QUESTIONNAIRE FOR INVESTIGATING *ON FARM* CONSERVATION STATUS OF OLD CROPS VARIETIES - DEVELOPING METHOD

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Abstract
The scope of this study is to discuss the development process of a professional questionnaire for gathering information in relation with crops genetic resources status of conservation especially dedicated for old crops varieties. The questionnaire is dedicated to assess on farm status of conservation in relationship with the main topics of some multilateral environmental agreements and based on some tools developed at international level for biodiversity communication, education and public awareness.

Key words: on farm, communication, agricultural biodiversity, red list

INTRODUCTION

Assessing the status of *on farm* conservation of old crop varieties is a very important goal under the objectives of the Food and Agriculture Organization and also under the Convention on biological diversity – CBD (adopted in 1992 and entered into force in 1993). In the later case a special place is dedicated to agricultural biodiversity concept as a part of the biodiversity concept - which may become threatened also because of applying perverse incentives systems for trade which are rapid money converting systems and if these financial mechanisms are not developed accordingly to the supportability capacity of each agricultural ecosystem, integrated into a certain landscape unit, in time the genetic erosion may be installed together with agro-ecosystem deterioration and destruction (Antofie, 2009b). Therefore a special attention should be paid for the genetic resources conservation measures development and management. Later on such requirements became compulsory under the International Treaty on Plant Genetic Resources for Food and Agriculture - ITPGRFA (adopted in 2001 and entered into force in 2004) especially for conserving genetic resources pools for the maintenance of all genetic characteristic of a species and its varieties. The objectives of the ITPGRFA are the conservation and sustainable use of plant genetic resources for food and agriculture and the fair and equitable sharing of benefits (ABS) arising out from their use in accordance with CBD. The provisions of art. 15 of the CBD regarding access and benefit sharing are under negotiations for adopting an international regime for ABS in close cooperation with the

ITPGRFA. On the other hand the future ABS regime will be closely related to the further development of art. 8 j of the CBD (Antofie, 2009a).

A very important step in achieving the objectives of these multilateral environment agreements is first to assess and evaluate the status of conservation of all genetic resources belonging to agricultural biodiversity. If for the FAO through the ITPGRFA an ABS regime is already in place for food genetic resources we should underline that in accordance with the CBD provisions (art. 15) a future ABS regime regarding other genetic resources than those already covered by the ITPGRFA should be applied for all genetic resources introduced into the marketplace after 1992. These genetic resources are including the genetic resources from agriculture.

The first step in assessing the genetic resources is to organize a standardized inventory or survey of the status of conservation and trends of these genetic resources. The scope of our study is to develop a questionnaire for gathering information for further evaluating their status of conservation on farm. This process is the first step in the future methodology dedicated for developing a red list for crops varieties in our country and for the communication component of the project this study is following the principles of the CEPA toolkit adopted by IUCN (Hesselink et al., 2007). Such a red list for crops was already published and used in Germany (Hammer and Khoshbakht, 2005).

MATERIAL AND METHODS

In developing the questionnaire template for this study the CEPA toolkit (Hesselink et al., 2007) was used is connection with the main principles promoted by FAO. The project is intending to collect data from farmers for a one year period making sure that are ensured the respecting principles of chance equity, sustainable development and active aging. Therefore the project intention is to assess especially the old generation of small farmers respecting the gender and ethnical equity.

RESULTS AND DISCUSSIONS

The county' survey for *on farm* practices and old crops varieties are two key elements for project implementation targeting the development of a red list for old crops varieties in Romania. The questionnaire is serving for a voluntary survey focusing on establishing the status of conservation of old crops varieties and their associated agricultural practices (Fig.1). The results of the survey will ground the first stage in the development methodology of a red list for old crop varieties into the central part of Romania, namely Sibiu county.

Furthermore the information generated from this survey is needed to support further the development of new policies in agriculture, biotechnology, environment, research and industry to further address at the county level policy needs and guide sustainable development actions in Sibiu county and protected areas (Iagaru, 2010; Pop, 2010).
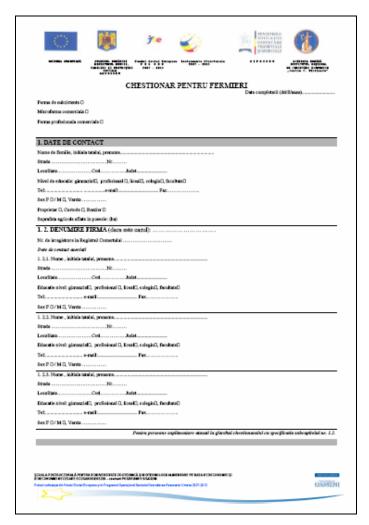

Fig.1 Questionnaire for assessing on farm conservation of crops – old varieties (first page).

The main steps in the methodology applied for developing this questionnaire are as following: [1] elaborating a draft questionnaire based on the scientific and technical information required by the multilateral environment agreements including FAO, CBD and UNFCCC; [2] testing the questionnaire on small target groups according to the principles underlined in the CEPA Toolkit; [3] validating the questionnaire final form according

to the results of the testing survey on target groups and [4] applying the questionnaire for the proposed target group and in this case for the farmers.

According to the CEPA Toolkit certain steps in developing a questionnaire are extremely important and they are closely connected to the communication process between the communicator and the interviewed/respondent (Hesselink et al., 2007). In this case the communicator first should know at the national and international levels what information needs to be assessed, international standards, and on what type of information may relay to be received from the interviewed/respondent. Also the communicator should be aware or should know the language of the interviewed/respondent target group and should be aware about their general skills in communication process. During the testing period the communicator should be very careful for adding/ changing/ removing some parts of the questionnaire in direct connection with the input of the respondent. Depending on the target group the questionnaire may develop differently. Once the responses become more or less uniformly the validation process is closing and the final version of the questionnaire become ready to be applied for a certain type of target group.

Target group

The questionnaire discussed in this paper is dedicated to all farmers living in Sibiu county and also all Romania territory. The villages from this part of Transylvania are preserving customs and traditions for centuries. We mention here that traditional knowledge as a concept relates with the life-style of the local communities in exploiting the ecosystem products and services in a historical proved equilibrium with nature (Antofie, 2009a) reason for which specific chapters are developed into the questioner.

This part of the country has specific geographical characteristics which may be translated through different type of farming for all 130 localities. The county covers a surface of 5.422 square km and almost 2,3% of the total surface of our country being situated between 45 28' and 46 17' nordic latitude and between 26 35' and 24 57' eastern longitude. As a relief the county varies between the highest pick of the Fagaras Mountain (2.535 m - Vf. Negoiu) and the river banks of Tarnava Mare (28 m) being characterized by a huge diversity in landscapes.

Questionnaire description

The questionnaire comprises after the first evaluation 9 chapters instead of 16 and each of them will be presented bellow.

1. Contact details of the respondent: Full Name/Address (No/St.)/ Locality/ Postal Cod/ County/ Education level (gymnasium, high school, collegium's, faculty/ Tel/ E-mail/ Fax/ Gender /Age/Ethnic/ Type of property/ Total arable surface (ha).

This information is setting from the beginning some valuable features of the respondents such as: precise location from geographic point of view for further studies regarding the impact of climate change, type of target group (level of education, age, ethnic group and gender) and type of property. The mosaic of such information may bring valuable information for applying the ecosystem approach concepts adopted under COP 6 of the CBD and further supporting the development of new policies at the local level for *on farm* conservation of the endangered crop varieties.

2. Crops The respondents are asked for answering couples of questions such as the type of farm (crop, livestock etc.) for 2010. The answers to these questions may bring us a proper image regarding the proportion in between different type of farming. The second question is focused only for the crop farms and the respondent are asked to give answers regarding the type of crop cultivation (field crops, backyard, garden, greenhouse, grassland and orchards). This chapter is using a table for which the respondents should answer to a series of questions regarding the crops harvested for 2010 such as: surface/surface for harvest/ surface lost because of/ the best yield of the year and the type of agricultural practices (traditional, conventional, and ecological) extremely important for the climate change.

3. Seeds and seedlings Under this chapter each respondent should answer a series of questions such as: crop name, origin for sowing, time period of using a type of seed or seedling, the first origin in supplying the seeds if this crop is used for couples of years.

4. Traditional and preferred crops This chapter is the most important part of the questionnaire and it targets the memory of the target group. The first series of questions is targeting the extinct cultures not used anymore for more than 20 years but for which they remember that they had good/excellent results, the reason of disappearing and also if they would like to have them into their cropland. The second series of questions is targeting the so called traditional crops defined as crops having a long history for being cultivated into the cropland. In this case they should provide the name of the crop variety, the seed/seedling origin, first year of cultivating, the preferences rate, the reason why they are keep cultivating them even it is not anymore commercialized at the country level and to mention the main barriers in continuing the cultivation of these crops. In the end the respondents are asked if they would agree to take part into a future research programme for *on farm* conservation of the endangered crops species and a short reasoning of their choosing.

5. Land use Land use is the most important chapter for the climate change aspects covered by this project which should be developed further based on this survey. The respondents are asked to classify their land under use according to the international classification system adopted under the Kyoto

Protocol decisions. Therefore we mention here: cropland, settlements, forestland grassland and other uses. Also they are asked to fill in the change in use starting with the year 1989 considered as the reference year for Romania under the Kyoto Protocol (decision FCCC/CP/1996/15/Add.1). The project expectations for receiving such answers are not very optimistic but we consider that this exercise in assessing the memory of the target group could bring valuable information. In the context of climate-change the industrial agriculture causes climate change through the carbon footprint and under this context some questions are further developed: can changes in agriculture also help to mitigate the problems of climate change? or would carbon credits for agriculture promote such changes?. Under these circumstances in the current negotiations for a new climate treaty that is supposed to follow the Kyoto Protocol in 2012, agricultural practices are proposed as a means for climate change mitigation and as part of carbon trading. Investigating traditional agricultural practices in the context of climate change mitigation and adaptation should be a priority for our country too.

6. Damages due to animals and invasive alien plant species The chapter 6 is very important to link between environment requirements regarding species protection and invasive alien species control and eradication and agriculture. Sibiu county is a rich region in large carnivores (bears, wolfs) and other animals which may be present in the croplands neighborhood such as birds, herbivores, boars and rodents. Also, for couple of year invasive alien species become a problem because of the arable land abandon and change in land use. Another series of questions under the same chapter are referring to the conflict situations "human-animals" and in relation to this the respondents are asked to provide their solutions in removing wild animals from their cropland.

7. Weather Under this chapter the respondents are asked to provide some information related to the weather conditions impacting on the crop yields such as severe drought, floods, heavy rain or strong winds and the most affected crops starting with 1989.

8. Farm economy The chapter is targeting the productivity of the farm in order to evaluate the economic value of the farming system and to classify the farm. For those farms located into the protected area a series of questions regarding the incentive measures system applied is to be interviewed in order to assess the quality of the system.

9. Traditions The last chapter is dedicated to traditions: traditional knowledge in relation to the crop use and the inter-linkage in between the nature and the cropland. The respondents are asked to provide information in relation with wild species and crops, traditional practices in cropland management and also information regarding the handcraft processing. This

chapter is investigating specific features in relationship with the last decision taken under the World Intellectual Property Rights Organization.

CONCLUSIONS

Based on the first assessment in interviewing the farmers we identified some barriers and based on that we had some learned lessons
Barriers identified in developing the questionnaire. The main barriers identified for the first stage of questionnaire development are as follows: [1] language - scientists and developers usually are not familiarized with the language of the local communities – popular language in describing crop plants varieties and also all type of information they need to survey and assess; [2] the length and complexity of the questionnaires which are required for the proper assessment according to already accepted at international level standards and [3] - time length of the questionnaire – it is a very important component for interviewing local communities people and as a result the quality of the answers are decreasing with the time dedicated for specific topics. We should mention that the farmers working in the filed dislike spending long time in reading long questionnaires with multiple pages.
Lesson learned. During the first stage, based on the first practical experience it is important to underline some important learned lessons. Thus the questionnaire should be: [1] very clear in the sentence content using a language easy accessible for the respondents, [2] presented as much as possible face to face for respondents and not send by e-mail because of the lack of knowledge in lot of cases in reading professional questionnaires, [3] the topics of questionnaires should be not very long and should be very short and clear formulated and [4] interviews are preferred compared to written questionnaires.

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