

In situ (on-farm) concept: the reasoning behind

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Main elements to be taken into account in the concept

- ToRs
- International context and policy background
- European breadth
- Farmers
- ‘where ‘ on-farm conservation occur



ToRs

1. **the concept 'On-farm management and conservation of landraces (LRs) in Europe' should :**
2. be based upon the "Strategy Paper on the ECPGR Relationship with the European Union/European Commission"
3. be applicable to all Europe, but not prescriptive and be respectful of the sovereignty each country
4. **use the internationally agreed definitions and concepts of *in situ* and on-farm conservation where such definitions are available.**
5. be developed in close collaboration with the *In situ* Network & with the Doc&Information Network.
6. **describe the interface between *in situ* conservation, on-farm management and conservation and *ex situ* conservation.**
7. Not of interest.
8. **give special attention to the development of national inventories of LR maintained on farm as defined by the respective national focal points as *plant genetic resources naturally adapted to the local and regional conditions and under threat of genetic erosion.***
9. should investigate options to improve the complementarity of *ex situ* and *in situ* CWR and LR conservation by integrating the *In situ* & on-farm NW & the crop-based WGs initiatives .
10. **must explore the approach of unique and important accessions for *in situ* conservation (AEGIS like).**
11. should investigate options to promote awareness & raise additional funding for *in situ* LR conservation
12. **should not exceed 10 pages.**
13. should be sent to the SC by the end of September 2013.
14. The SC members (National Coordinators) will be invited to undertake a **national consultation and provide amendments and corrections to the draft concept.**
15. **The SC will seek to finalize the concept by the end of 2013 and will offer them to the European Commission for its consideration when developing a future EU strategy for the conservation of genetic resources in food, agriculture and forestry. The concept will also be the basis for the conservation strategy of ECPGR for *in situ* conservation and on-farm management and will be offered to the European countries if they wish to use them for their relevant national strategies.**

It was understood that:

- We had to propose a process for promoting, planning and implementing on-farm management & conservation of LRs across the entire Europe.
- Problems:
 - We still do not have a LR informative base for the entire Europe
 - As from available info, LRs are not the sole materials used in on-farm conservation:
 - a number of intro/reintroduction activities (e.g. Uk, Germany, France) from genebanks
 - a number of old varieties maintained on-farm.
 - To be considered???

ToRs vs Concept

ToR n.3

- Applicable to all the European countries (EU member states and Non-EU countries), but
- not prescriptive and
- be respectful of each country sovereignty on PGRFA

Concept

- International agreed docs definitions used
- 'loose' wording= widely applicable
- Wide spectrum of GR to be used in O.F. conservation

ToRs vs Concept

ToR n.4

- **Use internationally agreed definitions**

Concept authors recognized the need to use them

- CBD & IT definitions were used
- *“In-situ conservation means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, **in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties**”*
- *We derived the in situ (on-farm) definition used in the text from the above_ no other defs were found*
- **Note: Only on Jan 2015 CGRFA 15/15/inf23 defined:**
- **“ On- farm management = All practice for the conservation and sustainable use of these [e.g. Landrace] genetic resources within the agricultural systems in which they have evolved”**
- **“Landraces = variable population, which is identifiable and usually has a local name, lacks formal crop improvement.....” [i.e. exactly as in the concept]**



ToRs vs Concept

ToR n.5

- Close collaboration between :
- In situ & on-farm NWs
- On-farm & Info& doc NWs

Concept

- Authors of the concept came from both In situ & on-farm NWs
- In situ & on-farm NWs were always in contact
- Info& doc NW received the on-farm concept draft n.3
- Commented it
- Comments were included in the subsequent drafts (6 drafts in all)

ToRs vs Concept

ToR n.6

- Describe interface between:
- in situ & on farm
- on farm & ex situ

Concept

- Described in :
- the MAPA concept
- Use of ex situ stored germplasm for intro/reintroduction purposes

ToRs vs Concept

ToR n.8

- Give special attention to
- National inventories

Concept

- Procedures and means to develop National inventories drafted

ToRs vs Concept

ToR n.9

- Investigate options for improving complementarity between WGs

Concept

- Reviewed specifically in chapter 4

ToRs vs Concept

ToR n.10

- Explore the approach of unique accessions

Concept

- Done both for single PGR and MAPAs
- Need of network of unique materials and sites highlighted

ToRs vs Concept

ToR n.15

- **Offer the concept to the EC for its developing of a strategy for PGRFA conservation**

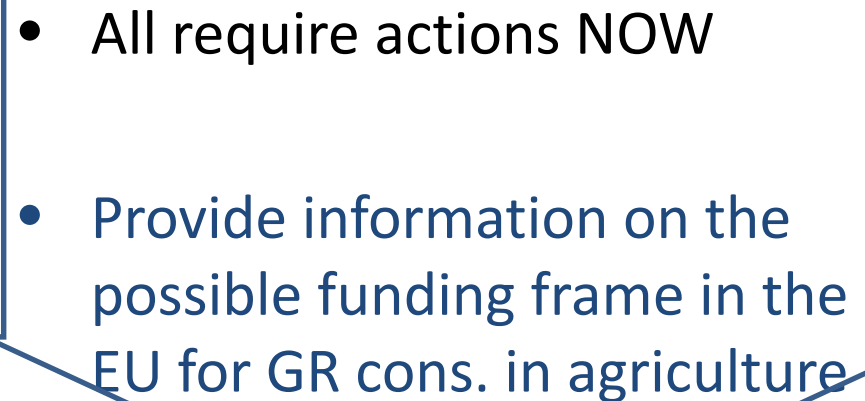
Concept authors had to make

- Reference to all documents which bind European countries to develop a strategy
- Reference to EU documents that solicit a strategy
- Reference to EU policy instruments which facilitate strategy implementation



The International context and policy background

- CBD (1992) > COP10 (Aichi targets)
- 2° GPA (FAO, 2011),
- IT
- EU biodiversity strategy to 2020' (European Parliament Resolution, 2012) > *CAP*
- European Commission Report to the European Parliament, the Council and the European Economic and Social Committee - Agricultural Genetic Resources - From Conservation to Sustainable Use' (2013) > *Rural Development Policy&H2020*

- 
- All require actions NOW
 - Provide information on the possible funding frame in the EU for GR cons. in agriculture

We had to consider :

- Immediate needs (e.g. inventories as a sound info base)
- Possible funding opportunities for GR conservation in agriculture

European breath

Europe: diverse for

- Biodiversity level
- Socio-economic conditions
- Climatic conditions
- Agricultural types
- Different types of materials used in on-farm
- Cultural links to food

Needed in concept:

- Wording widely applicable
- Wide spectrum of suitable (e.g. variable) materials

But a unique concept was asked!



Farmers are the managers of GR in on-farm conservation

Farmers are:

- Economic subjects
- Often need ‘prompts’ for carrying out on-farm conservation
- Cannot impose anything to them

Concept had to:

- Find ways to empower them with genetic resources
- Identify the policy frame able to fund them while carrying out on-farm c.
→ the CAP
- Identify ways that facilitate intro/reintroduction into the farms



'Where ' on-farm conservation occur?

- On-farm conservation can only occur within an agro-ecosystem
- The relationships among living beings and pedoclimatic conditions affect evolution of a certain genetic resource

In concept:

- Ecosystems had to be considered



Elements to be taken into account: quite a complex situation !

- ToRs
- International context and policy background
- European breadth
- Farmers
- Physically 'where ' on-farm conservation occur

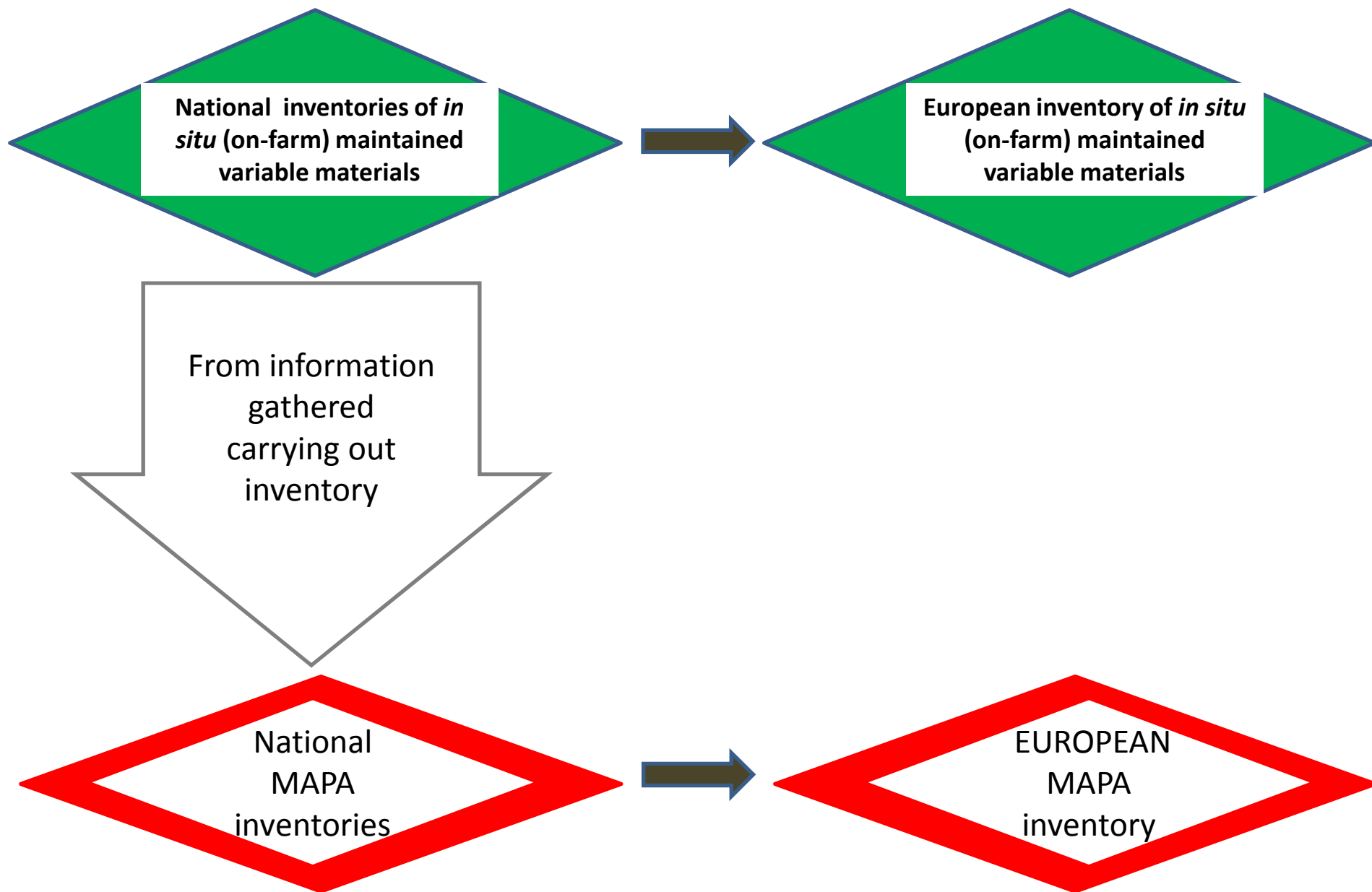
The concept tried to include all into a
unique plan

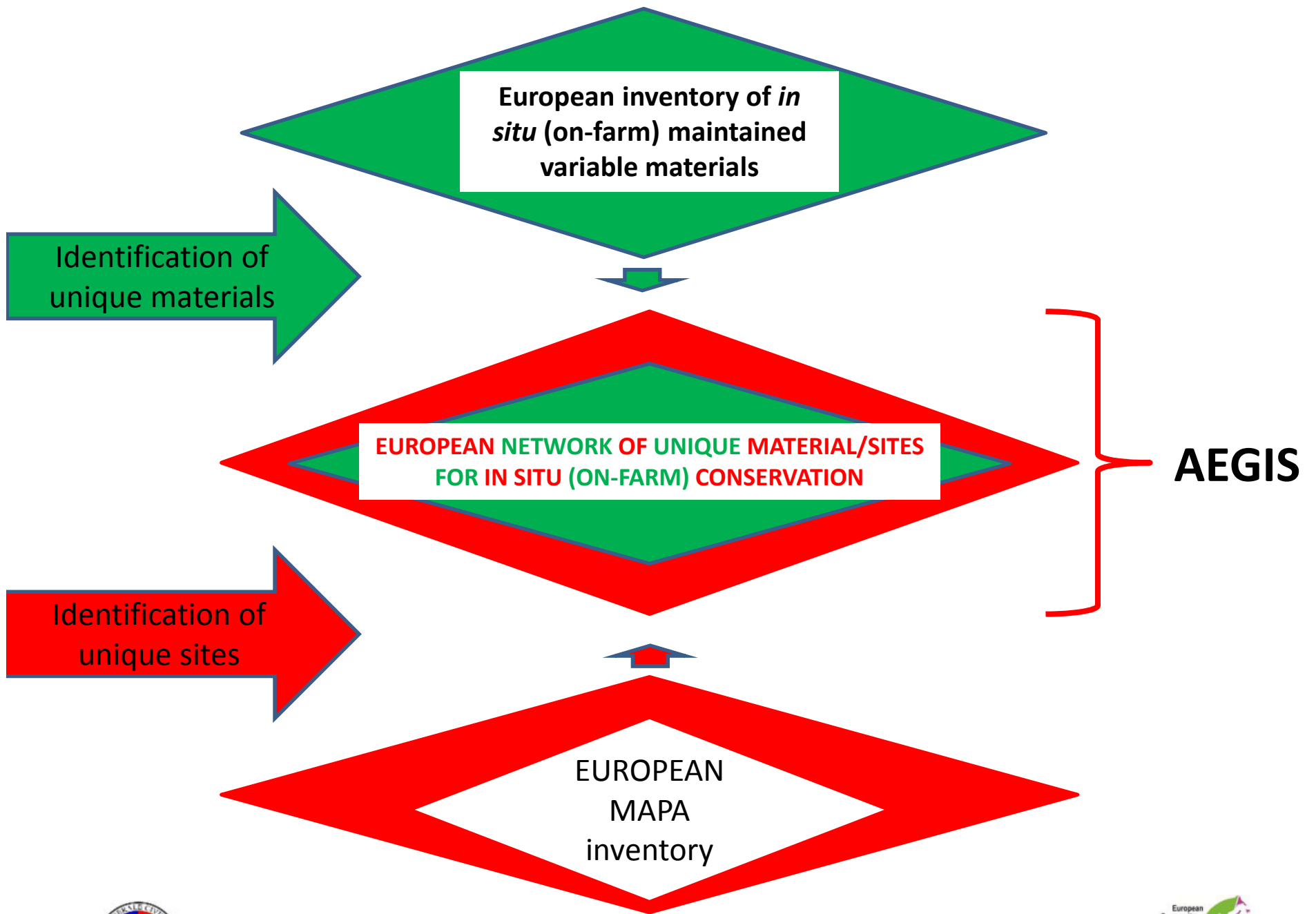
Principal element of the plan:

- The need to complete European inventories of :
 - Suitable materials
 - Most diverse areas (MAPAs)

(both to be realised with a ‘bottom up’ or ‘top down approach’ _('bottom up' preferable)]







CGRFA 15/15/inf23

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Most Appropriate Areas for *in situ* (on-farm) conservation (MAPAs)

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Reasoning behind

- CBD (and ITPGRFA) definition (CBD 1992, Article 2: Use of Terms): "*In-situ conservation means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of *domesticated or cultivated species*, in the surroundings where they have developed their distinctive properties*".
- An **agro-ecosystem** (where on- farm conservation is realised) is a **man-managed ecosystem** (agriculture is man-managed nature)

Addressed us to the need to consider a 'holistic' (global/ecosystemic/comprehensive) approach to *in situ* (on-farm) conservation

In other words.....

- An approach that considers all the components of an agro-ecosystem, including humans of course



What MAPAs are meant to be

- Areas where LRs and other variable materials are found that are
- rich in biodiversity i.e. in the inter-and intra- specific components of diversity (biodiversity hotspots)
- (many species, many varieties within cultivated species)
- where humans already (or are willing to) carry out conservation activities of some types
- (from organic agriculture, to conventional agriculture in protected areas, to conservation of a specific genetic resource etc.)
- MAPA may include biodiversity hotspots that have been '*recovered (reconstructed)*' by humankind





**Schorfheide-Chorin Biosphere Reserve _ Stegelitz, Germany
(2nd On farm ECPGR_WG meeting 2006)**

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Landrace diversity of cereals for organic and low input agriculture

Landesamt für
Umwelt,
Gesundheit und
Verbraucherschutz

- case study and
reintroduction project of
the german biosphere
reserve Schorfheide-
Chorin

***Please see: Vogel R. 2011 Landrace diversity of cereals for organic and low input
agriculture
http://www.pgrsecure.bham.ac.uk/sites/default/files/meetings/palanga/WG2_13_LR_Diversity_for_Organic_and_LowInput_Agriculture_Vogel.pdf**

PGR Secure workshop Palanga 7.-9.Sept. 2011 Rudolf Voegel

Brandenburg
State Office of
Environment,
Health and
Consumer
Protection

Why MAPAs (main advantages of the MAPA concept)

- Areas can be inventoried, farmers cannot!
- Allow prioritization of areas where to promote (or enhance) conservation actions
- Allow protection of other GR & other species (e.g. CWR, wild pollinators, soil flora&fauna etc.)
- Enhance opportunities for conservation creating synergies among activities linked to conservation (Schorfheide-Chorin reserve example*):
 - Naturalistic tourism
 - Production and marketing of local food obtained by 'environmentally friendly' agriculture, development of product networks
 - Development of new living models (with enhanced cooperation and strengthened social relationships among farmers)
 - Sites for biodiversity education and awareness raising, and specialist training
 - Useful examples for conservation sites to be newly established...

Why MAPAs (main advantages of the MAPA concept) follow.

- Help farmers in obtaining funds from the CAP because the CAP includes among its priorities:
 - Sustainable management of natural resources
 - Conserving areas of ecological interest
 - Restoring, preserving & enhancing ecosystems
- Allow research on
 - species not present in biodiversity poor agro-ecosystems and on
 - interaction between them and cultivated species
- Answer the ToR requests of
 - exploring interception between in situ and on farm cons.

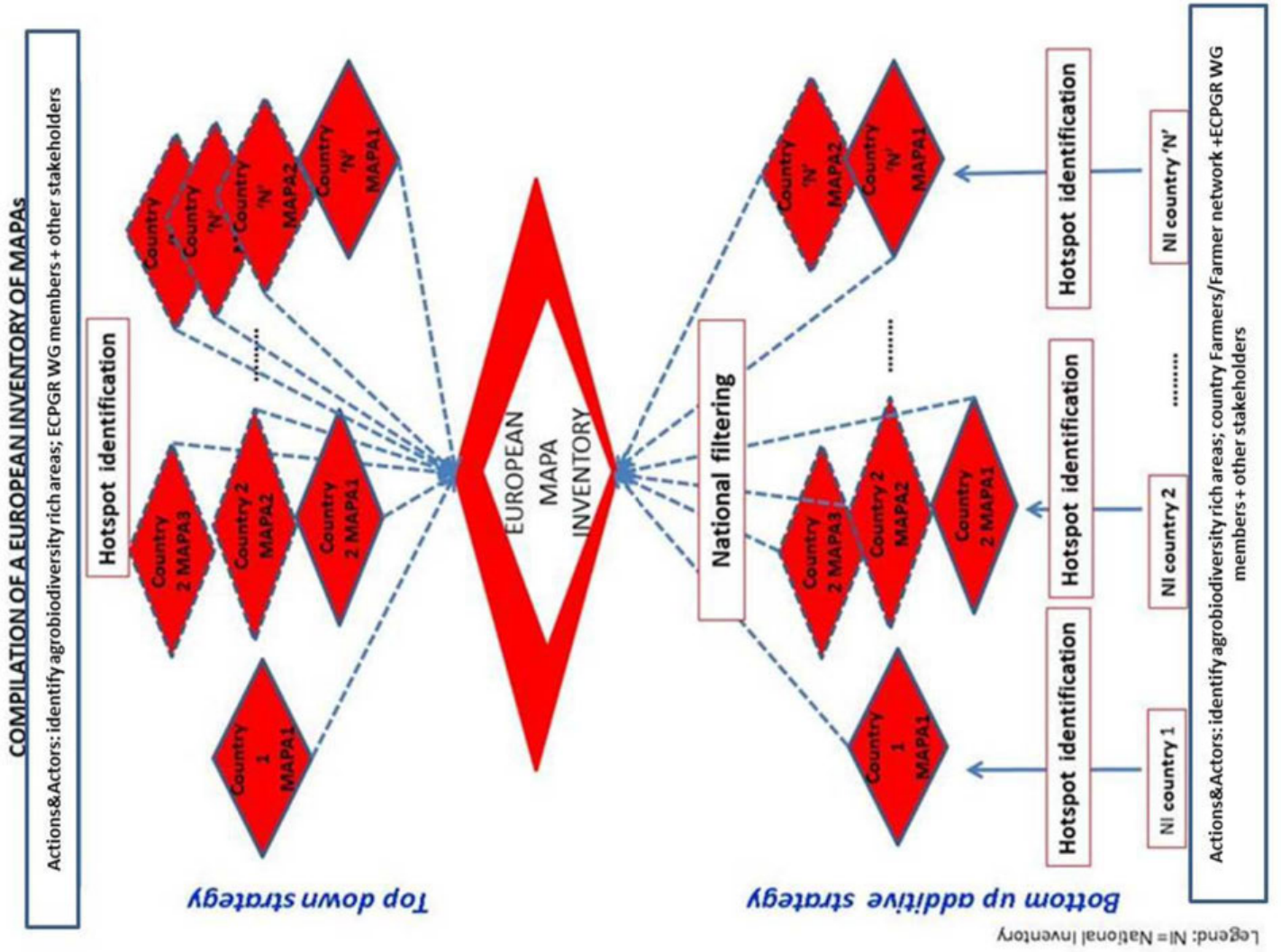


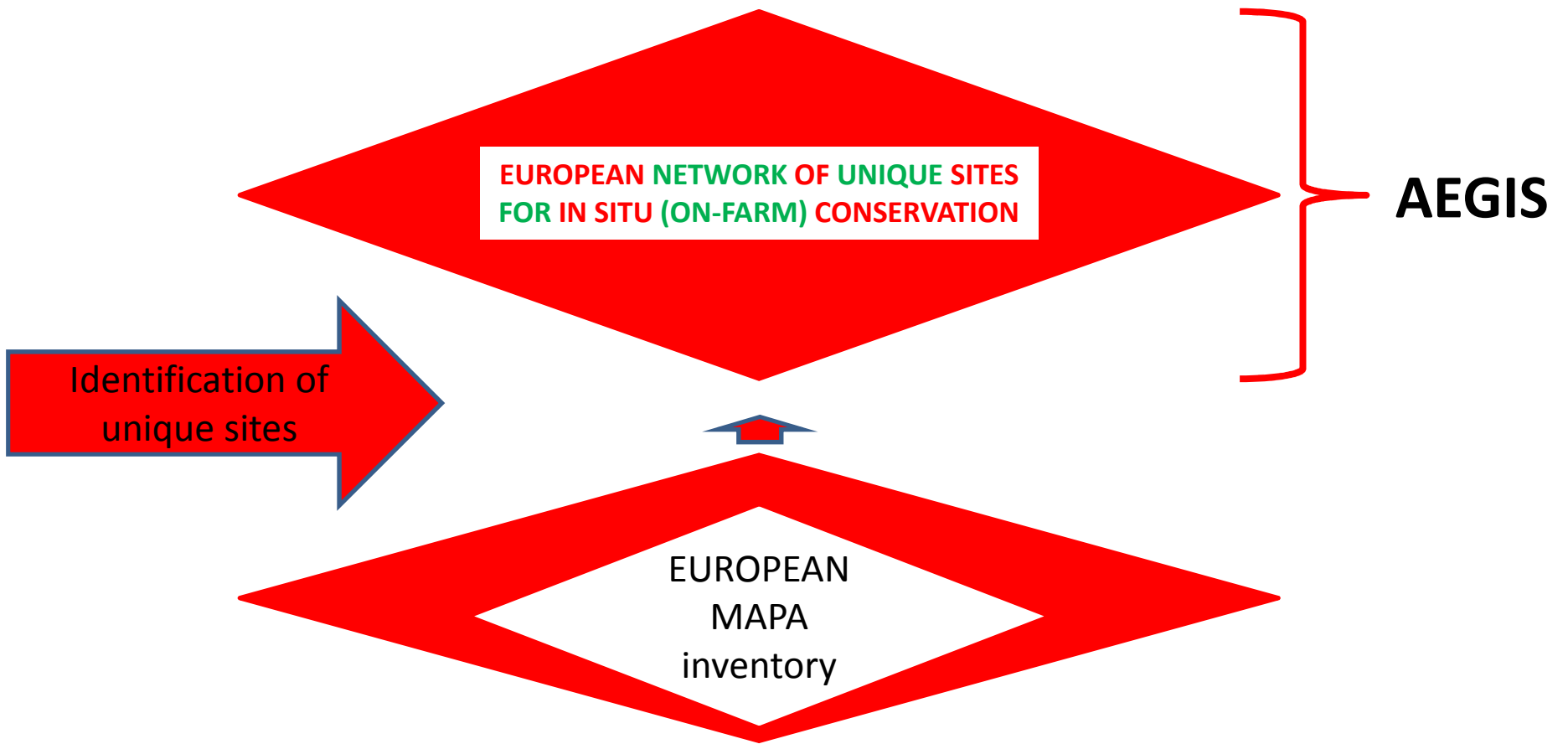
MAPAs possibly identified from...

- data gathered compiling the inventory of variable materials (e.g. density of landraces per unit area)
- Eco-geographic diversity of areas where variable materials are maintained
- location of Protected Areas nearby variable materials that are maintained in situ(on-farm)
-etc.
- Combination of methods



MAPA inventories







EUROPEAN
MAPA network

Final aim

- To construct a network of sites similar to that of Natura 2000 sites
- Where:
 - Monitor diversity evolution
 - Sample diversity for use
 - Study co-evolution of several agro-biodiversity components
 - Promote educational activities, raise awareness, train specialists.. etc

definitions

- CBD_IT:
- ***“In-situ conservation means the conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their natural surroundings and, in the case of domesticated or cultivated species, in the surroundings where they have developed their distinctive properties”***
- *no other defs were found. We derived the in situ (on-farm) definition used in the text from the above and defined :*
- ***"on-farm conservation" as the “conservation of ecosystems and natural habitats and the maintenance and recovery of viable populations of domesticated or cultivated species in the surroundings where they have developed their distinctive properties”***
- ***Note: Only on Jan 2015 CGRFA 15/15/inf23 defined:***
- ***“ On- farm management = All practice for the conservation and sustainable use of these [e.g. Landrace] genetic resources within the agricultural systems in which they have evolved”***
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