



Networking on conservation and use of plant genetic resources in Europe and Asia

**Briefing Paper**  
**for the First DIVERSEEDS International Meeting**

Tuesday 04 – Friday 07 December 2007

Bioversity International, Rome, Italy

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<b>1. CONTEXT OF THE FIRST INTERNATIONAL MEETING</b>	<b>2</b>
<b>2. MEETING OBJECTIVES</b>	<b>2</b>
2.1. DISCUSSION WITH TREATY SECRETARIAT	2
2.2. MEETING WITH THE ECPGR INTER-REGIONAL COOPERATION NETWORK	3
2.3. PRESENTATION OF REGIONAL WORKSHOPS	3
2.4. TECHNICAL WORKSHOP	3
2.5. SELECTION OF KEY ISSUES FOR INTER-REGIONAL DISCUSSION	3
2.6. BREAKOUT WORKING GROUPS	3
2.7. E-CONFERENCE (OPEN DISCUSSION)	4
2.8. PUBLIC AWARENESS ACTIVITIES	4
2.9. FUTURE WORKSHOPS AND MEETINGS	4
<b>ANNEX</b>	<b>5</b>
ANNEX 1: PRELIMINARY ASSIGNMENT OF MEETING PARTICIPANTS TO BREAKOUT WORKING GROUPS	5
ANNEX 2: LIST OF PGR ISSUES OF THE THREE REGIONS AND MEAN JUDGEMENT VALUES.	6
ANNEX 3: ASSIGNMENT OF ISSUES TO THE THREE BREAKOUT WORKING GROUPS.	12

## **1. Context of the First International Meeting**

The first DIVERSEEDS international meeting will bring all DIVERSEEDS project partners together. The meeting therefore provides an opportunity to intensify our inter-regional discussion on issues regarding conservation and use of plant genetic resources (PGR). It was clear that before the three involved regions start interacting with each other, it was necessary for them to have intra-regional discussions first. Three regional workshops took place, one in Europe (Slovenia, 6 October 2007), one in China (Beijing, 18 September 2007) and one in SE Asia (Hanoi, 28 September 2007). The outcome of all three regional workshops will be discussed and taken forward at the DIVERSEEDS First International Meeting. This procedure ensures that we agree on intra-regional issues first (regional workshops) and then discuss inter-regional issues (international meeting). As the term 'networking' in the project title indicates, the aim of DIVERSEEDS is not to discuss a particular topic but 'to establish a communication platform, and to promote knowledge exchange on genetic resources' that will facilitate collaboration between the regions. The final selection of key issues for inter-regional dialogue has therefore to be made in order to meet these requirements.

## **2. Meeting objectives**

The specific objectives of the first DIVERSEEDS international meeting are to:

1. Introduce DIVERSEEDS team members and external advisory board to each other.
2. Update participants on project activities and progress.
3. Discuss the International Treaty on Plant Genetic Resources for Food and Agriculture with the Secretariat of the Governing Body of the Treaty.
4. Have a joint meeting with the ECPGR Inter-Regional Cooperation Network and Bioversity.
5. Present and discuss the first round of regional workshops and their respective list of PGR issues.
6. Carry out a technical workshop consisting of four presentations.
7. Select key issues for inter-regional discussion.
8. Prioritize and define next steps for key issues.
9. Discuss the aims and requirements of the DIVERSEEDS electronic conference.
10. Discuss our public awareness activities.
11. Review plans for future workshops and meetings.
12. Attend to reporting and other administrative matters.

Some of these objectives are briefly introduced here:

### **2.1. Discussion with Treaty Secretariat**

We will meet with staff of the Secretariat of the Governing Body of the International Treaty to discuss the International Treaty on Plant Genetic Resources for Food and Agriculture. After a presentation by the Secretariat we will discuss what—from the point of view of the FAO and also from the point of view of DIVERSEEDS members—are the main challenges for the ratification and implementation of the

Treaty. We can then take this forward and ask how DIVERSEEDS could contribute to overcome existing challenges, or at least how we could help to layout what additional activities towards these aims would be necessary (e.g., in terms of a recommendations).

## **2.2. Meeting with the ECPGR Inter-Regional Cooperation Network**

The DIVERSEEDS team will have a joint meeting with the members of the ECPGR Inter-Regional Cooperation Network (IRCN) and Bioversity. This relatively young network has similar goals as our project. However, the IRCN workshop on inter-regional collaboration involves regional and sub-regional plant genetic resources networks from all over the world. Given that the IRCN will continue its work after the DIVERSEEDS project has finished at the end of 2008, this joint meeting will help to identify common goals and synergies between the two initiatives, whether future joint activities can be identified and to find out if our project outcome could—in one way or the other—also contribute to the success of the IRCN.

## **2.3. Presentation of regional workshops**

One representative from each of the three project regions will tell us about the outcome of the regional workshops that were held in China, Vietnam and Slovenia. We will also get an introduction about the rated PGR issues from each region (see also Annex 2).

## **2.4. Technical workshop**

The objective of the technical workshop is to allow for some more detailed presentations and subsequent discussions on selected issues from Europe and Asia. The workshop will consist of 4 presentations:

- Introduction to AEGIS (A European Genebank Integrated System)
- Methodologies for the conservation and sustainable use of crop wild relatives
- Role of local people for in situ conservation of PGR in Vietnam and Thailand: lessons learned
- Conservation biology and conservation of CWR in China

## **2.5. Selection of key issues for inter-regional discussion**

Given the wide variety of issues mentioned and rated in the bottom-up approach of the first 12 months of the project, it is now time to select some of these issues that would best fit the requirement of starting or increasing an inter-regional dialogue between project partners and beyond. In order to select the „right“ issues we need to consider the following three main criteria:

- Feasibility: project partners should have the necessary expertise and competence.
- Impact: issues where we can make a real impact and that can be practically implemented.
- Superposition: Issues that are of interest for all three regions.

In addition the following criteria could also be taken into account:

- Collaboration: other activities that are planned/ongoing and that could provide an opportunity to collaborate.

## **2.6. Breakout working groups**

The prioritization and definition of next steps for key PGR issues will take place via breakout working groups. These groups will ensure a more efficient working environment and take into account the

different personal expertises of participants. It is foreseen that there will be three breakout working groups, namely:

- Capacity building, training and modern (bio)technologies
- Ex situ conservation, the use of ex situ conserved material for breeding and information systems
- In situ and on-farm conservation and use of in situ conserved material for breeding

The PGR issues identified by the DIVERSEEDS partners during the three regional workshops should fit into one of these three groups<sup>1</sup>. In terms of logistics, each breakout working group should include at least two representatives from each region. The working groups will continue to work together after the international meeting, so the international meeting practically forms the start of three working groups within DIVERSEEDS. See Annex 1 for a suggested assignment of project partners to the breakout working groups.

## **2.7. e-conference (open discussion)**

From March to April 2008 we will carry out an open e-discussion on selected PGR topics. We will invite experts and other interested stakeholders to register for the conference (we need email lists of potentially interested people from you). The e-conference participants should represent countries from Europe and Asia and should engage in an online discussion moderated by DIVERSEEDS. To get the discussion going we will provide an input paper that represents the outcome of the international meeting's selection of key issues. The aim of the e-discussion is to engage a wider circle of interested people to discuss the PGR issues selected by our team and to allow non-project members to interact with our project team. Comments, suggestions and ideas brought forward by the participants will be taken into account for the second round of workshops and the second international meeting.

The e-conference will be moderated by DIVERSEEDS project partners and the main categories of discussion should be related to those we have selected and discussed in the breakout working groups.

As an example, you can find the summary of a past e-conference (on neglected and underutilized species) at: <http://www.agrofolio.eu/index.php?page=pub-summary-e-conference>

## **2.8. Public awareness activities**

We will discuss the objectives and necessary requirements for the short documentary film, and the public information event (to be held in Asia). For the short film we will discuss briefly the storyline and further filming sites; contributions from project member will be appreciated.

## **2.9. Future workshops and meetings**

We will discuss possible venues and the dates for the second round of regional workshops and the second international meeting, to be held in China in 2008.

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<sup>1</sup> In case an issue cannot be assigned into one of these groups easily we will discuss its destiny during the formation of the groups.

## ANNEX

### Annex 1: Preliminary assignment of meeting participants to breakout working groups

This is a first sketch of how the participants could assign themselves into the three working groups. Changes are of course possible, as long as at least two persons per region participate in each group.

Name		Breakout Group								
		Capacity Building			Ex situ/Info sys.			In situ/farmer		
		EU	CH	SEA	EU	CH	SEA	EU	CH	SEA
Yinghui	Li		1							
Lijuan	Qiu				1					
Ge	Song							1		
Wei	Wei		1							
Zengyan	Zhang				1					
Haifei	Zhou							1		
Oz	Barazani				1					
Jan	Engels				1					
Brian	Ford-Lloyd	1								
Christoph	Germeier				1					
Rivka	Hadas				1					
Veronika	Hager	1								
Karl	Hammer							1		
Shelagh	Kell							1		
Korous	Khoshbakht							1		
Nigel	Maxted							1		
Angela	Meyer	1								
Markus	Schmidt	1								
Poramate	Banternrg									1
Nguyen										
Than	Lam			1						
Anan	Polthane									1
Chutima	Ratanasatien						1			
Percy	Saijse			1						
Long	Trandinh						1			
		<b>EU</b>	<b>CH</b>	<b>SEA</b>	<b>EU</b>	<b>CH</b>	<b>SEA</b>	<b>EU</b>	<b>CH</b>	<b>SEA</b>
SUM		4	2	2	4	2	2	4	2	2
TOTAL		8			8			8		

EU: Europe

CH: China

SEA: Southeast Asia

Participants not yet assigned to a group: Eva Thörn, Lorenzo Maggioni, Markus Schmidt, two Master students from SE-Asia.

## Annex 2: List of PGR issues of the three regions and mean judgement values.

### Issues on plant genetic resources in China (Revision after the first Chinese workshop)

Issue	Mean
<b>1. Scientific Research</b>	<b>9,14</b>
1.1 The current status of PGR and its survey	9,50
1.2 Data base construction of PGR	9,00
1.3 Collection and coordination of related Traditional Knowledge	8,00
1.4 Enhancement of germplasm	8,00
1.5 Promotion of methodologies and technologies for the conservation	8,50
<b>2. Policy</b>	<b>9,43</b>
2.1 Access and benefit sharing of PGR	9,50
2.2 Popularity and public participation mechanisms	8,50
2.3 Regulation on the conservation and utilization of PGR	9,00
<b>3. Conservation and protection</b>	<b>9,71</b>
3.1 In situ	9,75
3.2 Ex-situ	9,00
3.3 conservation of germplasm	9,00
<b>4. Utilization</b>	<b>9,14</b>
4.1 Breeding	9,00
4.2 Screening for useful genes	9,25
4.3 Sustainability	9,25
4.4 Improvement of environment	8,00
<b>5. Other aspects</b>	<b>7,71</b>
5.1 Predominated planting of certain crop varieties (species)	7,50
5.2 Commercialization of genetically modified crops	6,50
5.3 Effects of global climate change	8,00

All PGR issues were judged by 8 people during Chinese workshop, according to their perceived importance, from 0-10, with 0 as least important and 10 most important.

**Ranking current issues regarding conservation and use of plant genetic resources by the project partners in Vietnam and Thailand**

<b>Ranking by major issues:</b>		<b>Vietnam</b>	<b>Thailand</b>
<b>Mean</b>		<b>Mean</b>	<b>Thailand</b>
<b>No.</b>			
1	In situ conservation	<b>8,9</b>	<b>9,0</b>
2	Information system	<b>8,3</b>	<b>8,0</b>
3	Integrated approach	<b>8,1</b>	<b>8,5</b>
4	Ex situ conservation	<b>7,5</b>	<b>8,0</b>
5	Dissemination	<b>7,3</b>	<b>8,5</b>
6	Biotechnology	<b>5,7</b>	<b>7,0</b>

<b>Ranking by detailed issue</b>		<b>Vietnam</b>	<b>Thailand</b>
		<b>Mean</b>	<b>Mean</b>
<b>1. Ranking by in situ conservation</b>			
1	How to increase the number of in situ conservation farm representing different ecological regions?	<b>8,8</b>	<b>7,5</b>
2	Policy and funds are needed in order to support local farmers, who cultivate wild species or local varieties.	<b>8,6</b>	<b>9,0</b>
3	Farmer's knowledge on plant species should be acknowledged and disseminated.	<b>7,9</b>	<b>7,5</b>
4	What are the incentives for a farmer to keep landraces?	<b>7,7</b>	<b>7,0</b>
5	How can Stakeholders in Asian and European countries benefit from the ITPGR?	<b>7,3</b>	<b>8,5</b>
6	Does the FAO ITPGR takes in situ PGR and crop wild relatives into account?	<b>7,1</b>	<b>7,0</b>
7	Should take into account botanic garden/parks in schools, colleagues, universities as well as in cities, rural areas?	<b>7,1</b>	<b>7,5</b>
8	Should raise the habit of individual persons on the collection of PRG	<b>7,0</b>	<b>7,0</b>
9	The farms should be used for multiple purposes including conservation of PGR.	<b>6,9</b>	<b>8,0</b>
10	Is the role of home gardens sufficiently taken into account in PGR conservation?	<b>6,7</b>	<b>7,5</b>
11	How to improve FAO ITPRG procedures for evaluating plant species to adapt local conditions?	<b>6,6</b>	<b>7,0</b>
12	What about the facilities and funding support for in situ conservation of PGR?	<b>6,3</b>	<b>9,0</b>
13	Are existing in situ PGR reserves climate change proof? How can this be evaluated, and which strategies are available to make them climate change proof?	<b>5,7</b>	<b>7,5</b>
14	How occurrence of new improved varieties change the way of PGR conservation at the farm level?	<b>5,5</b>	<b>7,5</b>

**2. Information system**

(no detailed questions)

**3. Integrated approach:**

<b>Vietnam</b>	<b>Thailand</b>
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No.	Issues	Mean	Mean
1	How to utilize all PGR with farmers participation in order to reduce cost of conservation and increasing effectiveness and diversification?	8,2	8,5
2	Approaches aiming at combining the three above mentioned aspects to an integrated gene management.	7,3	8,0
3	Rotation methods (Laboratory→on-farm test→exsitu→insitu→in-vitro).	7,3	7,0
4	Should be develop integrated gene management through participation of multi-stakeholders and policy support.	7,2	7,5

#### 4. Ranking by Ex situ conservation

No.	Issues	Vietnam	Thailand
		Mean	Mean
1	Data sharing about Ex situ techniques	7,9	7,5
2	Skills for ex-situ	7,9	7,5
3	Criteria for prioritized plant species under Ex situ program	7,6	8,0
4	Material support for ex situ facilities	7,3	8,5
5	Understand the benefit from Ex situ conservation?	7,1	9,5
6	Not (yet) participate in the ITPGR	6,1	-
7	Time constraints of ex-situ	5,8	8,0

#### 5. Dissemination:

No.	Issues	Vietnam	Thailand
		Mean	Mean
1	How to disseminate results of plant genetic conservation through education channel and general public?	7,9	8,5
2	How to organize training on the skills of PGR conservation in the systematic way?	7,8	7,5
3	Skills on Conservation of PGR should be transferred from scientists to farmers as well as from farmers to farmers.	7,3	8,0
4	What are suitable measures for data sharing among all parties working on plant genetic resources?	6,6	7,0
5	How to introduce the red book to the farmers? Then, what are benefits to the farmers?	6,3	7,5

#### 6. Biotechnology

No.	Issues	Vietnam	Thailand
		Mean	Mean
1	How could new developments in biotechnology, such as DNA synthesis change the way PGR conservation is practiced today?	7,3	7,5
2	Are In-vitro practices used as alternative way for PGR in the near future of Vietnam? If yes, how does it cost?	6,8	8,0

Scored by 7 people from Vietnam and 2 from Thailand during the SE-Asia workshop, scores from 0-10 with max. 10

## **Additional Comments by Scientists from Vietnam and Thailand**

### General comments:

- Ex situ conservation requires high cost for maintaining genetic materials. Dr. Tung argued on the removal of plant genetic resources from their origin causing change their habitat.
- Based on the presentation and sharing experience among participants, in situ is the easy and efficiency way for PGR in the developing countries. Both country representatives agree on in situ conservation, which need to be improved as the first priorities. Thailand case study recommended the functions of medicinal man for in situ conservation.
- Integrated approaches and information system are support tools for in situ conservation.
- The governments have a great attention for publication of PGR works, and it is only slightly issue!
- GMO and Synthesis biology are still not familiar with Southeast Asian Countries. Policy makers (Vietnam) do not want to investigate deeply on these issues.

### In situ conservation

- Vietnamese participants gave the first priorities for expanding in situ farms representing different ecological regions, while Thai participants considered facilities and funding supports is the most important.

### Integrated approach

- Representatives from both countries agree on the issues of farmer participation in PGR, where in situ integrated with ex situ to reach the goal of conservation.

### Ex situ conservation

- In-vitro (Plant tissues) for conservation
- Although Vietnam has not yet participated in ITPGR, but partly genetic resources are accepted for exchange by decree 79 and 80 issued by the government. Vietnamese authorities still worry about the lost of genetic resources or unequal exchange PGR with foreigner countries. Thailand has got some benefits from ITPGR and they have huge collection of PGR in Bangkok. Some varieties and cultivar have been exchange between Vietnam and Thailand (Mango, persimon, pomelo, rice, peanut, guava, banana)
- Vietnamese scientists consider data sharing and skills on Ex situ PGR conservation are the first priorities since the network on PGR is still weak and overlapping implementation is still going. The Thai Scientist also considered it is important, but people should firstly understand the benefits from Ex situ conservation. If farmers do not fully understand, PGR conservation hardly get the success.

### Dissemination

- Both Vietnamese and Thai scientists recognized the limitation of dissemination of results to general public. There are only available PGR works in the special journals or specific publications. The need to disseminate PGR results in general public is the first priorities.

### Biotechnology

- Biotechnology is still challenges for Vietnam due to limited of staff, inadequate laboratories, small funds, and farmer's awareness. Thailand is much better. In the near future, Vietnam need more funds for investments on PGR biotechnology, but the priorities should be given to in situ conservation approaches by the simple way.

## Ranking issues regarding conservation and use of plant genetic resources by the European project partners

Scored by 14 people during the European workshop, scores from 0–10 with max. 10. The category TOP issue counts the amount of issues that were marked as of outstanding importance.

<b>1. Task sharing through collaboration and capacity building</b>		<b>mean</b>	<b># TOP issue</b>
<b>1.1. Task sharing and capacity building</b>			
	1.1.1 Task sharing and capacity building	9,07	10
	1.1.2 Technical assistance, capacity building, scientific cooperation	7,15	3
	1.1.3 Task sharing through collaboration	7,08	1
	1.1.4 Financial support and capacity building	6,46	0
	1.1.5 ITPGR facilitation by Europe	5,85	1
	1.1.6 establish a firm basis of mutual trust	5,67	2
<b>1.2. Cooperation with non-scientific stakeholders</b>			
	1.2.1 Home gardens: cooperation with civil society	5,62	1
	1.2.2 Corporate social responsibility: cooperation with industry	4,77	1

<b>2. Characterization, documentation and information for conservation</b>		<b>mean</b>	<b># TOP issue</b>
<b>2.1. Documentation</b>			
	2.1.1 Documentation and Information	8,79	9
	2.1.2 National and regional PGR documentation	6,92	0
	2.1.3 CWR and landrace inventories	6,86	1
	2.1.4 Characterization and evaluation for conservation	6,36	1
	2.1.5 Genetic Gap Analysis - Integrated approach	4,77	0
	2.1.6 Practical Taxonomy	4,29	0
<b>2.2. Information system</b>			
	2.2.1 Ex-situ: lessons learned from AEGIS	7,77	5
	2.2.2 Information system	7,69	1
<b>2.3. Conservation strategies</b>			
	2.3.1 Criteria set to measure successful conservation	7,38	2
	2.3.2 Setting priorities for collection and ex situ conservation	7,36	2
	2.3.3 Conservation Prioritisation	6,14	2
	2.3.4 Ex situ conservation – Collection strategies (technical questions)	5,69	0
<b>2.4. Threat assessment</b>			
	2.4.1 Loss of genetic diversity – 2010 target (characterisation)	6,77	2
	2.4.2 Threat assessment	6,50	2
	2.4.3 Red list for crops	4,85	0
<b>2.5. New technologies</b>			
	2.5.1 Modern methodologies to support PGR conservation	7,71	5
	2.5.2 Synthetic biology: conservation and use	3,42	0

<b>3. Sustainable utilization (traits of agronomic importance)</b>		<b>mean</b>	<b># TOP</b>
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			issue
<b>3.1. Utilization of PGR</b>			
	3.1.1 Enhanced utilisation of conserved diversity	6,64	3
	3.1.2 using PGR: are there markets (economy)	5,85	1
<b>3.2. Neglected and underutilized crops</b>			
	3.2.1 Neglected and underutilized crops (NUS)	5,77	1
	3.2.2 Promotion of neglected and underutilized species	5,71	1
<b>4. In situ and on-farm conservation, integrated approach</b>		<b>mean</b>	<b># TOP issue</b>
<b>4.1. in situ conservation</b>			
	4.1.1 In situ and on-farm conservation	6,64	2
	4.1.2 In-situ: impact of the ITPGR	6,46	1
<b>4.2. on-farm / farmers</b>			
	4.2.1 On farm: traditional farmer knowledge and incentives	6,08	1
	4.2.2 On-farm: benefit to farmers, farmer incentive	6,00	3
	4.2.3 home gardens and traditional farming (incentives, participation)	5,64	2
	4.2.4 support & benefit to farmers and local communities	5,57	1
	4.2.5 benefit to farmers	5,00	0
<b>4.3. integrated approach (combining ex and in-situ)</b>			
	4.3.1 integrated approach	6,75	0
	4.3.2 integrative approach for conservation	5,92	0
<b>5. Other</b>		<b>mean</b>	<b># TOP issue</b>
<b>5.1. Impact of Climate change</b>			
	5.1.1 PGR and climate change	6,86	2
	5.1.2 In situ and climate change	6,62	3
<b>5.2. Awareness</b>			
	5.2.1 Dissemination public awareness	6,69	0
<b>5.3. Legal issues</b>			
	5.3.1 „political/legal“ agreement	6,08	1
	5.3.2 Effective legislation for PGR protection	5,25	1
<b>6. New issues mentioned at the workshop: <u>not judged by all participants</u></b>		<b>mean</b>	<b># TOP issue</b>
<b>6.1. Training</b>			
	6.1.1 training	9,75	3
	6.1.2 joint study course on conservation	9,00	0
<b>6.2. Other</b>			
	6.2.1 sustainable use in breeding	9,00	0
	6.2.2 integrative approach for conservation on regional scope	9,00	0
	6.2.3 comprehensive database on players and institutions	8,00	0
	6.2.4 exchange program among farmers	8,00	0
	6.2.5 Encourage dialogue / interaction between PGRFA workers and traditional conservationists, e.g. via IUCN/SSC	4,00	0

### Annex 3: Assignment of issues to the three breakout working groups.

Note that some issues appear in more than one group (e.g., conservation appears in ex situ and in situ).

in situ and on farm	ex situ and information system
<b>China</b>	<b>China</b>
1.Issues on Sustainable Utilization of PGR	1.Issues on Sustainable Utilization of PGR
1.1 Establishment of PGR database:	1.1 Establishment of PGR database:
1.2 Enhancement of germplasm	1.2 Enhancement of germplasm
2.Loss of PGR diversity	3.Conservation practices of PGR
2.1 The effect of human activities: disturbance/destruction of the habitat of wild PGR	3.1 Efficiency of in situ and ex situ conservation in the diversity centre in the field and the preservation of the plant germplasm in gene pool.
2.2 The loss of diversity of crops by adopting several dominant varieties in agricultural practices	3.1.2 Efficiency of ex situ conservation in the diversity centre in the field and the preservation of the plant germplasm in gene pool.
2.3 The loss of wild due to the genetic erosion	3.2 Favourite habitat (ecological condition) of in situ and ex situ for PGR reserved in field
2.4 The effect of global climate change on the PGR	3.2.2 Favourite habitat (ecological condition) of ex situ for PGR reserved in field
3.Conservation practices of PGR	6. Sharing and exchanging of PGR at international level
3.1 Efficiency of in situ and ex situ conservation in the diversity centre in the field and the preservation of the plant germplasm in gene pool.	6.1 Species included in the ITPGR
3.1.1 Efficiency of in situ conservation in the diversity centre in the field and the preservation of the plant germplasm in gene pool.	6.1.1 The ones originating in china
3.2 Favourite habitat (ecological condition) of in situ and ex situ for PGR reserved in field	6.1.2 The ones not originating from china but important for the breeding of new varieties.
3.2.1 Favourite habitat (ecological condition) of in situ for PGR reserved in field	6.2 Species not included in the ITPGR
4.Current status of PGR at international and national/local level	6.2.1 The ones originating in china
4.1 Current distribution and genetic diversity of PGR: on farm land, wild and the storehouse of the farmers	6.2.2 The ones not originating from china but important for the breeding of new varieties.
4.2 Current and traditional knowledge on PGR, especially in countryside	6.3 Species solely endemic to a country or local region
5.Benefits of PGR	6.4 The capacity of the ITPGR
5.1 For research and breeding	6.5 Intellectual property right of PGR
5.2 For farmers	6.6 Utilization of exchanged PGR (e.g. wheat, soybean)
5.3 Mechanisms for encouraging conservation	
5.4 Popularity and dissemination	<b>SE-Asia</b>
7. Extinction of PGR: rate and extent	Data sharing about Ex situ techniques
7.1 Extinction of wild population	Skills for ex-situ
7.2 Extinction of cultivated PGR	Criteria for prioritized plant species under Ex situ program
7.3 The ability and possibility to be liable to extinct	Material support for ex situ facilities

**in situ and on farm**

**SE-Asia**

How to increase the number of in situ conservation farm representing different ecological regions?
Policy and funds are needed in order to support local farmers, who cultivate wild species or local varieties.
Farmer's knowledge on plant species should be acknowledged and disseminated.
What are the incentives for a farmer to keep landraces?
How can Stakeholders in Asian and European countries benefit from the ITPGR?
Does the FAO ITPGR takes in situ PGR and crop wild relatives into account?
Should take into account botanic garden/parks in schools, colleagues, universities as well as in cities, rural areas?
Should raise the habit of individual persons on the collection of PRG
The farms should be used for multiple purposes including conservation of PGR.
Is the role of home gardens sufficiently taken into account in PGR conservation?
How to improve FAO ITPRG procedures for evaluating plant species to adapt local conditions?
What about the facilities and funding support for in situ conservation of PGR?
Are existing in situ PGR reserves climate change proof? How can this be evaluated, and which strategies are available to make them climate change proof?
How occurrence of new improved varieties change the way of PGR conservation at the farm level?
How to introduce the red book to the farmers? Then, what are benefits to the farmers?
How to utilize all PGR with farmers participation in order to reduce cost of conservation and increasing effectiveness and diversification?
Skills on Conservation of PGR should be transferred from scientists to farmers as well as from farmers to farmers.

**Europe**

1.2. Cooperation with non-scientific stakeholders
1.2.1 Home gardens: cooperation with civil society
1.2.2 Corporate social responsibility: cooperation with industry
2.1. Documentation
2.1.1 Documentation and Information
2.1.2 National and regional PGR documentation

**ex situ and information system**

Understand the benefit from Ex situ conservation?
Not (yet) participate in the ITPGR
Time constraints of ex-situ
What are suitable measures for data sharing among all parties working on plant genetic resources?

**Europe**

2.1. Documentation
2.1.1 Documentation and Information
2.1.2 National and regional PGR documentation
2.1.4 Characterization and evaluation for conservation
2.1.5 Genetic Gap Analysis - Integrated approach
2.1.6 Practical Taxonomy
2.2. Information system
2.2.1 Ex-situ: lessons learned from AEGIS
2.2.2 Information system
2.3. Conservation strategies
2.3.1 Criteria set to measure successful conservation
2.3.2 Setting priorities for collection and ex situ conservation
2.3.3 Conservation Prioritisation
2.3.4 Ex situ conservation – Collection strategies (technical questions)
2.4. Threat assessment
2.4.1 Loss of genetic diversity – 2010 target (characterisation)
2.4.2 Threat assessment
2.4.3 Red list for crops
3.1. Utilization of PGR
3.1.1 Enhanced utilisation of conserved diversity
3.1.2 using PGR: are there markets (economy)

<b>in situ and on farm</b>
2.1.3 CWR and landrace inventories
2.1.4 Characterization and evaluation for conservation
2.1.5 Genetic Gap Analysis - Integrated approach
2.1.6 Practical Taxonomy
2.3. Conservation strategies
2.3.1 Criteria set to measure successful conservation
2.3.2 Setting priorities for collection and ex situ conservation
2.3.3 Conservation Prioritisation
2.4. Threat assessment
2.4.1 Loss of genetic diversity – 2010 target (characterisation)
2.4.2 Threat assessment
2.4.3 Red list for crops
3.1. Utilization of PGR
3.1.1 Enhanced utilisation of conserved diversity
3.1.2 using PGR: are there markets (economy)
3.2. Neglected and underutilized crops
3.2.1 Neglected and underutilized crops (NUS)
3.2.2 Promotion of neglected and underutilized species
4.1. in situ conservation
4.1.1 In situ and on-farm conservation
4.1.2 In-situ: impact of the ITPGR
4.2. on-farm / farmers
4.2.1 On farm: traditional farmer knowledge and incentives
4.2.2 On-farm: benefit to farmers, farmer incentive
4.2.3 home gardens and traditional farming (incentives, participation)
4.2.4 support & benefit to farmers and local communities
4.2.5 benefit to farmers
5.1.1 PGR and climate change
5.1.2 In situ and climate change
5.3. Legal issues
5.3.1 "political/legal" agreement
5.3.2 Effective legislation for PGR protection

<b>ex situ and information system</b>
5.3. Legal issues
5.3.1 "political/legal" agreement
5.3.2 Effective legislation for PGR protection

### **Capacity building, training and modern technology**

#### **China**

8. Issues on the effect of GMOs
8.1 Trans gene escape
8.2 Gene contamination
8.3 Dominant cultivation of GM crops

## SE-Asia

How could new developments in biotechnology, such as DNA synthesis change the way PGR conservation is practiced today?
Are In-vitro practices used as alternative way for PGR in the near future of Vietnam? If yes, how does it cost?
How to organize training on the skills of PGR conservation in the systematic way?
How to disseminate results of plant genetic conservation through education channel and general public?

## Europe

1. Task sharing through collaboration and capacity building
1.1.1 Task sharing and capacity building
1.1.2 Technical assistance, capacity building, scientific cooperation
1.1.3 Task sharing through collaboration
1.1.4 Financial support and capacity building
1.1.5 ITPGR facilitation by Europe
1.1.6 establish a firm basis of mutual trust
2.5. New technologies
2.5.1 Modern methodologies to support PGR conservation
2.5.2 Synthetic biology: conservation and use
5.2. Awareness
5.2.1 Dissemination public awareness

## Other issues:

### Europe

6. New issues mentioned at the workshop (not judged by all participants)
6.1. Training
6.1.1 training
6.1.2 joint study course on conservation
4.3. integrated approach (combining ex and in-situ)
4.3.1 integrated approach
4.3.2 integrative approach for conservation