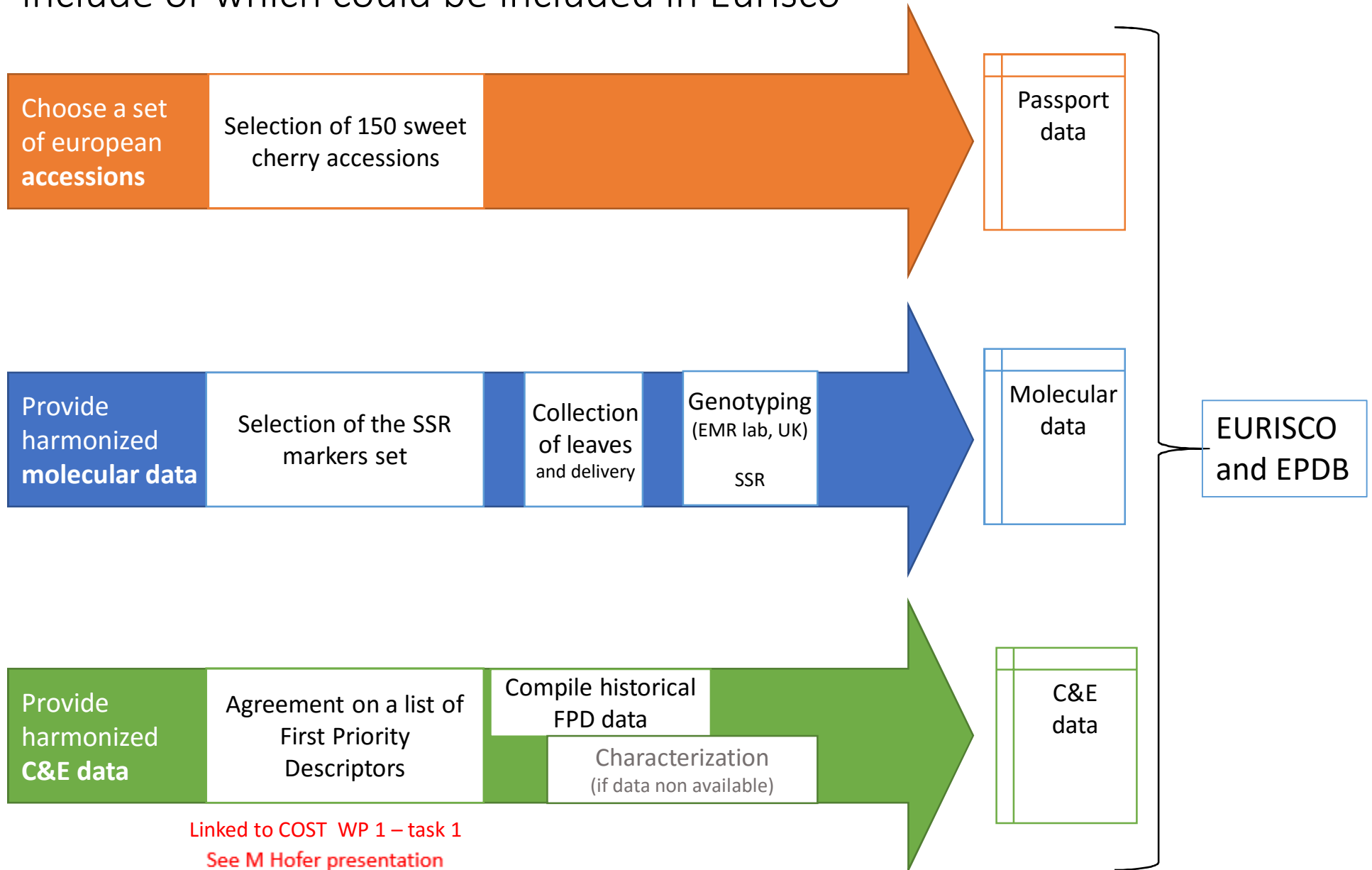
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3. Opportunities for WG1 Task 2

WG1, Task 2: Prioritise the characterisation of the most promising genetic resources for breeders



Main goals :

- Incorporate high levels of genetic diversity into the cherry breeding programmes
- Explore genetic diversity of old EU germplasm endowed with promising traits for breeding

WG1, Task 2: Prioritise the characterisation of the most promising genetic resources for breeders



5 steps

- 1. SELECT germplasm endowed with promising traits for breeding;
- 2. PROVIDE leaf/DNA samples of selections;
- 3. PERFORM molecular characterization of all/subset of samples
- 4. DESCRIBE the accessions proposed using consensus descriptors
- 5. EXCHANGE material, build up a EU core collection

Diapositive 22

MB1

agree with JOSe on share the effort = agreement ; comm

Marine BLOUIN; 01/04/2016

WG1, Task 2: Prioritise the characterisation of the most promising genetic resources for breeders



5 steps

- 1. SELECT germplasm endowed with promising traits for breeding;

Some accessions already offered in COST (Survey)

- 2. PROVIDE leaf/DNA samples of selections;

- 3. PERFORM molecular characterization of all/subset of samples

- 4. DESCRIBE the accessions proposed using consensus descriptors

- 5. EXCHANGE material, build up a EU core collection

No Money

EU.CHERRY can analyse **350** accessions
(150 from EU.Cherry + 200 from COST)

Diapositive 23

MB1

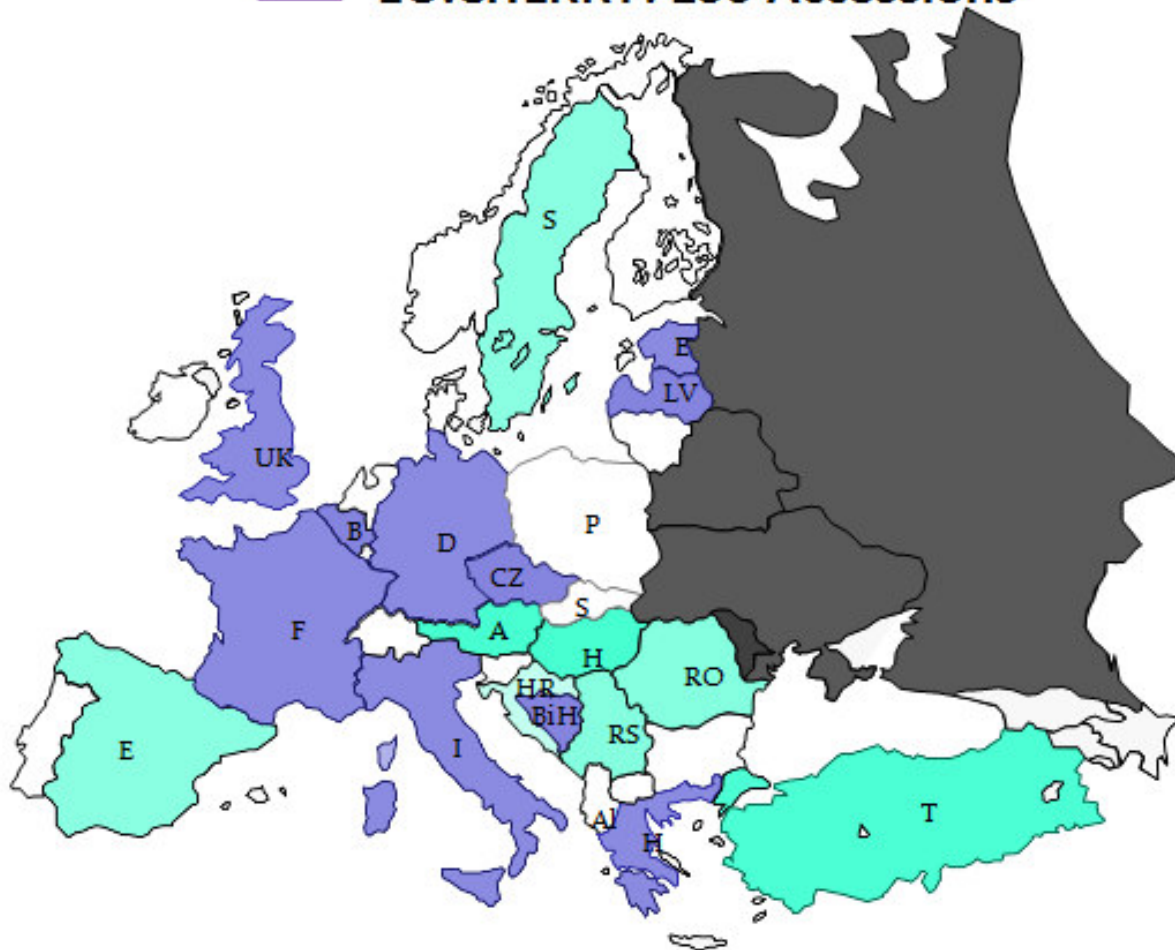
agree with JOSe on share the effort = agreement ; comm

Marine BLOUIN; 01/04/2016

Participating countries



- COST : 110 Accessions**
- EU.CHERRY: 150 Accessions**



COST	
1	Austria
2	Croatia
3	Hungary
4	Romania
5	Serbian Republik
6	Spain
7	Sweden
8	Turkey
...	???
EU.Cherry	
1	Belgium
2	Bosnia & Erzegovina
3	Czech Republic
4	Estonia
5	France
6	Germany
7	Greece
8	Italy
9	Latvija
10	United Kingdom



Participating countries

- COST : 110 Accessions**
- EU.CHERRY: 150 Accessions**

90 accessions more could be genotyped with EU.Cherry grant

And for having a better picture of european sweet cherry diversity

=> Others partners ?



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To conclude



COST Cherry and ECPGR EU.Cherry collaboration provide a very good opportunity for **describing and analysing the European Cherry diversity, and for highlighting their interesting traits for breeders**

- COST partners who want to join us have to provide:
- List of candidates accessions (ASAP)
 - Leaves (to EMR lab, UK – before may)
 - Passport Data
 - Facultative: Characterization and Evaluation

- CRITERIA**
- 1- Original for the country
 - 2- Landraces are preferred
 - 3- No patented
 - 4- With at least one interesting traits

Data will be shared on EURISCO and EPDB

A collaborative (and very nice) publication will be written

90 accessions more could be genotyped with EU.Cherry grant

⇒ Others partners ?

Contacts :

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Daniela Giovannini daniela.giovannini@crea.gov.it

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Thank you

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