

Protocol for the Agricultural Biodiversity (ABD) Assessment in Rajasthan, India

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Introduction

The biodiversity of plant and animal species both domesticated and wild used for food by humans (referred to here as agricultural biodiversity—ABD) is one of the most important assets for rural households, particularly for the poor in marginal areas such as the drylands of the developing world. A contribution of Bioversity International to the Dryland Systems CGIAR Research Programme (CRP) [<http://drylandsystems.cgiar.org/>] has been to examine systematically the diversity of these species in CRP target sites in Mali, Ghana, Malawi and India. Bioversity and partners have carried out a set of Agricultural Biodiversity Assessments in these countries. In the case of Rajasthan, the selected sites include eight villages in the three districts of the state of Rajasthan: Balmer, Jaisalmer and Jodhpur. The specific villages are: Damodara (26°54',70°43'); Deda (26°94',70°43'); Dedhu, (27°20', 71°45'); Dhirasar (25°27', 71°11'); Dhok (25°29', 71°01'); Govindupura (26°49', 73°05'); Mansagar (26°45', 73°08'); Sankadiya (27°29',71°41')¹.

The objective of the ABD Assessment is to identify and quantify all the useful plant, animal, and aquatic species utilized by rural households and communities in the Dryland Systems CRP sites, as well as information on markets attended and general socioeconomic household characteristics. This information will be used to characterize three dimensions of ABD: (1) diversity in the production system, including on farm and common lands; (2) dietary diversity; and (3) market diversity; in terms of the elements and relationships involved and the exogenous factors that influence their status and dynamics. These data will be the basis for analyzing the roles of ABD in the lives and livelihoods of these rural populations in order to identify entry points for designing and implementing interventions that contribute to improve their well-being.

The ABD Assessment consists of two parts:

- (1) a series of focus group discussions (FGDs) to elicit the local knowledge about the agricultural and wild biodiversity present in the study areas in order to generate: (a) an inventory (list) of all useful plant, and animal species used by local communities for human food; (b) an inventory of foods consumed; (c) an inventory the markets

¹ In the case of the FGDs, the discussion took place in the village of Meghwale ki dhani instead of the village of Sankadiya. However, the household survey took place in the villages reported above.

attended to sell and buy different types of products.² All the FGDs include both males and females in their composition. Effort should also be made to have different social categories of people in the study areas be represented in the FGDs. This should be done in four of the eight villages included in the exercise.

(2) a household survey with a representative random sample of 30 households per village for the eight villages that were selected in the state of Rajasthan for a total sample size of 240 households.

(a) One that elicits information on the ABD use by the household;

(b) Another that elicits information on foods consumed by specific members of the household.

The criteria for determined to whom each section should be applied to is presented in the appropriate section.

. The number of participants per group and their composition will be based on GRAVIS' experience in the field and organized accordingly (we do not want a very large group, so probably between 8-15 participants/group, but again this will depend on GRAVIS' judgment).

Protocol for the Focus Group Discussions (FDG)

The FDG will elicit information on (a) biological diversity – on farm as well as harvested from forest and community land, including crops, trees, grasses, and domestic animals; (b) foods consumed in house and also purchased from market; and (c) a list of markets attended by households in the village. An important principle to keep in mind during the FDG is the need to capture as much diversity as possible, particularly for those species used by few people or even rarely. Therefore, it is important to probe for additional species, every species is important, no matter how insignificant it may appear to be.

For the useful biological diversity on farm, information will be elicited for the following categories:

1. Useful plant species produced in the farm, including those in kitchen gardens (annual)
2. Useful tree and shrubs species in individual lands (perennial)
3. Useful grasses in individual lands (annual and perennial)
4. Useful wild or semi-wild species harvested from forest area and community land
5. Domesticated animals

² Markets are understood here in the widest sense, as the places where households purchase and sell items, thus this can happen in their own villages or even house with itinerant traders, etc. It is not restricted to village markets or specific locations.

To elicit the information a modified four-cell method will be used. It will elicit information on species that are grown by:

- (1) many households in a large area within their individual farms;
- (2) many households in a small area within their individual farms;
- (3) few households in a large area within their individual farms;
- (4) few households in a small area within their individual farms.

Large or small area does not refer to the total area in the village, but to individual farms (the absolute size of the landholding may be small, but a large part [cases 1 and 3] or a small part [cases 2 and 4] is devoted to the species).

In the case of tree and shrubs, as well as domesticated animals the first four cells will be modified as follows:

- (1) many households with many trees/shrubs/animals within their individual farms;
- (2) many households in a few trees/shrubs/animals within their individual farms;
- (3) few households in a large area many trees/shrubs/animals within their individual farms;
- (4) few households few trees/shrubs/animals within their individual farms. The other three categories remain the same.

For the foods consumed, group members will be asked to free-list foods that are available in their village –consumed by them or by others—covering all seasons throughout the year. To facilitate the discussion, it can be organized around breakfast, lunch, dinner and as snacks any time during the day. It is very important to probe for foods consumed rarely, as well as industrialized and processed foods. The exercise should elicit as many foods as possible, regardless of whether they are self-produced, purchased, or obtained by any other means (food aid, gifts, barter, etc.), in the village or elsewhere.

For markets, participants will be asked to name the markets they and other people in their respective village attend, this is, places where they go to purchase or sell different types of items (including their own village) and distance from their village for the following categories of items:

- (1) foods;
- (2) groceries;
- (3) clothes;
- (4) domestic animals.

So the names of all these places should be elicited first and then for each one, we will ask which of the four types of items are purchased, sold or both in that market place.

Protocol for the Household Survey on Agricultural Biodiversity (ABD)

The household questionnaires will be carried out to the extent possible with the same households interviewed for the ICRISAT baseline survey carried out in the same villages. It is important to use an identification system that allows linking the ABD survey with the ICRISAT baseline survey for these households.

The survey consists of four components:

- (a) useful biological diversity on farm, harvest from forest and community land;
- (b) dietary diversity;
- (c) markets;
- (d) general socioeconomic information

The survey is divided into two questionnaires. One elicits information on biological diversity, markets and general socioeconomic information. The second one elicits information on dietary diversity.

For the components on biological diversity, markets and general information, the questionnaire will be applied to the head of the household and spouse together. If not possible, it should be filled by an adult in the household involved in agriculture.

For the dietary diversity component, filling of the questionnaire presents different possibilities that should be chosen depending on the features of the household interviewed.

- Ideally, the questionnaire should be filled by a woman in the household between 15 and 49 years of age that is the mother of at least one child between 6 to 59 months. So the team will first inquire if the household has such a member. If there are several women in the household with these characteristics, one of them should be chosen randomly to fill the questionnaire. If the mother has several children that fit the criteria, only one of the children should be chosen randomly to be the reference for the dietary diversity questionnaire. Therefore, the survey will elicit information on the foods consumed by one mother and her child in the last seven days, as well as the frequency of consumption.
- If there is no mother with a child that fit the criteria, then the questionnaire should be filled by a woman between 15 and 49 years of age (for example the mother in the household even if her children are older than the criteria of 6-59 months). In this case, the questionnaire should be filled **ONLY** for the women (not for any children), for the foods consumed by the respondent in the last seven days, as well as the frequency of consumption.

- Third, if there is no mother that fits the criteria of age, the questionnaire should be filled by whoever customarily prepares the food in the household and only for her consumption (not for the whole household) in the last seven days as well as the frequency of consumption (as in the other cases).

The questionnaire will elicit information on the foods consumed by the mother and child for the last seven days (or alternative respondent as explained above). The following procedure should be used:

- 1) The list of foods identified in the FDG will be included in the dietary diversity questionnaire organized by food group (e.g. cereals, roots and tubers, etc.). This should be done as soon as the FDG for the original eight villages included in the ICRISAT baseline are completed. The generation of the food list will be done under the coordination of Dr. Mathur as indicated above.
- 2) The dietary diversity questionnaire will contain a list of foods organized by food groups. Using the questionnaire, the mother will be asked to indicate for herself and for her child which foods she and her child had consumed in the last seven days and the previous day (yesterday) completing the same line (mother 7 day, previous day and child 7 day and previous day) and the source of food for each marked food (self-produced, purchased, gift, collected, food aid, etc.). The interviewer should go systematically down the list food by food completing the information line by line for both mother and child.
- 3) The same procedure will be followed until all foods that were consumed in the last seven days have been captured for mother and child.
- 4) Once all relevant foods in the list have been marked for both mother and child, the interviewer will go back, starting a fresh with the list to complete the number of times each food marked as consumed (frequency) the previous day; first for mother and immediately for the child for the same food. The number will be noted in the questionnaire.
- 5) After completing the form, the interviewer will complete the remaining questions at the end of the questionnaire.

For the general information, the questionnaire should be filled by the head of the household and spouse.