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STRATEGY DEVELOPMENT TO IDENTIFY THE MOST APPROPRIATE AREAS FOR *IN SITU* CONSERVATION OF PLANT GENETIC RESOURCES

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Plant genetic resources for food and agriculture are a subset of biodiversity and an essential basis for food security and human welfare. Protection of genetic resources *in situ* and access to a broad genetic variation are the cornerstones of a sustainable use of plant biodiversity in agricultural production systems.

Landraces (LRs) are traditionally grown crop distinct from modern varieties. Their traits can easily be introgressed into breeding pools. All the same crop wild relatives (CWRs) are a source of novel genetic variation and are increasingly used for crop improvement through breeding. Both LRs and CWRs are increasingly threatened with erosion or extinction by unsustainable agro-environmental management and ecosystem instability.

The *An integrated European in situ management workplan: implementing genetic reserves and on farm concepts (AEGRO)*' project (EC 057 AGRI GEN RES 870/2004 contract n. AGRI-2006-0396, http://aegro.jki.bund.de/aegro/, coor. L. Frese, J. Khun Institute, Quedlinburg, DE, scientific responsible for UNIPG, V. Negri) focused on the development of conservation strategies for both CWRs that occur in natural or semi-natural habitats and LRs that are found in farming systems. In the frame of this project, the aim of our work was to analyse the central Italy situation as a case study, and to develop and recommend efficient strategies to establish and implement LR conservation areas in EU member states.

As a first step, an inventory of LRs existing in central Italy has been created including data on LRs taxonomy and the biogeography of the cultivation sites. On the base of the collected data, LRs have been mapped by using orthophoto map and GIS program, in order to visualize and analyse the density and the distribution of LR cultivation areas.

Thereafter, criteria have been elaborated to be taken into account in delimitating areas which are the richest in LRs in order to restrict the number of sites to recommend for conservation activities with priority. The minimum number of criteria which allow the maximum inclusion of diversity has been identified. Two strategies aimed to detect the most appropriate areas (MAA) for the LR on farm conservation. MAAs are areas to be proposed to the National or Regional authorities as areas where to set or enhance political and economic actions in favour of LR and agrobiodiversity conservation with priority. The strategies are based on three criteria that reflect the attributes of agroecosystems: composition, structure and function. In the first strategy the criteria were applied in sequence, progressively selecting areas and finally identifying MAA. In the second strategy areas were scored for each attribute and scores summed to obtain a global index. The areas with the highest scores were considered MAA. The practical results obtained applying these

strategies to the case study (i.e. LRs in Central Italy) are compared. The developed strategies can be applied across all Europe.