

GENDER TRANSVERSALITY IN EVALUATION OF TECHNOLOGICAL IMPACTS ON FAMILY FARMING AND ON ITS ENVIRONMENTAL SUSTAINABILITY

Maria das Graças Carneiro de Sena¹
Ana Maria Mascarenhas Eloy Canto²

ABSTRACT

Embrapa, Brazilian Agricultural Research Corporation, along 29 years of existence has not dedicated enough attention to researches involving social aspects of rural communities. This has happened to other similar institutions founded by the same time. Historically, such institutions have not hired professionals, like sociologists, who can carry social-related investigations. Most of the scientists work in the technical fields of agronomy and animal sciences. Social science professionals, like sociologists, anthropologists and others are defined as of support to research only. However, social research have been developed at Embrapa to better know the external public users. Under this perspective, considerable efforts have been directed to investigate the social impacts of agricultural technologies, with emphasis on gender transversality. One of the most important points of that approach relates to the insertion of gender variables into the construction of indicators of economical, social and environmental sustainability. By adopting established methodologies of impact assessment, sustainability indicators will be collectively defined taking into account the particular aspects of each family farm group. Once the set of indicators has been defined following its triple dimension (economical, social, and environmental), each production unit will be submitted to an evaluation in which a gender matrix will be applied consisting of three elements, i.e., TL = time of labor, RI = received income, and AA = accomplished activity. It is expected that the adopted methodology will show the existence of gender asymmetries. Actually, this methodology is under process of analysis and discussion with small farmers of many production units around the Northeast Brazil.

¹D.Sc. Sociologist, Embrapa/ Cassava and Fruits. E-mail: graca@cnpmf.embrapa.br

²Management of Environmental Resource Impacts Specialist, supported by CNPq. E-mail: anacanto@cnpmf.embrapa.br

Introduction

The 70's registers the phase of larger progress for the field modernization, ruled on the intensive use of chemical inputs and mechanization. In the same period, the ecology literature expanded considerably for an agroecology focus, to which some authors included the social component, derived from studies on rural development accomplished in the USA. So, the new agroecology concept starts to be established, based on an agricultural development approach, sensible to the complexities of the local agriculture. Its objectives and agricultural criteria are related to the sustainability, the food safety, the biological stability, the conservation of the natural resources and the equity, with the search for larger production.

In that sense, the agroecology is positioned as the only discipline that delineates the basic ecological principles to study, to plan, to manage and to evaluate agroecosystems of an overall point of view, incorporating cultural, socioeconomics, biophysics and technological dimensions.

About this, **Altieri** (2001) says that the *"new sustainable agroecosystems cannot be implemented without a change in the socioeconomics determinant that govern what is produced, how it is produced and to whom is produced"*, in other words, to be effective, *"the development strategies should incorporate not only technological dimensions, but also social and economical issues"*.

Based on that point, it is possible to understand the insertion of the gender analysis in the perspective of the sustainability of the agroecosystems, not only in its social dimension but in the economical and environmental.

Since that the agroecology consists of a new approach that integrates the agronomic, ecological and socioeconomics principles, it becomes possible to think and to understand the incorporation of new technological processes as well as the evaluation of their effects on the agricultural systems and on the society as a whole, from an approach in the which the gender analysis is imposed as a sustainability indicator.

The debate about sustainability is focused on productive and natural resources, in other words, priority is given to the discussion on the environmental and economical sustainability, which is not possible without the preservation of the cultural diversity that nurtures the local agriculture (Altieri 2001). The people knowledge and their practices are very valuable in the process of construction of the sustainable agriculture.

The agroecology approach gives more importance to the sociocultural characteristics and to multidisciplinary, while the traditional research is monodisciplinary. The agroecological model emphasizes the participation and the cultural integration, in other words, it promotes a

participation active, leading to the community's involvement, with high cultural integration, as well as valuing the extensive use of traditional knowledge and local ways of organization.

The gender focus in the perspective of the sustainability

Based on the considerations above and taking in account the group of historical information about the conditions of the Northeast farmers' life, in small family farm and rural settlements, it was observed that low indexes of social and economical development, as poverty, illiteracy, infantile mortality and precarious health, need to be present in the research line and agricultural development. This is possible only based on the agroecology approach, because it is sensible to the complexities of the local agricultural systems and criteria that include not only the productivity, but also food safety, biological stability, conservation of natural resources and equity.

So, the adoption of the agroecology methodology was the natural choice for the conduction of the project " Effects of the use of agricultural technology in the sustainable development of family farm production in Northeast Brazil, emphasizing the gender issues", implemented by Embrapa – Brazilian Agricultural Research Corporation, in a perspective not only of local development but adopting the principles of agroecology in the evaluation of the effects of available agricultural technologies (Sena 2001).

This project, had tried to identify how the organization of production and labor are affected by technological changes adopted by family and settled farmers, giving special attention to the forms as such processes men and women.

From the knowledge of groups reality– obtained by Participatory Rapid Diagnostic – a discussion is being promoted with all involved farmers in order to identify the needs for improving of their productive systems. Based on such information, will be proceeded an adjustment or an insertion of new appropriate practices to their needs and that promote the economical, social and environmental sustainability of the systems, as well as assure the gender equity.

The methodological procedures followed the stages as demonstrated in **Figure 1**, having as starting point the technologies generated by Embrapa –Brazilian Agricultural Research Corporation and adopted by farmers. For better refinement of the groups selection, the following pre-requirements were established:

4 Organized farmers;

4 Technology use;

4 Easiness of access to farm.

In the second step the following criteria were selected:

1 - available technology

2 - crops diversity

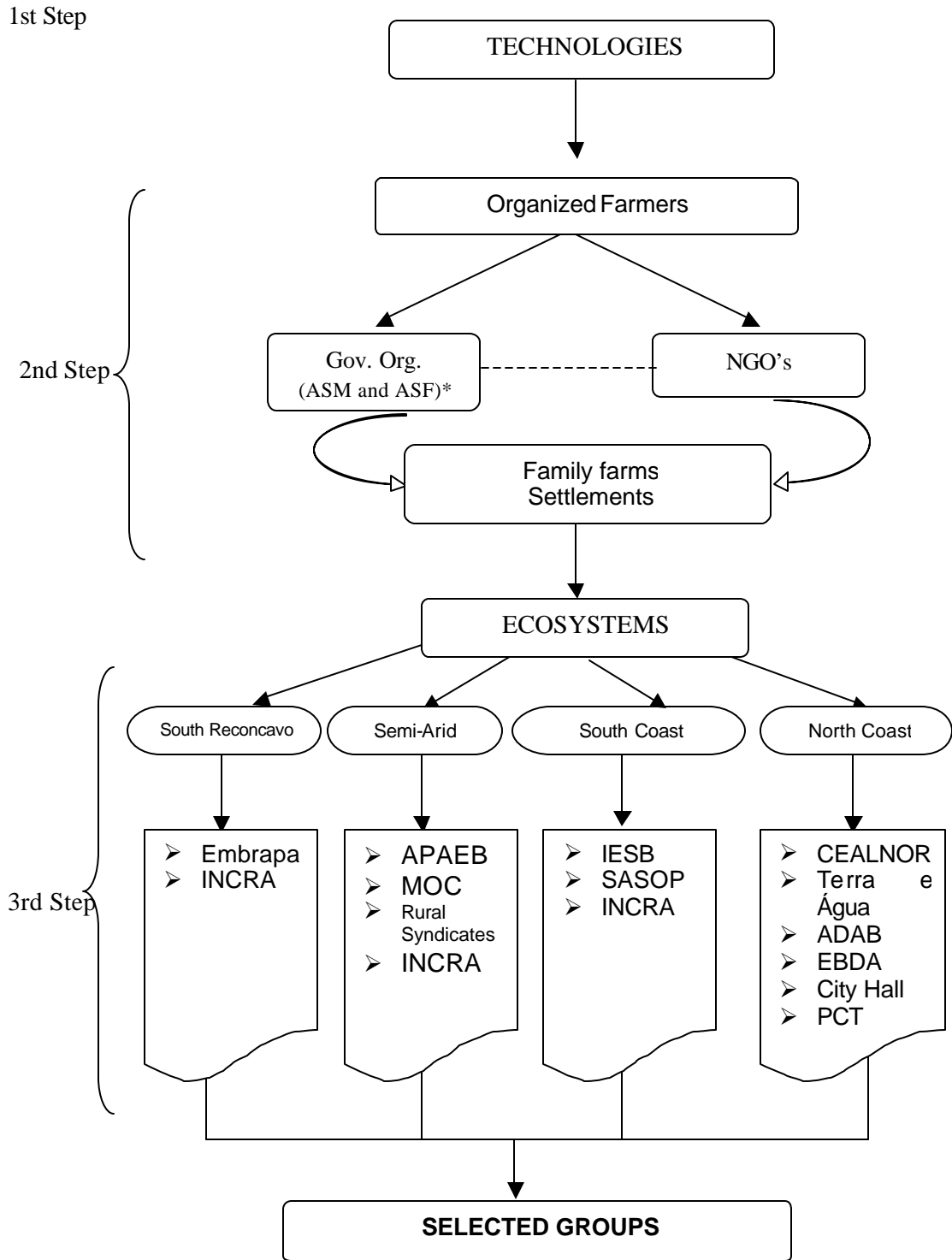
3 - age of farm organization

4 – proximity among farmers

5 - geographical location, according to the Bahia ecosystems: semi-arid, north coast, “south reconcavo” and south coast.

In agreement with that procedure, the communities in which the project is being implemented, were identified. During this step, some local government organizations and NGOs were contacted which have collaborated to select the groups with potential to participate in this project.

Figure 1. Flowchart of the procedures for the selection of farmers' groups.



· ASM = Cassava consultant team of, ASF = Fruits consultant team /Embrapa Cassava and Fruits

Scheduled actions and methodological design

After defining the groups, the next steps will follow four interactive and complementary phases, characterized by the participatory approach.

Phase 1. Rapid Participatory Diagnostic.

The adoption of the Rapid Participatory Diagnostic in the initial phase of the project is necessary condition for implementation of participatory methodology. This methodology is understood in its plural aspect, in other words, not as an only methodology but as a group of several participatory approaches. During the participatory methodologies implementation several diagnostic were accomplished by community meetings and in small groups meetings divided by sex and/or age. The same procedure will be adopted during the following-up and evaluation of the technologies.

Phase 2. Decision on the new practices to be adopted or adjust, seeking for economical and environmental sustainability of the systems and the valorization of the women's labor.

Two products of the diagnoses were expected: a) the construction of a register of the technologies in use in the family farms and in the settlements and b) the construction of a database about women's labor.

The register of the technologies, generated by the project, will indicate the desirable and undesirable characteristics presents in the technologies adopted by the family farms, serving as reference in the generation of new technological processes.

Based on those information the indicators of social, economical, environmental sustainability and of gender will be defined, together with the farmer's groups, according to **Table 1.**

The current methodologies will be considered as references, however, the peculiarities of each group will determine what is the most appropriate indicators for their reality.

Phase 3. Implementation and following-up of the new or adjusted procedures.

In agreement with the local demand, the new or adjusted procedures should have productive, post-harvest and processing technologies generated by Embrapa or institutions partners.

Since all the family farms will not be evaluated, the group will choose, among the family farmers of the project, those whose performance have been considered more satisfactory,

according the perspectives of the group, the sustainability parameters and promotion of the equity. Those family farms will be evaluated during one year and will used as laboratory to promote courses and training.

Phase 4. Collective evaluation.

The analyses of the technology effects on sustainability and the gender issues, will be a combination of quantitative and qualitative data, with not parametric statistical procedures and analysis of content.

All the results will be shared with all the project's participants.

Conclusion

Such procedures will supply information about the reality of the family farmers and settlements. It is expected results will give feedback to research and the scientist policy.

The level of conscience of all project's participants will be improved in relation to reality, productive subjects and citizenship.

Bibliography

ALTIERI, Miguel. Agroecologia: a dinâmica produtiva da agricultura sustentável. Porto Alegre: Editora Universidade/UFRGS, 2001. 110p.

SENA, M.G.C. de. Efeitos do uso de tecnologia agropecuária no desenvolvimento sustentável de unidades de produção familiar no Nordeste Brasileiro, destacando as questões de gênero. Projeto de pesquisa, 2001.

Table 1. Sustainability Indicators suggested for collective discussion

INDICATORS	SPECIFIC INDICATIVE
Sustainability environmental	Quality of the soil Health of crops or livestock Ecological integrity
Sustainability economical	Use of inputs and outputs Diversity Flow of income
Sustainability social	Access to goods and services Use of the labor Expectations Organizational efficiency
Gender	TL = time of labor RI = received income AA = accomplished activity