

**Questionnaire****Sharing Responsibilities for the Conservation of Plant Genetic Resources for Food and Agriculture (PGRFA) in Europe**

Total number of questionnaires analysed: (13/08/2001) 193. See Annex I for country replies distribution.

**5-1. Please describe your institute (please check ONE box): Total # of replies = 193**

- Research Institute (national) = 109 (56%)
- Agricultural Genebank = 19 (10%)
- University = 28 (14%)
- Private breeding company = 15 (8%)
- Botanic Gardens = 14 (7%)
- Non-governmental organisation (NGOs) = 8 (4%)

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**Note:** In a few cases, multiple replies were given to this question. For the purpose of data analysis, we have attributed each institution to one category class, as follows:

- Institutions defining themselves as genebank AND research institution were considered "genebanks";
- Institutions defining themselves as botanic garden AND research institution were considered "botanic gardens";
- Institutions defining themselves as "NGO" and "breeding company" were considered "NGOs".

**2. Does your institute have a germplasm collection? Total # of replies = 174**

YES - 167 (96%) **0** NO - 7 (4%)

**3. How large is the collection (approximately) in number of accessions? (please check ONE box) Total # of replies = 189**

- Less than 100 accessions = 12 (6%)
- Between 100 and 500 accessions = 42 (22%)
- Between 500 and 1,000 accessions = 36 (19%)
- Between 1,000 and 5,000 accessions = 65 (34%)
- Over 100 accessions = 177 (94%)
- Over 500 accessions = 135 (71%)
- Over 1,000 accessions = 99 (52%)
- Over 5,000 accessions = 34 (18%)

Of these, the breakdown in size of collections:

**Note:** 4 respondents did not specify the collection size, 1 genebank, 1 university and 2 research institutes.

Type of organisations	< 100 accessions	100 - 500 accessions	500 - 1,000 accessions	1,000 - 5,000 accessions	> 5,000 accessions	Total
Research Institute (national)	7	21	25	38	16	107
Agricultural Genebank	0	0	2	5	11	18
University	4	8	3	10	2	27
Private breeding company	0	6	4	4	1	15
Botanic Gardens	0	2	1	7	4	14
NGOs	1	5	1	1	0	8

Type of organisations	< 100 accessions	100 - 500 accessions	500 - 1,000 accessions	1,000 - 5,000 accessions	> 5,000 accessions	Total
Total	12	42	36	65	34	189

4. Please indicate your area of interest related to *ex situ* conservation and use in order of importance, where: 0 = not important; 1 = important; 2 = very important

Area	Total # Responses	2	1	0
Conservation of indigenous (national) germplasm	186	147 (79%)	32 (17%)	7 (4%)
Conservation of breeders' material	183	99 (54%)	62 (34%)	22 (12%)
Exchange and distribution at national level only	162	45 (28%)	92 (57%)	25 (15%)
Exchange and distribution at all levels	178	78 (44%)	79 (44%)	21 (12%)
Others, please specify: See notes at the end of the questionnaire.				

### Overview of the current situation of *ex situ* conservation

5. Is your institute currently sharing responsibilities for *ex situ* PGRFA conservation and use with other institutions outside of your country? Total # of replies = 186 YES = 100 (54%) NO = 86 (46%)  
 Outside of Europe? Total # of replies = 155 YES = 30 (19%) NO = 125 (81%)

Of total Yes to sharing responsibilities outside of the country:

Type of organisation	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Research Institute (national)	5	2	9	12	13	11	14	22	2	10	43	57
Agricultural Genebank	0	0	0	0	1	1	1	4	2	9	4	14
University	2	2	3	4	2	1	2	8	1	1	10	16
Private breeding company	0	0	4	2	2	2	3	1	1	0	10	5
Botanic Gardens	0	0	2	0	1	0	4	3	2	2	9	5
NGOs	1	0	2	3	0	0	1	0	0	0	4	3
Total	8	4	20	21	19	15	25	38	8	22	80	100

Of total Yes to sharing responsibilities outside of Europe:

Type of organisation	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total	
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes
Research Institute (national)	5	1	14	2	17	2	22	5	9	6	67	16
Agricultural Genebank	0	0	0	0	1	0	4	1	5	4	10	5
University	2	1	7	1	3	0	4	3	2	0	18	5
Private breeding company	0	0	4	0	3	0	3	0	1	0	11	0

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Type of organisation	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total	
Botanic Gardens	0	0	2	0	1	0	4	2	4	0	11	2
NGOs	1	0	4	1	0	0	1	0	0	0	6	1
<b>Total</b>	<b>8</b>	<b>2</b>	<b>31</b>	<b>4</b>	<b>25</b>	<b>2</b>	<b>38</b>	<b>11</b>	<b>21</b>	<b>10</b>	<b>123</b>	<b>29</b>

**If YES, HOW are responsibilities shared?** Total # of replies = 103

- Contribution of PGR information for the development of central databases - 68 (66%)
- Collaboration for the characterization and evaluation of accessions - 67 (65%)
- Collaboration for regeneration and multiplication of accessions - 43 (42%)
- Agreement for the safety-duplication of accessions - 39 (38%)
- Delegation of responsibility to a different institution for the conservation of PGR - 21 (20%)
- Other, please specify: = 10 (10%)

**How are the shared responsibilities formalized?** Total # of replies = 103

- Informal agreements between institutions - 67 (65%)
- Formal agreement at the national level - 40 (39%)
- Memorandum of Understanding between institutions internationally - 25 (24%)
- Other, please specify: - 12 (12%)

**Which institutions do you share responsibilities with mainly?** Total # of replies = 101

- Genebanks - 72 (71%)
- Public plant breeding institutions - 61 (60%)
- Private companies - 21 (21%)
- Other, please specify: - 14 (14%)

**6. What do you think would be the potential ADVANTAGES of establishing a system for sharing responsibilities for *ex situ* conservation with other European countries?** Total # of replies = 185

- Possibility to identify and reduce duplicates - 124 (67%)
- Increased accessibility to the germplasm (through increasing the visibility of collections and through an increase in requests for the germplasm) - 110 (59%)
- Increased trust on accessing material maintained in different institutions across Europe through strengthened relationships between institutes - 106 (57%)
- Safer long-term maintenance of European collections - 104 (56%)
- Reduced number of accessions for long-term management in individual collections - 100 (54%)
- Increased cost effectiveness at the European level - 94 (51%)
- Possibility to prioritize the accessions - 68 (37%)
- Other, please specify: - 11 (6%)

ADVANTAGES	Research Institute (national) = 105	Agricultural Genebank = 19	University = 27	Private breeding company = 14	Botanic Gardens = 14	NGOs = 6	Total = 185
Possibility to identify and reduce duplicates	77	13	13	9	8	4	124
Increased accessibility to the germplasm (through increasing the visibility of collections and through an	63	10	17	7	11	2	110

ADVANTAGES	Research Institute (national) = 105	Agricultural Genebank = 19	University = 27	Private breeding company = 14	Botanic Gardens = 14	NGOs = 6	Total = 185
increase in requests for the germplasm)							
Increased trust on accessing material maintained in different institutions across Europe through strengthened relationships between institutes	64	12	17	4	6	3	106
Safer long-term maintenance of European collections	64	7	16	5	11	1	104
Reduced number of accessions for long-term management in individual collections	61	11	13	6	6	3	100
Increased cost effectiveness at the European level	59	12	11	4	5	3	94
Possibility to prioritize the accessions	43	9	8	1	7	0	68
Other	7	1	2	0	1	0	11

**7. What in your opinion would be the potential DISADVANTAGES? Total # of replies = 171**

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- Risk of reduced access to a more restricted number of accessions - 91 (53%)
- Uneven quality standards for conservation activities throughout Europe - 85 (50%)
- Restrictions from OTHER national access legislations on the exchange of germplasm - 83 (48%)
- Reduced control over the conservation standards followed by the different genebanks - 68 (40%)
- Risk of reductions in funding and staff - 67 (39%)
- Restrictions from OWN national access legislation on the exchange of germplasm - 66 (38%)
- Other, please specify: - 8 (5%)

DISADVANTAGES	Research Institute (national) = 100	Agricultural Genebank = 18	University = 22	Private breeding company = 15	Botanic Gardens = 12	NGOs = 4	Total = 171
Risk of reduced access to a more restricted number of accessions	54	12	9	9	5	2	91
Uneven quality standards for conservation activities throughout Europe	52	8	9	7	7	2	85
Restrictions from OTHER national access legislations on the exchange of germplasm	42	12	9	11	8	1	83
Reduced control over the conservation standards followed by the different genebanks	49	8	5	3	1	2	68
Risk of reductions in funding and staff	41	10	9	3	2	2	67
Restrictions from OWN national access legislation on the exchange of germplasm	38	8	8	6	4	2	66
Other	5	1	0	0	1	1	8

### Potential options for a system of shared responsibilities for *ex situ* conservation in Europe

Please consider the following 3 options and evaluate their potential implementation:

#### **OPTION 1: Decentralized European collections, on an accession basis**

A number of ECP/GR Crop Working Groups have developed a concept for an accession-based sharing of conservation responsibilities among European institutions. This system is based on agreements among partners on the scope, conservation and regeneration standards. The conservation is divided between 3 types of responsibilities: the different **maintainers of germplasm**, the **maintainers of safety-duplicates** and the **central crop database managers**.

- 1) the **maintainers of germplasm (genebanks)**: ensure long-term conservation according to international standards, ensure that safety-duplicates are stored in another genebank, preferably within another country and provide access to the germplasm under terms agreed by ECP/GR Steering Committee. In agreement with all partners, the responsibility for the conservation and management of specific accessions on behalf of all ECP/GR partners is distributed among a number of "maintainer institutions".
- 2) the **maintainers of safety-duplicates**: maintain a sufficient quantity of safety-duplicated germplasm in long-term storage according to international standards and under a 'black-box' arrangement; ensure that the germplasm and related information are not exchanged and distributed; ensure that the germplasm is not used in any way even for viability tests and regeneration.
- 3) the **central crop database managers**: facilitate the repatriation of material by distributing information about accessions conserved in countries other than the country of origin; update the database and make it available either as a searchable and downloadable database on the Internet or on diskette; forward to the maintainers any request for seeds; provide information about the degree of safety-duplication of the collection.

#### **OPTION 2: Centralized European collections on a crop basis.**

Based on crop priorities of individual institutions, offers could be made to keep European collections "in trust" for all partner institutions in Europe. This approach could contribute to develop European "centres of excellence" for particular crops. Collections would be duplicated for safety at other genebanks under "black box" agreements. Examples of European crop collections that are maintained under this system on behalf of ECP/GR are:

- The seed *Allium* spp. by the UK
- The European field collection of long-day Alliums by the Czech Republic
- The European field collection of short-day Alliums by Israel
- The wild Brassicas and related wild relatives by Spain
- Cruciferous crops by the UK

#### **OPTION 3: Sub-regional collections.**

This option proposes that a number of countries share one central genebank for PGRFA, acting as a subregional programme of crop-specific breeding and conservation. This is currently the case of the Nordic Gene Bank, based in Sweden but holding germplasm on behalf of Denmark, Finland, Iceland, Norway and Sweden. This approach would completely integrate all activities involved in one joint subregional programme.

#### **OPTION 1: Decentralized PGR European collections, on an accession basis**

**8. Would you support the implementation of decentralized PGR European collections, on an accession basis? Total # of replies = 177**

- No - 22 (12%)
- Yes - 106 (60%)
- Yes, but ONLY for a number of crops - 51 (29%)
- Other, please specify: - 14 (8%)
- Total YES = 149 (84%) (8 responses said both Yes)

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- Less than 100 Accessions = 10/149 (7%)
- Between 100 - 500 Accessions = 31/149 (21%)
- Between 500 - 1000 Accessions = 22/149 (15%)
- Between 1000 - 5000 Accessions = 55/149 (37%)
- More than 5000 accessions = 27/149 (18%)

**Breakdown of reply to question 8 by type of institutions and size of collections (Yes= all YES replies)**

Type of organisations	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Other
Research Institute (national)	0	6	2	17	9	14	1	33	0	14	12	84	6
Agricultural Genebank	0	0	0	0	0	2	0	5	1	9	1	16	1
University	0	4	0	7	0	3	0	10	1	0	1	24	3
Private breeding company	0	0	1	5	2	2	1	2	0	1	4	10	0
Botanic Gardens	0	0	0	1	0	1	0	4	0	3	0	9	3
NGOs	0	0	4	1	0	0	0	1	0	0	4	2	1
<b>Total</b>	<b>0</b>	<b>10</b>	<b>7</b>	<b>31</b>	<b>11</b>	<b>22</b>	<b>2</b>	<b>55</b>	<b>2</b>	<b>27</b>	<b>22</b>	<b>145</b>	<b>14</b>

**Countries in favour of Option 1: Decentralized PGR European collections, on an accession basis**

Countries	Yes	% yes	No	% no	Other	Total
Albania	8	80	2	20	0	10
Armenia	4	100	0	0	0	4
Austria	8	89	1	11	0	9
Belgium	3	100	0	0	0	3
Bulgaria	7	100	0	0	0	7
Cyprus	1	100	0	0	0	1
Czech Republic	7	100	0	0	0	7
Denmark	3	60	2	40	0	5
Estonia	2	100	0	0	0	2
Finland	2	100	0	0	0	2
France	6	100	0	0	0	6
Georgia	0	-	0	-	0	0
Germany	7	78	1	11	1	9
Greece	7	100	0	0	0	7
Iceland	1	100	0	0	0	1
Ireland	1	50	1	50	0	2
Israel	1	25	1	25	2	4
Italy	12	86	1	7	1	14
Latvia	0	0	1	100	0	1
Lithuania	6	100	0	0	0	6
Moldova	5	100	0	0	0	5
Norway	4	67	1	17	1	6
Poland	7	100	0	0	0	7
Portugal	0	-	0	-	0	0
Romania	9	90	1	10	0	10
Russian Federation	0	-	0	-	0	0

Countries	Yes	% yes	No	% no	Other	Total
Slovakia	12	75	4	25	0	16
Slovenia	4	100	0	0	0	4
Spain	5	71	2	29	0	7
Switzerland	3	75	1	25	0	4
Turkey	0	0	1	100	0	1
Ukraine	1	100	0	0	0	1
United Kingdom	6	75	1	12	1	8
Yugoslavia, F. R.	7	88	1	12	0	8
<b>Total</b>	<b>149</b>	<b>84%</b>	<b>22</b>	<b>12%</b>	<b>6</b>	<b>177</b>

9. What would be the main **ADVANTAGES** of this option? Total # of replies = 158

- Safer long-term maintenance of European collections - 102 (64%)
- Possibility to identify and reduce duplicates - 91 (58%)
- Increased trust on accessing material maintained in different institutions across Europe - 86 (54%)
- Cost-effectiveness - 72 (46%)
- Reduction in the number of accessions for long-term management to a manageable number - 71 (45%)
- Possibility to prioritize the accessions - 49 (31%)
- Other, please specify - 7 (4%): *See notes at the end of the questionnaire.*

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ADVANTAGES	Research Institute (national) = 87	Agricultural Genebank = 18	University = 27	Private breeding company = 14	Botanic Gardens = 8	NGOs = 4	Total = 158
Safer long-term maintenance of European collections	61	9	20	4	7	1	102
Possibility to identify and reduce duplicates	57	12	12	4	3	3	91
Increased trust on accessing material maintained in different institutions across Europe	49	10	16	5	6	0	86
Cost-effectiveness	43	10	11	4	1	3	72
Reduction in the number of accessions for long-term management to a manageable number	45	8	9	5	2	2	71
Possibility to prioritize the accessions	26	9	7	4	3	0	49
Other	3	2	1	0	1	0	7

10. What would be the main **DISADVANTAGES** of this option? Total # of replies = 151

- Uneven quality standards for conservation activities throughout Europe - 88 (58%)
- Risk of reduced access to a restricted number of accessions - 72 (48%)
- Approval at governmental level might be difficult to achieve - 65 (43%)
- Restrictions to quality control of the conservation standards - 49 (32%)
- Risk of reductions in funding and staff - 45 (30%)
- Other, please specify: - 11 (7%) *See notes at the end of the questionnaire.*

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DISADVANTAGES	Research Institute (national) = 87	Agricultural Genebank = 19	University = 24	Private breeding company = 10	Botanic Gardens = 7	NGOs = 4	Total = 151
Uneven quality standards for conservation activities throughout Europe	52	8	15	5	6	2	88
Risk of reduced access to a restricted number of accessions	39	10	12	6	3	2	72
Approval at governmental level might be difficult to achieve	41	10	7	1	4	2	65
Restrictions to quality control of the conservation standards	34	5	4	3	3	0	49
Risk of reductions in funding and staff	30	8	5	1	0	1	45
Other	6	1	2	0	1	1	11

**11. Would your institute be able to support this option?** Total # of replies = 161

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- No - 34 (21%)
- Yes, provided previous institutional approval has been obtained - 90 (56%)
- Yes, provided previous governmental approval has been obtained - 63 (39%)
- Other, please specify: - 10 (6%)
- Total of YES = 124 (77%)
- Less than 100 Accessions = 8/124 (6%) **Note:** over a total of 123
  - Between 100 - 500 Accessions = 27/124 (22%)
  - Between 500 - 1000 Accessions = 19/124 (15%)
  - Between 1000 - 5000 Accessions = 45/124 (36%)
  - More than 5000 accessions = 24/124 (20%)

Type of organisations	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total		
	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	NO	YES	Other
Research Institute (national)	1	6	1	16	7	11	3	30	1	12	13	75	6
Agricultural Genebank	0	0	0	0	0	2	1	4	1	9	2	15	1
University	2	2	2	6	0	3	2	8	1	0	7	19	1
Private breeding company	0	0	2	3	2	2	1	0	0	1	5	6	0
Botanic Gardens	0	0	0	1	0	1	0	3	0	2	0	7	2
NGOs	0	0	3	1	0	0	1	0	0	0	4	1	0
<b>Total</b>	<b>3</b>	<b>8</b>	<b>8</b>	<b>27</b>	<b>9</b>	<b>19</b>	<b>8</b>	<b>45</b>	<b>3</b>	<b>24</b>	<b>31</b>	<b>123</b>	<b>10</b>

**If YES, how would you support this option?** Total # of replies = 125

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- By sending safety-duplicate samples to a different genebank - 83 (66%)
- By assuming responsibility as germplasm maintainers - 82 (66%)
- By assuming responsibility as a genebank maintaining safety-duplicates - 47 (38%)
- By assuming responsibility as a central database manager - 35 (28%)
- Other, please specify: - 8 (6%)



**OPTION 2: Centralized PGR European collections on a crop basis**

12. Would you support this option for additional European crop collections? Total # of replies = 155

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- No - 62 (40%)
- Yes - 29 (19%)
- Yes, but ONLY for a number of crops - 62 (40%)
- Other, please specify: - 9 (6%)
- Total YES = 89 (57%)
- Less than 100 Accessions = 2/89 (2%)
  - Between 100 - 500 Accessions = 19/89 (21%)
  - Between 500 - 1000 Accessions = 13/89 (15%)
  - Between 1000 - 5000 Accessions = 33/89 (37%)
  - More than 5000 accessions = 20/89 (22%)

Breakdown of reply to question 12 by type of institutions and size of collections (Yes= all YES replies)

Type of organisations	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Other
Research Institute (national)	3	2	6	13	10	10	8	23	5	9	32	57	3
Agricultural Genebank	0	0	0	0	1	0	1	3	2	7	4	10	3
University	3	0	4	2	2	1	5	5	0	1	14	9	2
Private breeding company	0	0	2	3	0	2	1	1	0	1	3	7	0
Botanic Gardens	0	0	3	0	0	0	0	0	0	2	3	2	1
NGOs	0	0	3	1	2	0	0	1	0	0	5	2	0
<b>Total</b>	<b>6</b>	<b>2</b>	<b>18</b>	<b>19</b>	<b>15</b>	<b>13</b>	<b>15</b>	<b>33</b>	<b>7</b>	<b>20</b>	<b>61</b>	<b>87</b>	<b>9</b>

Countries in favour of Option 2: Centralized PGR European collections on a crop basis

Countries	Yes	% yes	No	% no	Other	Total
Albania	4	50	4	50	0	8
Armenia	3	75	1	25	0	4
Austria	3	38	5	62	0	8
Belgium	1	33	2	67	0	3
Bulgaria	4	57	3	43	0	7
Cyprus	1	100	0	0	0	1
Czech Republic	4	57	3	43	0	7
Denmark	2	50	2	50	0	4
Estonia	2	100	0	0	0	2
Finland	0	0	1	100	0	1
France	2	40	3	60	0	5
Georgia	0	-	0	-	0	0
Germany	4	50	3	38	1	8
Greece	3	100	0	0	0	3
Iceland	1	100	0	0	0	1

Countries	Yes	% yes	No	% no	Other	Total
Ireland	2	100	0	0	0	2
Israel	1	33	1	33	1	3
Italy	5	36	9	64	0	14
Latvia	0	0	1	100	0	1
Lithuania	4	67	2	33	0	6
Moldova	4	100	0	0	0	4
Norway	2	33	4	67	0	6
Poland	3	43	4	57	0	7
Portugal	0	-	0	-	0	0
Romania	2	50	2	50	0	4
Russian Federation	0	-	0	-	0	0
Slovakia	11	73	4	27	0	15
Slovenia	4	100	0	0	0	4
Spain	5	71	2	29	0	7
Switzerland	3	100	0	0	0	3
Turkey	1	100	0	0	0	1
Ukraine	1	100	0	0	0	1
United Kingdom	2	28	3	43	2	7
Yugoslavia, F. R.	5	62	3	38	0	8
<b>Total</b>	<b>89</b>	<b>57%</b>	<b>62</b>	<b>40%</b>	<b>4</b>	<b>155</b>

**13. What would be the main ADVANTAGES of this option?** Total # of replies = 114

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- Possibility to identify and reduce duplicates - 74 (65%)
- Cost-effectiveness - 66 (58%)
- Safer long-term maintenance of European collections - 50 (44%)
- Reduction in the number of accessions for long-term management to a manageable number - 48 (42%)
- Increased trust on accessing material maintained in different institutions across Europe - 39 (34%)
- Possibility to prioritize the accessions - 38 (33%)
- Other, please specify: - 6 (5%)

ADVANTAGES	Research Institute (national) = 68	Agricultural Genebank = 14	University = 18	Private breeding company = 9	Botanic Gardens = 3	NGOs = 2	Total = 114
Possibility to identify and reduce duplicates	47	11	11	2	2	1	74
Cost-effectiveness	45	8	8	2	1	2	66
Safer long-term maintenance of European collections	28	7	8	4	2	1	50
Reduction in the number of accessions for long-term management to a manageable number	34	6	5	2	0	1	48
Increased trust on accessing material maintained in different institutions across Europe	23	4	8	1	3	0	39
Possibility to prioritize the accessions	22	7	5	3	1	0	38
Other	2	2	1	0	0	0	5

**14. What would be the main DISADVANTAGES of this option?** Total # of replies = 121

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- Risk of reduced access to a restricted number of accessions - 75 (62%)
- Risk of reductions in funding and staff - 57 (47%)
- Approval at governmental level might be difficult to achieve - 48 (40%)
- Restrictions to quality control of the conservation standards - 38 (31%)
- Uneven quality standards for conservation activities throughout Europe - 37 (30%)
- Other, please specify: - 15 (12%)

DISADVANTAGES	Research Institute (national) = 70	Agricultural Genebank = 16	University = 20	Private breeding company = 9	Botanic Gardens = 3	NGOs = 3	Total = 121
Risk of reduced access to a restricted number of accessions	43	8	14	6	1	3	75
Risk of reductions in funding and staff	33	8	8	5	2	1	57
Approval at governmental level might be difficult to achieve	33	8	4	2	0	1	48
Restrictions to quality control of the conservation standards	22	4	5	5	1	1	38
Uneven quality standards for conservation activities throughout Europe	24	3	6	2	1	1	37
Other	9	1	3	0	1	1	15

15. Would your institute be able to support this option? Total # of replies = 133

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- No - 66 (50%)
- Yes, provided previous institutional approval has been obtained - 47 (35%)
- Yes, provided previous governmental approval has been obtained - 39 (29%)
- Other, please specify: - 1 (1%)
- Total YES = 66 (50%)
- Less than 100 Accessions = 1/66 (2%)
  - Between 100 - 500 Accessions = 13/66 (20%)
  - Between 500 - 1000 Accessions = 11/66 (17%)
  - Between 1000 - 5000 Accessions = 25/66 (38%)
  - More than 5000 accessions = 15/66 (23%)

Type of organisations	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Other
Research Institute (national)	3	1	4	10	8	10	10	16	6	5	31	42	1
Agricultural Genebank	0	0	0	0	1	0	1	3	1	8	3	11	0
University	2	0	6	0	2	1	4	5	0	1	14	7	0
Private breeding company	0	0	4	2	4	0	1	0	1	0	10	2	0
Botanic Gardens	0	0	0	0	0	0	1	1	1	1	2	2	0
NGOs	0	0	3	0	0	0	1	0	0	0	4	0	0
<b>Total</b>	<b>5</b>	<b>1</b>	<b>17</b>	<b>12</b>	<b>15</b>	<b>11</b>	<b>18</b>	<b>25</b>	<b>9</b>	<b>15</b>	<b>64</b>	<b>64</b>	<b>1</b>

If YES, how would you support this option? Total # of replies = 61

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- By delegating responsibility for the conservation of specific accessions to existing and newly established central collections - 39 (64%)
- By assuming responsibility on behalf of ECP/GR for the maintenance and distribution to *bona fide* users of a specific crop collection - 35 (57%)
- Other, please specify: - 2 (3%)

### OPTION 3: Sub-regional PGR collections

16. Would you support this option in your sub-region of Europe? Total # of replies = 162

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- No - 43 (26%)
- Yes - 42 (26%)
- Yes, but ONLY for base collections (Not for distribution) - 32 (20%)
- Yes, but ONLY for a number of crops - 55 (34%)
- Other, please specify: - 4 (2%)
- Total YES = 116 (72%)
- Less than 100 Accessions = 6/116 (5%)
  - Between 100 - 500 Accessions = 27/116 (23%)
  - Between 500 - 1000 Accessions = 19/116 (16%)
  - Between 1000 - 5000 Accessions = 42/116 (36%)
  - More than 5000 accessions = 19/116 (16%)

#### Breakdown of reply to question 16 by type of institutions and size of collections (Yes= all YES replies)

Type of organisations	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Other
Research Institute (national)	1	4	4	14	6	15	8	23	5	10	24	66	1
Agricultural Genebank	0	0	0	0	1	0	0	5	4	6	5	11	0
University	1	2	1	4	2	1	2	8	1	0	7	15	2
Private breeding company	0	0	2	4	2	2	0	3	1	0	5	9	0
Botanic Gardens	0	1	0	2	0	0	1	2	0	3	1	8	1
NGOs	0	0	1	3	0	1	0	1	0	0	1	5	0
<b>Total</b>	<b>2</b>	<b>7</b>	<b>8</b>	<b>27</b>	<b>11</b>	<b>19</b>	<b>11</b>	<b>42</b>	<b>11</b>	<b>19</b>	<b>43</b>	<b>114</b>	<b>4</b>

#### Countries in favour of Option 3: Sub-regional PGR collections

Countries	Yes	% yes	No	% no	Other	Total
Albania	7	88	1	12	0	8
Armenia	4	80	1	20	0	5
Austria	3	33	5	56	1	9
Belgium	2	67	1	33	0	3
Bulgaria	7	100	0	0	0	7
Cyprus	0	0	1	100	0	1
Czech Republic	5	71	2	29	0	7
Denmark	4	100	0	0	0	4

Countries	Yes	% yes	No	% no	Other	Total
Estonia	2	100	0	0	0	2
Finland	2	100	0	0	0	2
France	2	67	3	33	0	5
Georgia	0	-	0	-	0	0
Germany	1	12	7	88	0	8
Greece	2	67	1	33	0	3
Iceland	1	100	0	0	0	1
Ireland	1	50	1	50	0	2
Israel	2	67	0	0	1	3
Italy	9	64	5	36	0	14
Latvia	1	100	0	0	0	1
Lithuania	6	100	0	0	0	6
Moldova	5	100	0	0	0	5
Norway	5	83	0	17	1	6
Poland	4	67	2	33	0	6
Portugal	0	-	0	-	0	0
Romania	2	50	2	50	0	4
Russian Federation	1	100	0	0	0	1
Slovakia	16	89	2	11	0	18
Slovenia	4	100	0	0	0	4
Spain	4	57	3	43	0	7
Switzerland	3	75	1	25	0	4
Turkey	0	0	1	100	0	1
Ukraine	1	100	0	0	0	1
United Kingdom	4	67	2	33	0	6
Yugoslavia, F. R.	6	75	2	25	0	8
<b>Total</b>	<b>116</b>	<b>72%</b>	<b>43</b>	<b>26%</b>	<b>3</b>	<b>162</b>

## 17. What would be the main ADVANTAGES of this option? Total # of replies = 133

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- Cost-effectiveness - 72 (54%)
- Possibility to identify and reduce duplicates - 67 (50%)
- Safer long-term maintenance of European collections - 67 (50%)
- Reduction in the number of accessions for long-term management to a manageable number - 58 (44%)
- Possibility to prioritize the accessions - 51 (38%)
- Increased trust on accessing material maintained in different institutions across Europe - 46 (34%)
- Other, please specify: - 4 (3%)

ADVANTAGES	Research Institute (national) = 75	Agricultural Genebank = 15	University = 21	Private breeding company = 11	Botanic Gardens = 6	NGOs = 5	Total = 133
Cost-effectiveness	48	9	10	0	2	3	72
Possibility to identify and reduce duplicates	40	9	11	4	1	2	67
Safer long-term maintenance of European collections	42	5	7	6	4	3	67
Reduction in the number of accessions for long-term management to a manageable number	35	6	8	4	2	3	58
Possibility to prioritize the	31	6	7	4	2	1	51

ADVANTAGES	Research Institute (national) = 75	Agricultural Genebank = 15	University = 21	Private breeding company = 11	Botanic Gardens = 6	NGOs = 5	Total = 133
accessions							
Increased trust on accessing material maintained in different institutions across Europe	30	4	6	2	4	0	46
Other	2	0	0	0	1	1	4

18. What would be the main DISADVANTAGES of this option? Total # of replies = 122

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- Risk of reduced access to a restricted number of accessions - 56 (46%)
- Approval at governmental level might be difficult to achieve - 56 (46%)
- Uneven quality standards for conservation activities throughout Europe - 52 (43%)
- Risk of reductions in funding and staff - 43 (35%)
- Restrictions to quality control of the conservation standards - 38 (31%)
- Other, please specify: - 9 (7%)

DISADVANTAGES	Research Institute (national) = 68	Agricultural Genebank = 18	University = 16	Private breeding company = 12	Botanic Gardens = 5	NGOs = 3	Total = 122
Risk of reduced access to a restricted number of accessions	30	9	9	6	0	2	56
Approval at governmental level might be difficult to achieve	37	11	3	1	3	1	56
Uneven quality standards for conservation activities throughout Europe	31	4	9	4	4	0	52
Risk of reductions in funding and staff	22	8	4	5	2	2	43
Restrictions to quality control of the conservation standards	23	2	6	5	2	0	38
Other	5	2	2	0	0	0	9

19. Would your institute be able to support the establishment of a sub-regional genebank? Total # of replies = 138

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- No - 52 (38%)
- Yes, provided previous institutional approval has been obtained - 64 (46%)
- Yes, provided previous governmental approval has been obtained - 42 (30%)
- Other, please specify: - 5 (4%)
- Total YES = 87 (63%)
- Less than 100 Accessions = 4/87 (4%)
  - Between 100 - 500 Accessions = 20/87 (23%)
  - Between 500 - 1000 Accessions = 15/87 (17%)
  - Between 1000 - 5000 Accessions = 30/87 (34%)
  - More than 5000 accessions = 17/87 (20%)

Type of organisations	< 100 accessions		100 - 500 accessions		500 - 1,000 accessions		1,000 - 5,000 accessions		> 5,000 accessions		Total		
	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	No	Yes	Other
Research Institute (national)	3	3	3	9	4	13	12	16	4	8	26	49	5
Agricultural Genebank	0	0	0	0	1	0	1	4	3	7	5	11	0
University	1	1	1	4	2	1	1	7	1	0	6	13	0
Private breeding company	0	0	2	4	3	1	3	0	0	0	8	5	0
Botanic Gardens	0	0	0	1	0	0	2	3	1	2	3	6	0
NGOs	0	0	0	2	1	0	1	0	0	0	2	2	0
<b>Total</b>	<b>4</b>	<b>4</b>	<b>6</b>	<b>20</b>	<b>11</b>	<b>15</b>	<b>20</b>	<b>30</b>	<b>9</b>	<b>17</b>	<b>50</b>	<b>86</b>	<b>5</b>

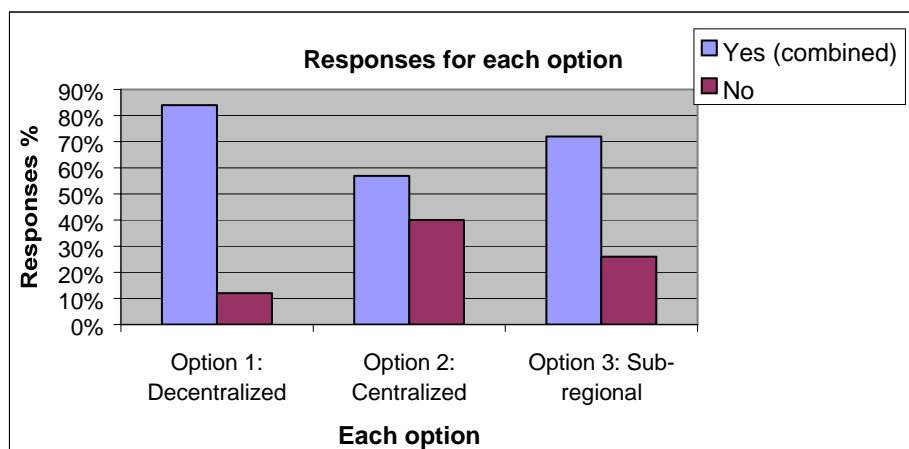
If YES, how would you support this option? Total # of replies = 83

- By sending safety-duplicate samples to the sub-regional genebank - 52 (63%)
- By assuming responsibility for the maintenance of germplasm - 49 (59%)
- By assuming responsibility safety-duplication of the germplasm - 28 (34%)
- Other, please specify: - 4 (5%)

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Responses for each options:

	Option 1: Decentralized	Option 2: Centralized	Option 3: Sub-regional
Yes (combined)	84%	57%	72%
No	12%	40%	26%

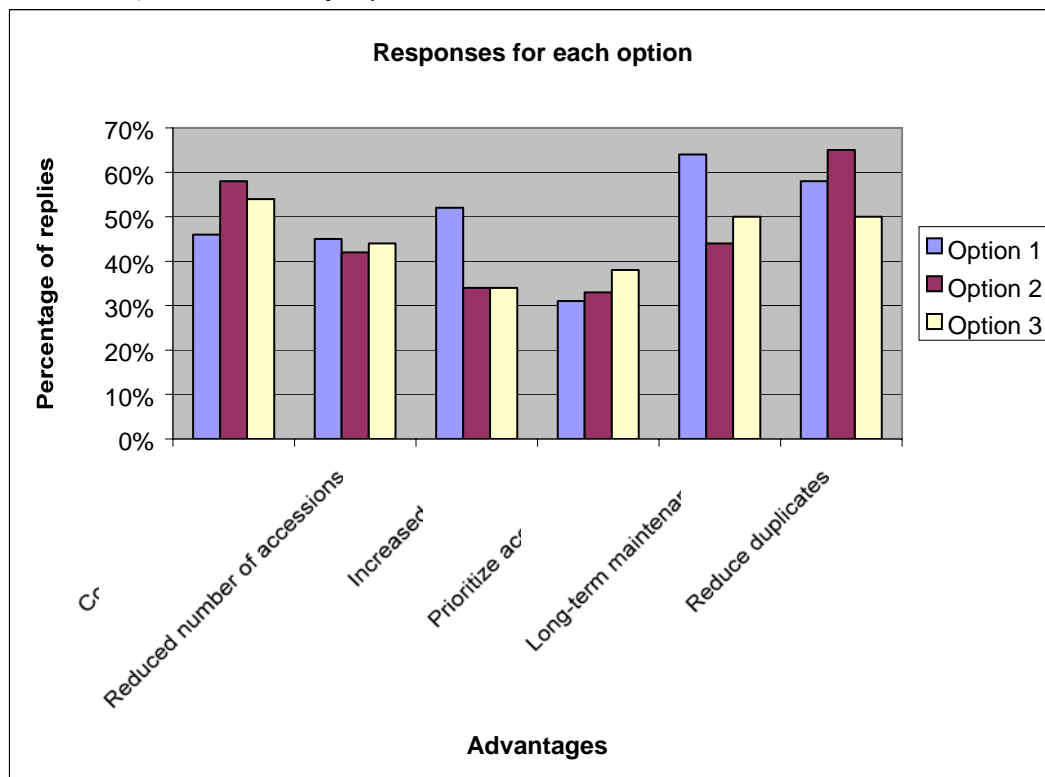


#### Summary of the three options for the ADVANTAGES and DISADVANTAGES

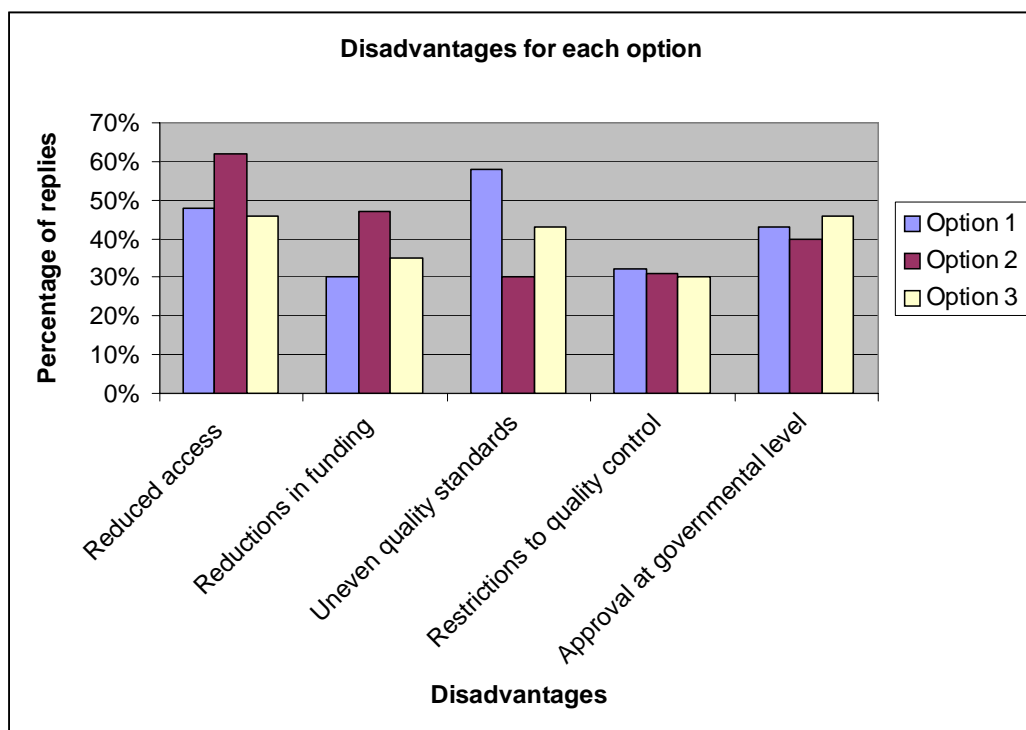
1. **OPTION 1:** Decentralized PGR European collections, on an accession basis
2. **OPTION 2:** Centralized PGR European collections on a crop basis
3. **OPTION 3:** Sub-regional PGR collections

ADVANTAGES	Option 1	Option 2	Option 3
Cost-effectiveness	46%	58%	54%
Reduction in the number of accessions for long-term management to a manageable number	45%	42%	44%
Increased trust on accessing material maintained in different institutions across Europe	54%	34%	34%
Possibility to prioritize the accessions	31%	33%	38%
Safer long-term maintenance of European collections	64%	44%	50%
Possibility to identify and reduce duplicates	58%	65%	50%





DISADVANTAGES	Option 1	Option 2	Option 3
Risk of reduced access to a restricted number of accessions	48%	62%	46%
Risk of reductions in funding and staff	30%	47%	35%
Uneven quality standards for conservation activities throughout Europe	58%	30%	43%
Restrictions to quality control of the conservation standards	32%	31%	31%
Approval at governmental level might be difficult to achieve	43%	40%	46%



Notes:

4. Please indicate your area of interest related to *ex situ* conservation and use in order of importance, where: 0 = not important; 1 = important; 2 = very important

Q4-Other	Q4-Other-notes
2	charaterisation
2	testing any plant in our climate
2	seed production for farmers
2	Research into conservation techniques and loss of genetic material
2	conservation distribution of research PGR
2	evaluation and characterization, use in breeding and other programmes
2	conservation (international) germplasm
2	conservation of foreign varieties, conservation of wild varieties
2	breeding, reseach, evaluation
1	give to breeders on request

	Q5-AgreeOther-notes
1.	scientific growing trial agreement
2.	personal contact
3.	informal through ECP/GR WG on forages meetings
4.	grant from CEEM(USA) for VIR wild species reconstr
5.	formal agreements between institutions
6.	formal agreement: ECP/GR

<b>Q5-AgreeOther-notes</b>	
7.	formal agreement between Germany and Netherlands
8.	European cost action N. 836
9.	European Community Contract Resgen 113
10.	ECP/GR agreement
11.	cooperation within National Programme
12.	cooperation under auspicion of IPGRI

<b>Q5-inst-Other-notes</b>	
1.	Universities and research institutions
2.	research laboratories
3.	research institutions
4.	public research institutes
5.	private companies plant breeding
6.	private companies only inside our country
7.	NGO's
8.	NGO
9.	NGO
10.	FAO
11.	European Data Base
12.	Botanical Gardens
13.	Botanical Garden, University
14.	arboreta and botanical gardens

<b>Q6-Other-notes</b>	
there should be a EU based in vitro collection as a back up to collection of potatoes supported by EU	
stimulation of an active collaboration between countries	
sharing databases	
resolved the financial problem for collections	
overviews and database connection, availability	
only for grapevine collection	
more cohesion across the PGR community in Europe	
Mainly increased accessibility to the germplasm	
keep European list and small national collections	
increasing collaboration and scientific studies reducing workload for testing viability	
increased status and importance of our collections	
increased information about the germplasm	
greater attention to be paid to the visibility of collections and the latest breeding material	
ex situ conservation of national collections and not all genetic resources collections	
although it may be desirable to reduce duplicates fruit germplasm is maintained in field genebanks so this would increase risk.	
all seem obvious	

<b>Q7-Other-notes</b>	
the problems in maintaining and evaluation could be caused by unadapated environmental (climatical) conditions for some accessions (especially local landraces) in different climatic zone.	
risk to have less "vaulable material" in these collections	
phytosanitary problems	
patent taking	
only for grapevine collection	
loss of acc. Determined as "duplicates"	

Q7-Other-notes
less duplicates so less safe long-term prospects
I do not see disadvantages but the national legislations of the different European countries must be harmonized. It is essential that Europe has a common policy for GR.
difference in climatic adaptation for landraces/troubles in the countries or changing Institutions status
all seem obvious

Q8-Other-notes
yes, preferably if the maintaining institute is also the collecting institute
yes, partly (some few distinct crops)
yes, only for rice
yes, but only for those which have been already evaluated
where seed or in vitro storage is difficult or inconvenient and where field collection is the best way. Also where preservation of genetic variability is intended. For keeping local clone archives or inventories. 1st line collections.
we are not sure what this implement but we would be positive
unrelevant to us, as our genebank deals entirely with wild accessions
surely appropriate solutions will vary crop to crop?
see attached letter
Possibility for wild species of solanum
only for a number of crops and not for all types of material, eg. Not for genetic stocks
for potato collection
Citrus
all these options are not very relevant to bananas
a central genebank responsible for the storage of safety duplicates should be founded. A network of decentralised national genebanks would run the active collections and share responsibilities according to option 1 or 2 or a combination of both

Q9-Other-notes
the system is flexible. As the "owners" of GR are not only genebanks, but often Breeding & Research Institutions which currently use the GR, they must be involved in the process -> decentralized European coll.
best option for efficient utilization
strengthening of "political" position of collection holder and safeguarding survival of smaller, but important collections through better visibility of work
close collaboration within European institutions
preservation of inherent genetic variation and continued evolution. Clone archives on a local scale (local inventories).
maintenance at different climatic conditions
help in exact taxonomical determination of dubious germplasm samples

Q10-Other-notes
as per question 7
depends on (different) national policies
efficiency of the system
harmonize PGR legislation at the European level
if the system does not work well national collections are endangered. National resources will set limits to active participation
less crop specific knowledge if dealing with a lot of crops
maintainers might lack detailed expertise or working knowledge of material that they sign up to the current holders
no disadvantage

<b>Q10-Other-notes</b>
possibly higher costs
risk of wrong prioritizing of accessions
uneven size of collection might lead to (unrectified) ranking (which is not paralleled by scientific accuracy)
option 1, see others n.8

<b>Q11-Other-notes</b>
yes, provided sponsor and contractee approval obtained
yes, provided proper funding could be obtained
yes, partly (central crop data management)
yes, on condition that to be approved the necessary running and infrastructure
yes, for specific crops
yes, but only if supported by external financial resources
yes via the BRG
yes
the above has to be checked
possible, but must be confirmed
no decision before successful conclusions of revision of the IU and development of an EU strategy
my opinion
I hope yes, decision is taken by the director of IHAR
for genus vitis
for eggplants the system is working presently CEU contract
depending on funds available
and provided adequate fundings are found
a preparatory process

<b>Q11-YesOther-notes</b>
subject to NGB decision
staff required
my opinion
I don't have the conservation facilities of a gene abnk
germplasm maintainer for species preeminently conserved within botanical gardens
depending on budget: facilities available
depending of the crop
chairing? of crop specific networks
by our collection samples availability

<b>Q12-Other-notes</b>
yes, only for rice
yes, for genetic stocks
yes if considered so by our central institutions
yes but only in limited cases. Would need to be considered on a case by case basis
unrelevant, we deal only with wild plants
Tomato
this method would probably not be suitable for material maintained in field genebanks because plants adapted to different climatic conditions around Europe would have to be cultivated in one location.
the one which have a very low economic impact all through Europe and for which only few insitutuions are maintaining genetic resources
the accessions of selected can be maintained in designated genebanks in good conditions but core collections of accessions of selected crops should be determined. This option should be in harmony with National legislations and international agreement

**Q12-Other-notes**

surely appropriate solutions will vary crop to crop

only for a number of crops, for which it is necessary to create an European Collection, more for small collection of a special crop: eg. Neglected crops

number of crops, i.e. potatoes

not for eggplant. Good option for the crops which are suitable for this kind of managements, This depends on criteria specific to the biology of the crop, and to the nature of its G.resources (difficulty of maintenance)

no, biological factors

for certain crops this would obviously be the only sensible way, i.e. will the characterization and preservation of clones or accessions require advanced techniques or skills

Citrus

A central genebank responsible for the storage of safety duplicates should be founded. A network of decentralised national genebanks would run the active collections and share responsibilities according to option 1 or 2 or a combination of both

**Q13-Other-notes**

more exact taxonomical determination of dubious germplasm samples

increased knowlege and information about germplasm of specific crops

holding institute presumably interested in the crop

creation of centres of excellence for selected crops. Easy access to materials and documentation.

cost effective conservation only

achievement of high quality of conservation standard

**Q14-Other-notes**

This opinion is hardly functional because of the different climatical conditions

the risk of placing all your eggs in one basket

The institution in charge of a given European centralized collection MUST have the financial support needed.

risk to "loose" a "whole collection" in case of badly runned institutions

Risk of loosing local support

not a general model otherwise why would European countries still maintain collections when world collection were nominally set up eg. Wheat.

no disadvantage

main purpose of institute isn't conservation

loss of genotypes not adapted to climatic conditions

inefficient cost ineffective utilisation/ bad genetic conservation standards

find "centres of excellence" with national long-term budget for germplasm conservation considering different crops

concentration of important crops in big genebanks

climate

changing priorities or funding might have drastic consequences for the survival of those "core" collections

a lot of species can't be regenerated in some areas of the European Region. The centralisation is then inefficient for some crops.

"loss" of responsibility for "own" germplasm

**Q15-YesOther-notes**

depending on budget

chairing of crop specific networks

**Q16-Other-notes**

yes, only for rice

vitis

**Q16-Other-notes**

unrelevant
the least acceptable model.
see attached letter
Nordic countries already have subregional genbank
No, but could be compatible with other countries
interesting for regional crops (see comments)
in very limited cases only
clone archives and ex situ conservation
Citrus

**Q17-Other-notes**

very low for breeding
this can be a good system for specific crops codes.
probably the only feasible option for keeping a local perspective on conservation and at the same time maintaining institutions of a size sufficient for proper handling and documentation of the collections
possibility for NGO's to establish contact with the collection
cost effective conservation only

**Q18-Other-notes**

unfavorable possibilities to prioritize the accessions
to avoid duplicates close cooperation between banks is needed. Quality standards agreed between countries
no disadvantage
make sure that the institution in charge of the subregional PGR collection has enough financial support
loss of diversity in collections might occur
longer distance to central European collections from local holdings of PGR
limited national funding for active gene bank work may become a problem
inefficient, expensive utilisation
FAO attempted to establish PGR collections in the 70ies. Except for the NGB none of the proposed regional centres became functioning. Have the conditions in Europe changed since 1972 so that we can really expect enough support for option 3.....
different financial conditions

**Q19-Other-notes**

yes, we already have cooperation through NGB
yes
very doubtful
sub-regional "Nordic Gene Bank" was established in 1979
No, I don't think so in my subregion. I do think so for other sub-regions which feel more comfortable with such systems
no for eggplant.
no final decision on this point

MAILING OF QUESTIONNAIRES

Country	# inst.	# copies sent to NC	# quest. received	Rate of reply (%)
Albania	10	10	10	
Armenia		1	5	
Austria	10	10	9	
Belgium	14	2	3	
Bulgaria	6	6	7	
Cyprus	1	1	1	
Czech Republic	15	15	7	
Denmark	5	5	6	
Estonia	2	2	2	
Finland	3	3	3	
France	55	2	7	
Georgia		1	1	
Germany	36	2	8	
Greece	13	13	7	
Iceland		1	1	
Ireland	9	9	3	
Israel	11	11	4	
Italy	32	2	14	
Latvia	8	8	1	
Lithuania	7	7	6	
Moldova		1	6	
Norway	13	2	8	
Poland	20	20	8	
Portugal	31	2	0	
Romania	11	11	11	
Russian Federation	1	1	1	
Slovakia	18	18	19	
Slovenia	3	3	4	
Spain	31	2	7	
Switzerland	18	2	6	
Turkey	15	15	1	
Ukraine	44	44	1	
United Kingdom	23	2	8	
Yugoslavia	14	14	8	
<b>TOTAL - 34 countries</b>	<b>537</b>	<b>293</b>	<b>193</b>	



Country	# inst.	# copies sent to NC	# quest. received	Rate of reply (%)
Azerbaijan		1	0	
<b>Belarus</b>		<b>1</b>	<b>0</b>	
Croatia	14	14	0	
Hungary	20	20	0	
Macedonia	1	1	0	
Malta		1	0	
The Netherlands	18	2	0	
Sweden	5	5	0	
<hr/> <i>TOTAL - 8 countries</i> <hr/>				