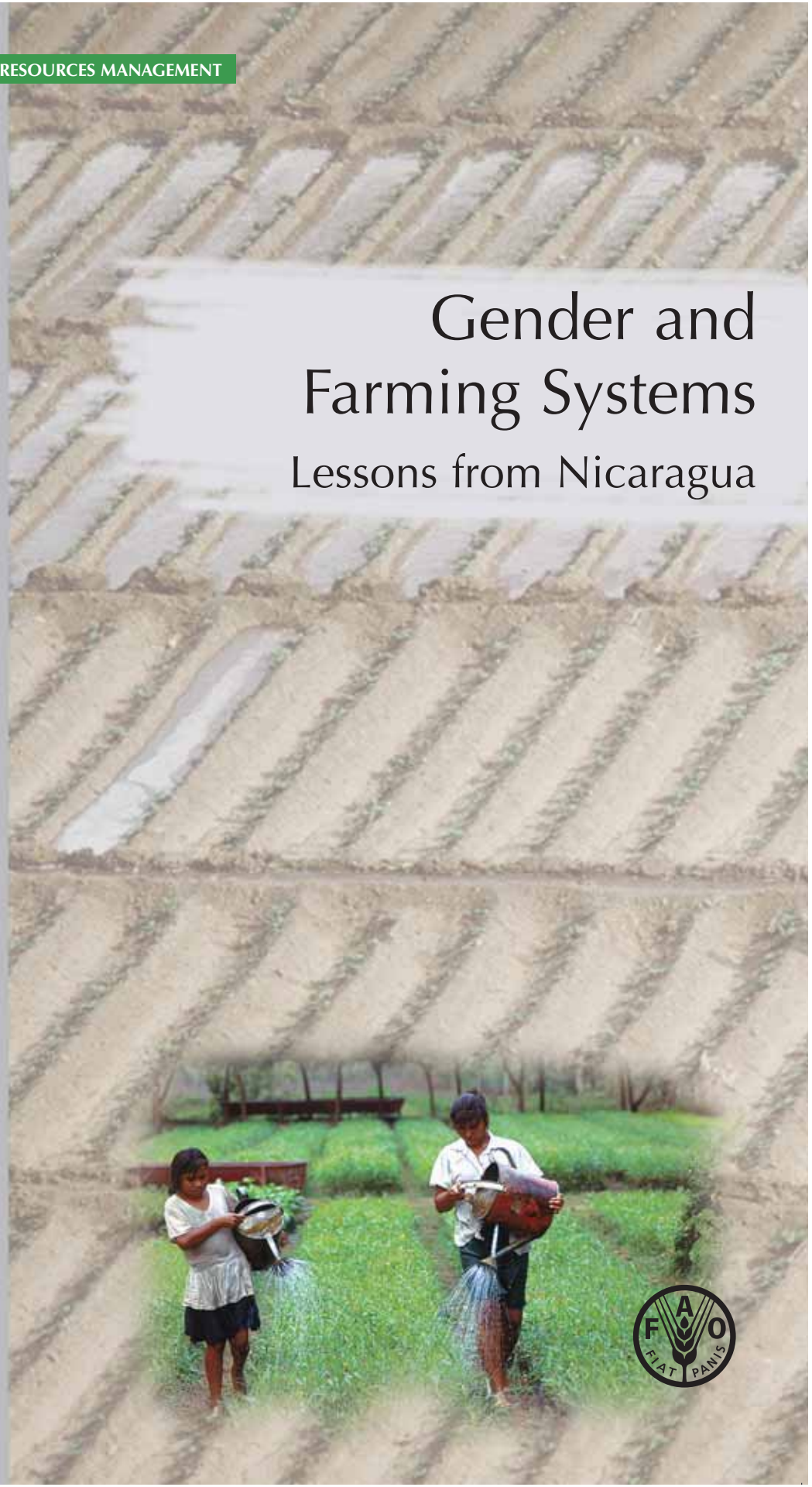


# Gender and Farming Systems

## Lessons from Nicaragua



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## Lessons from Nicaragua

Food and Agriculture Organization  
of the United Nations

Rome, 2005

The Food and Agriculture Organization of the United Nations is the specialized agency responsible for agriculture, forestry and fishery worldwide. FAO has the mandate to promote sustainable agriculture and rural development, as well as food security, for the whole population. It extends the mission to assure that women – together with men – have access to necessary resources and receive support to obtain sustainable means of sustenance and improved life quality.

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## EXECUTIVE SUMMARY

Despite the fundamental role of rural women in agricultural and livestock production, their contributions to achieving food security and sustainable development have been systematically ignored and undervalued. In recent years, however, there has been a growing interest in the incorporation of alternative models that take account of a gender dimension in development policies and guidelines.

The purpose of this study is to propose a conceptual and methodological framework that integrates a gender perspective into the analysis of farming systems. The aim is to produce a reference guide for future rural development programmes and projects. The first part of the study reviews systems and gender analysis within the agricultural context. The second part reviews the experiences of the Nicaraguan project “Strengthening the Capacity of Women in the Management of Small-scale Farm Production Units” (GCP/NIC/020/NOR). It sets out to identify the methodological findings, including the advantages and disadvantages, emanating from that project’s valuable experience, rather than to carry out an actual evaluation of the project.

When applied to agriculture, systems analysis focuses on boosting productivity and production by studying the socio-economic and agro-ecological context, as well as reviewing farming systems. Gender analysis, on the other hand, examines the roles, activities, responsibilities, opportunities and constraints of each member of the community under review, and attempts to achieve greater equality between women and men within their spheres of interaction.

Although the research areas of gender and farming systems analysis intersect at various points, each has its own scope. While gender analysis takes into consideration economic production, reproduction and community participation, farming systems analysis tends to focus on the technical and socio-economic aspects of agricultural production. A conceptual framework, designed to combine both approaches, would therefore offer a better opportunity for grasping the complex and heterogeneous reality of peasant economies.

The overall goal of the Nicaraguan project was to stimulate and strengthen rural women’s participation in the community and in agricultural development in farming areas affected by armed conflict in Nicaragua. When the project activities began, a conceptual framework combining farming systems analysis with gender analysis was not available. As the project advanced, methodologies, tools, variables and concepts were adjusted through a process of trial and error to constitute such a framework.

In concrete terms, elements from systems and gender analysis in relation to agriculture were combined to produce appraisals in various communities and municipalities of Nicaragua. The aims of the appraisals were to illustrate and review

the local socio-economic and agro-ecological conditions; analyse farm production units and their strategies; design consonant farming system typologies; review the status of women in terms of their work and activities; and highlight areas that were appropriate for technological improvement. The study findings and data were then used to formulate recommendations and introduce innovations that are consistent with the needs of the local population.

This document proposes certain methodological guidelines and instruments based on the Nicaraguan experience, as well as a review of the conceptual frameworks of systems and gender analysis to be taken into account when analysing agrarian systems from a gender perspective.

Appraisals grounded in systems analysis incorporating a gender perspective allow us to understand women's and men's different roles and perceptions of their roles, as well as providing accurate information for tailoring activities to specific needs. The objective is to look at the farm family production unit from the standpoint of gender roles within the spheres of production, reproduction and community participation, highlighting the division of labour, access to resources, participation in decision-making, and felt needs and priorities.

The two steps in the process entail carrying out appraisals first at the municipality level and then at the community level, choosing methodological guidelines, tools and variables in line with the specific objectives of the study. The active participation of community members in gathering and reviewing the relevant data and defining their needs is fundamental at both stages.

The microregional study provides an overview of the agro-ecological and socio-economic characteristics of the area, a concrete understanding of women's status within the local context, and a clear idea of past and current trends in the agrarian system.

The analysis of the community involves a number of methodological steps, ranging from an overview of the local history and geography to an analysis of the expressed needs and priorities of the local inhabitants. Some important steps in the process include an analysis of community organization, a review of the local farming systems and their underlying logical sequence, and the identification of farming system typologies, bearing in mind the role of rural women within the farm production unit.

Although the breadth and scope of the appraisals will obviously vary in accordance with the depth of the analysis desired, any ensuing recommendations should take into consideration the various farming system typologies identified, thus ensuring that models for technical improvement consider both the specific features identified and their diversity.

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## Introduction

“Who says what, to whom, why, when and how?” These questions sum up the issue of communication as expressed by Marshall MacLuhan.

“Who says what?”<sup>1</sup> Prepared by an agronomist with a background in systemic analysis, this paper discusses the incorporation of gender into the analysis of farming systems.

“To whom” are these discussions and methodological guidelines addressed? To rural development agents involved in the preparation of farming systems, experts on the issue of women’s participation in development, gender experts and those responsible for rural development project planning, formulation, implementation, monitoring and evaluation.

“Why?” What is the purpose of this document? There is consensus on the need to integrate a gender perspective into rural development programmes and projects. Experiences have matured in this area; however, constraints still arise – from the initial appraisal to the final evaluation – when incorporating the analysis and strategies to improve the living conditions of rural women into the analysis and strategies to improve farming systems.

“When?” Based on existing experiences in preparing appraisals, among other things, it is now possible to review certain problems that arise, learn useful lessons from them, and discuss proposals for methodological and procedural guidelines.

“How?” This document is divided into three chapters. The first illustrates the main aspects of the relevant conceptual frameworks of systems and gender, discussing ways of combining the two approaches. The second reviews the methods used in the project Strengthening Women’s Management of Rural Production Units in Nicaragua, as well as the most significant lessons learned from this concrete experience. The third chapter concludes with some proposals for procedural and methodological guidelines that can provide a useful point of departure for future rural development projects.

## I. Gender and systems approach: main considerations

### 1.1 Introduction: agriculture, gender and appraisals

#### *Transformations in agriculture and appraisals*

Activities defined as “development programmes” or “projects” involving major financial, human, institutional and technical resources at the local level are generally designed to “improve the living conditions of rural households and increase their agricultural production”. These programmes and projects affect the progress of rural households and their production units.

Many agricultural development programmes and projects are unsuccessful because those who design and implement them know little of the rural setting in which they operate.

<sup>1</sup> This document has been prepared by the Women in Development Service of FAO. It is based on the experience of the Nicaraguan project (GCP/INT/020/NOR) and methodological documents prepared by the FAO project team in Nicaragua. Section three, “Methodological and procedural guidelines”, draws heavily on the document *Propuesta metodológica de diagnóstico con enfoque de Género en los sistemas de producción agropecuarios* by Felipe Martínez Sánchez, June 1997.



Often, the proposed solutions are based on preconceptions rather than solid observations of the actual situation at the field level. Questions such as “When might one specific cropping technique be preferable?” “What would be the economic impact on local farmers of introducing this or that technique?” and “What do we mean by an appropriate variety?” need to be asked.

Clearly, the answers to these questions depend on the specific local conditions such as soil type, climate, technologies used, market threats and opportunities. In addition to these variables, rural development agents<sup>2</sup> should also be aware of other social factors, such as the structure and dynamics of the rural societies in which they work and to which agricultural problems are related. Familiarity with the reproduction processes of farm production units, as well as with the inner dynamics and trends of the surrounding community, is also necessary.

The comparative failure of various programmes and projects has produced a situation in which many experts now insist on conducting a pre-project appraisal and analysis before any action is taken. Understanding the local rural situation, current agricultural transformations, agrosocio-economic dynamics and changing patterns in rural production units is crucial if programmes and projects are to have a significant and successful impact.

An in-depth appraisal is essential in defining programme and project objectives. The value of implementation, monitoring and evaluation of results and activities in a project is highly subject to an accurate interpretation of the situation under review – just as the

success of a prescribed cure in medicine depends largely on whether the illness has been correctly diagnosed.

In other words, if a programme or project is to improve the living conditions of the target group, it must be relevant to the ongoing transformations in the rural societies and social groups involved. This means that the proposed changes or improvements must be feasible within the local context, and compatible with the felt and unexpressed needs of the population. Relevance in terms of the social, economic and environmental transformations already under way means having at hand a broad and fundamental appraisal of the situation, and being aware of the overall issues. Overall, a clear and shared understanding of these issues is essential if the planners, field officers, women and men farmers and other local stakeholders involved in the project are to work together efficiently, pooling their resources.

In recent decades, application of the systemic approach in agriculture has led to the use of a specific appraisal method that examines the transformations under way in rural societies and in agriculture. The appraisal focuses on farming systems within the larger context of “agrarian systems” or “development”.

The systemic approach is based on the core assumption that each farmer acts in accordance with a specific farming system and family circumstances, which are determined by the productivity and constraints of the farm production unit. If family labour is abundant and underutilized, but land is scarce, the farmer will tend to favour labour-saving

<sup>2</sup> These include planners, technical experts, field officers, extension workers, gender and development experts.

technologies (giving a higher yield per unit of farm production), and will probably also seek to engage in off-farm activities to supplement the family income. If instead capital is available and labour is scarce, the farmer will probably give priority to labour-extensive techniques (maximizing productivity for each working day).

Furthermore, according to the systemic approach, a detailed knowledge of the farming strategies and practices of the production units must precede proposals for specific technical changes. A clear picture of the socio-economic objectives and farming characteristics of the various types of farm production units is essential to ensure that the innovations to be introduced into the farming system are consonant with its resources and with its patterns of decision-making and behaviour. Taking into account all these aspects increases the chance of farmers utilizing the given innovations.

The role of a systemic approach in agrarian research is to adapt the recommendations designed by research centres in order to transform farm household practices and techniques. As technical or economic innovations proposed for farm production units had previously only very rarely proved compatible with the varied and highly complex conditions of agriculture,<sup>3</sup> from the early 1970s onwards, the trend in agronomic research has been to apply a systemic approach.<sup>4</sup>

In the context of development programmes, the purpose of the systemic approach is to formulate and implement strategies designed primarily

to improve farming techniques and productivity.

### *Transformations in gender roles and appraisals*

In the last few decades, agriculture has undergone important transformations. Parallel to this, serious questions have arisen on gender roles and relationships. The agriculture sector has been subject to major technological, economic, social and environmental transformations. Consequently, new social realities have emerged, in both rural and urban areas. With reference to gender, there have been clear and significant changes in the relationships between women and men, and a remarkable change in the role, image and position of women in society. These changes have also altered patterns of behaviour and culture, as well as the economic and social contexts.

Although the evolution in behavioural patterns and responsibilities in relationships between women and men within the household and at work is still slow, legislation increasingly recognizes greater equality of rights for all. The principle of equal incomes and equal access to education and other public services is increasingly widespread. At the same time, there is a growing female presence in the decision-making, policy-making, economic and institutional spheres.

Rural development projects showed little concern for gender issues until the 1980s. The usual "target groups" were "rural families" or "poor peasants". Some projects highlighted the productive role of women, but primarily as an extension of women's reproductive role, while

<sup>3</sup> Traditionally, such innovations were based on research that focused on a "topic", or they were purely "technical" or "productivist", proposing "technology packages" that failed to consider (or at least to give sufficient weight to) the specificities of the farm in question.

<sup>4</sup> Based on such disciplines as geography, anthropology, economics and agronomy, and drawing on different schools of thought (from the English-, French- and Spanish-speaking spheres).

others had women-oriented components, but ignored the dynamic evolution of gender relationships.

In the last two decades, gender analysis methods have been promoted as significant factors for studies and assessments of socio-economic transformations. It is interesting to note that some of the components forming the conceptual framework of the gender analysis approach, i.e. the criterion for equality in gender roles, are of relevance in the fields of sociology and economics. However, in this type of approach, the search for equal opportunities and the participation of both women and men establish that the definition of sex should not represent a condition for the accomplishment of human rights and that the division of gender roles should not lead to subordinate relationships. Gender analysis has thus taken concepts from other disciplines and tailored them to fit its own needs and objectives.

The analysis of gender relations is now becoming widespread in studies and appraisals of agriculture. Gender has been incorporated as a collateral aspect of the different participatory rural appraisals that have been promoted during the past decade as instruments for participatory planning at the community level.

The strategic nature of adopting a gender perspective as a tool to promote sustainable development was recognized by the United Nations during the Fourth World Conference on Women, held in Beijing in 1995. The Beijing Platform for Action stipulated that economic growth, social development and environmental protection are objectives closely related to the progress of women. Women's and

men's active and equitable participation in development, and their equal opportunities, represent fundamental aspects in the eradication of poverty and in achieving sustainable human development.<sup>5</sup>

In recent years, there has been a growing interest in combining the approach to farming systems analysis with that of gender analysis. Unquestionably, there are opportunities for mutual enrichment, as well as enhancing the effectiveness of both, by combining their separate fields of study and analytical targets and methods. This paper is intended to be a further contribution to the discussions in this field by exploring ways of achieving this objective and offering some practical and theoretical suggestions for future actions and research.

## 1.2 Systemic analysis

The analysis of farming systems is broadly based on systems theory – a tool that is applicable to any subject of study (a living organism, a factory, an institution, a vehicle, etc.). It is worth examining some of the main features and principles of the systemic theory, before looking at the systemic approach applied to agriculture. The following are some general guidelines that are useful for the study of any subject or object.

### 1.2.1 Background to the basic theory of systemic analysis

In L. Von Bertalanffy's General Systems Theory: foundation, development, applications (1976), a system is defined as "a set of components interlinked by relations that confer upon them a certain organization in order to accomplish certain specific functions". Other similar definitions (De Rosnay,

<sup>5</sup> United Nations. 1995. *Beijing Declaration and the Platform for Action*.

1975) describe a system as “a set of components that interact dynamically, organized around an objective”.<sup>6</sup>

To analyse a system, it must first be circumscribed within certain boundaries, then its components must be identified, along with everything that, although not lying within the system (meaning the rest of the world), is related to and conditions its functioning. A farm family production unit, for example, can be described as a system combining human resources and a set of physical components utilized in the farming process. In this case, the system’s boundaries are those of the nuclear family and of the territory where the farming activity takes place – the farm, land parcels, etc. – and the various factors of production. The components of the system are the members of the nuclear family and the resources involved in the farming process, such as herds, tools and implements, buildings, etc. The rest is what lies outside the system: neighbours, family outside the nuclear unit, the natural resources surrounding the unit, the market supply and demand, public community services, etc. Before making an in-depth analysis of the system’s components, it is necessary clearly to identify its boundaries.

The analysis of a system combines the following aspects:

- Structural aspects: a description and study of its components, organization, and complexity. In the above example, the structural aspects would be the rural family; land, water, wooded areas and other natural resources to which the family has access; the spatial organization of the farm production unit, etc.;
- Functional aspects: a description and study of the interactions and exchanges among these components, and of the respective roles that they play. In our example, such aspects would be the type of work involved in farming; the interactions between livestock and cropped parcels of land; and the exchanges or flows among livestock, crop production, etc.;
- Dynamic aspects: the study of how the system as a whole is evolving, including its components and their interrelations. In the aforementioned example, this would include changes in family composition, biological reproduction, livelihoods, income, economic reproduction (impoverishment, reproduction under conditions of stability, expanded reproduction and accumulation, etc.).

A system can be viewed as the combination of ranked and interdependent subsystems, where each component can be analysed as a separate system (these could be livestock and cropping subsystems in the aforementioned example).

In short, the structural analysis of a system entails studying its composition. This consists of the study and description of the system’s components, focusing only on a limited number of significant elements.

The functional analysis of a system examines the relationships and exchanges among these components (i.e. the exchanges, interactions and mechanisms of regulation and control within the components).

<sup>6</sup> A system is a representation of reality: it is the outcome of modelling, the product of operations analysis and synthesis of the subject of study to learn more about its structure, functions and evolution. “The system is not the reality; it is the analytical and synthetical vision of the actual object of study. This vision (...) is subject to the objectives and disciplinary slant of the analysis” (Poussin, 1987).

Analysis of the dynamics of a given system identifies past and present trends in the system's overall context and transformations over time, taking into account external influences. Such analysis normally includes a study of how the system relates to the outside world.

### 1.2.2 Basic concepts of systemic analysis applied to agriculture

The various types of systems taken into account when applying systemic analysis to agriculture are as follows:

- The agrarian system. Its boundaries are those of a medium-scale (also called "meso") territorial unit, which could be a microregion, community or watershed. The starting point of the study is the definition of boundaries on the basis of physical and territorial attributes. Its principal components comprise the physical environment (with its ecosystem, natural resources, infrastructure, etc.) and the local rural society (with its social groupings, institutions and so forth). The society utilizes and exploits this environment, modifying the ecosystem to meet its needs.
- The farming system. In this case, the constraints of the system, at the level of the farm or agricultural enterprise (smallholding, large estate, farm family production unit, etc.), are those of the production unit, whether family, entrepreneurial or State-owned in nature. Its principal components are the managerial, administrative and decision-making bodies, as well as the means of production present in each unit. The latter include: land, water, wooded areas, plant and animal genetic resources; inputs; farm tools and

technologies; farm labour (adults and children, family members, community workers and salaried labour force); fixed capital (buildings, tools, means of transport, machinery for production, storing, processing, marketing, etc.); working capital (self-provided, formal and informal credit, etc.); and skills (technical assistance, education, agricultural extension, traditional culture and training).

Possible subsystems within the farming system are the livestock subsystem at the herd level, and the cropping subsystem at the level of land parcels. Sequences of farming techniques called "technical itineraries" are applied in both cases.

#### The agrarian system

The set of components of the ecosystem and local rural society, and the relationship between the rural society and the territories in which it operates are referred to as the "agrarian system". Reference to an agrarian system entails a geographic unit (geophysical, administrative, etc.). The farm production units are subsystems of the agrarian system.

There are a number of definitions pertaining to the agrarian system concept. However, the most renowned is the one offered by Mazoyer (1985), which places the agrarian system as an historical and social artefact:

"An **agrarian system** is a historically constituted and sustainable way of exploiting the environment, a system of forces of production adapted to the bioclimatic circumstances and necessities of the moment."<sup>7</sup>

<sup>7</sup> Other schools of thought, particularly in the English-speaking context, refer to the "circumstances" or the "development context", and a "farming system based on a given dominant crop association" (e.g. Andean potato-based farming systems). Systems concepts are more developed within the agrarian system concept.

Although widely diffused, this interpretation of the agrarian system has been subject to several criticisms. For instance, while one argument sees Mazoyer's definition as referring to the system as a means of exploitation (i.e. viewed from a purely human and environmental utilization standpoint), another argument regarding the environmental and social dynamics questions the feasibility of obtaining a system that is in equilibrium with certain bioclimatic conditions and specific needs. In other words, it is important to highlight that agrarian system analysis provides an understanding of the environmental, economic and social trends involved, as well as the ongoing transformations of agriculture and rural society within a microregion – in terms of its specific context and the factors influencing that context. In this way, agricultural development is perceived as the process of transformation of an agrarian system. That is, the process of change taking place within the web of relations between a rural society and the territory and environment in which it operates.

To summarize, use of the agrarian system concept facilitates the identification and study of the dynamics in which development programmes plan to intervene. The appraisal of zones helps to understand ongoing transformations, local agrarian history and current trends that explain the present and future situations of individual production units.

### The farming system

The farming system should be understood within a micro-economic context,

"A **farming system** is the spatial and temporal *combination* of certain resources derived from the *labour force* (family, paid workers, etc.) and various *means of production* (land, water and irrigation systems, plant and animal genetic resources, credit and capital, buildings, machinery, implements, etc.), in order to obtain different *agricultural productions*" (Dufumier, 1984).

as it refers to the production unit or agricultural enterprise.<sup>8</sup>

The system operates according to the particular farming logic of the household unit, pursuing its specific socio-economic objectives. Decisions concerning the management of the system are considered to be rational (assumption of consistency of the system), meaning that the production unit mobilizes and uses certain means in a coherent manner to achieve the desired socio-economic objectives. Such "logic" varies from one farming system to another, according to the available resources, external influences and the particular strategy adopted (e.g. survival with short-term horizons, simple reproduction of the unit, accumulation, etc.).<sup>9</sup>

It is important to note that application of the farming system concept to a rural economy, particularly when referring to the farm family production unit, assumes that the units of production, reproduction, residence, consumption, accumulation and the like are identical aspects of the system. In reality this is not the case. Although they overlap to a considerable extent, they are rarely totally identical. Nonetheless, in some cultural contexts, such as those

<sup>8</sup> In this case "farming systems" and "sistemas de producción" refer to identical realities.

<sup>9</sup> The use of the concept "farming system" has been expanded to designate the farming system "types" identified in a specific agricultural territory, in addition to a specific system of a given farm production unit. The term "farming system" refers not to the simple microeconomic system of a given farm production unit, but to the groups of farms within a community that share certain specific characteristics.

prevailing in Latin America, social, historical, agrarian and religious spheres have produced a high degree of correlation among these aspects. The farm family production unit (FFPU) corresponds to what has survived of the “domestic production mode” (Sahlins, 1972) or the “domestic agricultural community” (Meillassoux, 1975). Sahlins prepared a “domestic production mode” model based on farm production characteristics from a gender perspective. Main aspects of the Sahlins model include division of labour by sex, the “introverted” circulation of domestic products, a predominance of the value of use over the value of exchange, and the fact that within the domestic unit, commercial exchange is ignored.

Referring to the FFPU and the peasant sector as the basis of out-migration for salaried workers, Meillassoux points out that “the domestic farming community, through its ordered capacities for agricultural production and reproduction, represents a form of integral social organization that has persisted since the Neolithic era, and upon which rests even today a major portion of the reproduction of the labour force necessary for capitalist development.”<sup>10</sup>

### The cropping system

A cropping system is defined by Sebillotte as the area covered by a land parcel that is homogenous in terms of its crops and technical itineraries. Several cropping systems may coexist in a farm family production unit, constituting a cropping combination or “plant production system”.

The aim of studying a cropping system is to understand the patterns of plant population (growth of crops, their spatial distribution, crop rotation over time, competition with weeds, etc.), the technical itineraries in use, production rates, labour and land productivity, and crop yields.<sup>11</sup>

### The livestock system

This subsystem refers to animal production activities. It consists of grouping all the animals together as a herd and applying to them all the elements of the technical itinerary, i.e. breeding, reproduction, animal health and hygiene. For animal production it is the equivalent of the cropping system for crop production. Nonetheless, given that the time and population variables are different, a herd may not be assimilated to a land parcel or an animal to a vegetable; they are analysed separately as subsystems. Therefore the existing interrelation takes into account the complementary or competitive use of resources or their general mutual contributions to the system’s functioning.

### The technical itinerary

With reference to crops, the technical itinerary has been defined as the “logical, ordered sequence of techniques by means of which the environment is controlled and made to produce” (Sebillotte, 1974). It comprises the technical operations and activities applied to a plant or animal population (normally livestock and herds). Knowledge of the technical itinerary makes it possible to choose between alternative methods that are appropriate

<sup>10</sup> Meillassoux introduced the prospect of a simultaneous and *parallel observation* of the functions of production and reproduction in FFPU, granting equal importance to both. This opened up new ways of studying farming systems.

Sahlins stresses the *absence of commercial exchange within the peasant unit* among members of the same family. This continues to be a dominant feature of rural economies in developing countries.

<sup>11</sup> In the English language literature, the cropping system as defined by Sebillotte is often used interchangeably with “cropping pattern”.

to the operation of the system. The roles of rural family members and the techniques used can be analysed to determine how they fit and operate within the farm production unit, in order to be able to design alternative roles and techniques.

To summarize, within the systemic approach applied to agriculture:

- The agrarian system represents the agrarian situation at a given scale, which is generally related to the microregional level. It takes account of the full complexity of the local rural society, with its ecosystem and ensemble of technical, social and economic relationships that are established by the community under review within and outside its own confines. The farm production unit, in turn analysed as an autonomous farming system, is a basic component of the agrarian system (farming systems are therefore subsystems of the agrarian system).
- A farming system is made up of various cropping and livestock systems whose management and other decisions come under the responsibility of the family. Cropping and livestock systems are ranked as subsystems of the farming system.

### ***1.2.3 Key aspects of systemic analysis applied to agriculture***

The analysis of farming systems is applicable to all types of agriculture. Of particular relevance to rural development is the "peasant economy", with its characteristic "farm family production units" (FFPUs). From the standpoint of agricultural production, FFPUs are the agricultural production units, while from a general social standpoint they are consumption and accumulation units, in which all family members are bound in

the familiar economic dynamics of consumption/accumulation, which are considered an overall situation.

A preliminary phase of a systemic approach usually involves a socio-economic and agro-ecological analysis of the area of intervention. The goal is to identify the characteristic components of a specific municipality, watershed, administrative area, etc. in order to analyse it subsequently as an agrarian system.

The next step is to analyse the agrarian system's production units, which entails describing and reviewing such units and, within these, the livestock and cropping subsystems with their respective technical itineraries. During this process, relatively homogenous broad categories of production units are identified, leading to the designation of typologies with specific, case-by-case criteria.

Farming systems derive from the above analysis, where the productive and socio-economic logical sequence (also referred to as "strategies") of any of the various types of production units identified can be deduced within the microregional context.

Appraisals of this type facilitate the understanding of a hidden reality, the introduction of technical and agronomical innovations, the reorganization of existing farming systems, or the incorporation of either alternative farming systems or cropping and livestock subsystems. The analysis is followed by experimentation, demonstration and tailoring of the agronomic innovations selected to the actual conditions at the field level; this process is referred to as validation or verification. The final phase is to monitor and evaluate the effects of



the intervention on farming productivity, income and environmental balance.

The analysis of farming systems as applied to rural economies focuses on the farm family production unit as a whole, without differentiating among the individual behaviours and strategies of its members. Therefore, in this context, technical recommendations lack the data and analytical basis to promote a balanced, gender-responsive approach within the FFPUs, which takes into account individual family members. One way of bridging this gap is to integrate gender analysis with systems analysis.

### 1.3 The importance of gender as an analytical category

#### 1.3.1 Historical background

Despite the indispensable socio-economic role played by women, their full participation in the development process and their opportunities to benefit fully from such a process are limited. One of the prime concerns of the various gender methodologies<sup>12</sup> has been to analyse this situation with a view to overcoming the aforementioned obstacles. Two approaches that deserve special attention are the Women in Development (WID) and the Gender and Development (GAD) approaches.

WID was one of the major outcomes of the Women's Decade (1975–1985), which aimed at strengthening the productive role of women in developing countries. WID identifies women as the direct focus, or target group, of development programmes or projects designed both to stimulate women's participation in the productive sphere

and to bolster overall economic growth and development.

Despite the significant input of the WID approach to the analysis of women's contribution to the development process, and the inherent constraints to such participation, during the 1980s a number of methodological gaps became apparent. The WID approach tends to focus on the household as the unit of study, leaving aside women's status compared with that of men in other spheres. The GAD approach produced a significant shift in perspective; in this approach analysis of the position of women starts off by analysing the context. Therefore, development policies and programmes need to take into account such conditions. This perspective of analysis highlighted the need to focus on the roles and responsibilities of both women and men, to differentiate their participation in the decision-making process and to foster changes in social structures, values and behaviour, in order to improve women's living conditions.

Gender-responsive analytical methodological tools and concepts tailored to the GAD approach are now available. Particularly, but not exclusively, as part of the Socio-Economic and Gender Analysis Approach (SEAGA) developed by International Labour Organization (ILO), the United Nations Development Programme (UNDP) and FAO. SEAGA proposes a systematic review of six related and socially relevant fields: the environment, economics, society, culture, demographics, and policy-making. Its purpose is to provide a conceptual tool kit and practical lessons for research and action, with the goal of acknowledging and considering the functions of

<sup>12</sup> Such as the Gender Roles Framework, the Development Planning Unit Framework, the Social Relations Framework and the Feminist Economist Frameworks.

gender and enhancing equality between women and men.<sup>13</sup>

### 1.3.2 Concepts and gender roles

FAO's Plan of Action for Women in Development (1996–2001) defines gender and gender roles as follows:

“Gender refers not to women or men *per se*, but to the relations between them, both perceptual and material. Gender is not determined biologically, as a result of sexual characteristics of either women or men, but is constructed socially. It is a central organizing principle of societies and often governs the processes of production and reproduction, consumption and distribution.” (FAO Plan of Action for Women in Development, 1996–2001.)

In other words, gender refers to men's and women's social responsibilities within society and in family contexts. These responsibilities can vary considerably within cultures and from one culture to another, and are subject to change.

“Gender roles are the socially ascribed roles of women and men, which vary among different societies and cultures, classes and ages, and during different periods in history. Gender-specific roles and responsibilities are often conditioned by household structure, access to resources, specific impacts of the global economy, and other locally relevant factors such as ecological conditions.” (FAO Plan of Action for Women in Development, 1996–2001.)

Thus, gender roles are learned behaviours. Women and men in a given

society are each allocated activities, responsibilities and functions that define their position within the group. These gender definitions are usually related to other variables, such as age, social class and ethnicity. Gender roles are not immutable, and can vary as the result of changing social conditions (FAO/ILO/UNDP/SEGA, 1997).

### 1.3.3 Gender analysis

Gender analysis conducted within a specific social group is an instrument for studying relations between women and men by examining the activities, responsibilities, opportunities and constraints regarding resources, decisions and the execution of personal activities in the group under review. Essential questions in this type of analysis are: Who does what? When? Why? and For whom?

“Gender analysis seeks answers to fundamental questions such as who does or uses what? How? and Why? The purpose of gender analysis is not to create a separate body of social knowledge about women, but to rethink current processes – such as natural resource use and management, economic adjustment and transformation, or demographic changes – to better understand the gender factors and realities within them. Armed with this knowledge, it should be possible to avoid the mistakes of the past and tailor interventions to better meet women and men's specific gender-based constraints, needs and opportunities.” (FAO Plan of Action for Women in Development, 1996–2001.)

<sup>13</sup> At the institutional and policy-making levels, a SEAGA framework seeks to promote systematic, gender-sensitive appraisals of all aspects and influences on social reality. At the field level, the goal is to promote changes in patterns of behaviour, and gender analysis of the activities and roles of the individual, the family and the community. The idea is to promote a gender perspective among women and men farmers, development agents, project planners and formulators, etc.

### **1.3.4 Key aspects of gender analysis applied to agriculture**

Gender analysis when applied to agriculture examines the roles played by individuals (women and men) in relation to the spheres of production (agricultural and non-agricultural), the sphere of reproduction, and the social or community life of a specific group. Under this perspective, and in contrast with the farming system analysis, there is a review of farm family production units (FFPUs), giving the same weight to these three spheres.

Gender analysis applied to rural societies with a focus on agricultural units makes a detailed evaluation of four pivotal or key<sup>14</sup> aspects in the areas of production, reproduction and social life.

It first looks at the division of labour by sex. Secondly, it analyses the access to and control over resources, including tangible resources (means of production, such as land and water) and intangible resources (such as knowledge). Differentiating access to and control over resources by gender is fundamental, because it affects and frequently determines the gender roles within FFPUs and communities. Thirdly, it analyses the different roles that women and men assume in decision-making and management within the FFPU and the community.

Lastly, it differentiates between practical and strategic gender needs. Practical gender needs are usually those claimed by women and men (but not families) in terms of their current and accepted social roles. Neither the division of labour nor the position of women in society are questioned. These are immediate needs perceived as such, and may include water, health, the need to strengthen productivity etc. Strategic needs, on the other hand, are those concerning women's subordinate position in society and the search for gender equality.

<sup>14</sup> Research from the University of Florida, the International Rice Research Institute (IRRI), and publications by S. Poats, A. Spring, M. Schmink, H. S. Feldstein, J. Jiggins, etc.

Summary Table:

### Conceptual frameworks for farming systemic analysis and gender analysis

#### Conceptual and ideological roots

Farming systems analysis	Gender analysis
<ul style="list-style-type: none"> <li>• Systems theory</li> <li>• Systemic research by geographers, anthropologists, agronomists and economists on the rural sector, farming techniques, rural society and the rural economy</li> <li>• Structural influences (Marxist and neo-liberal)</li> <li>• Research development</li> <li>• Sustainable development</li> <li>• Principal schools: <i>“agrarian systems and research into farming systems”</i></li> </ul>	<ul style="list-style-type: none"> <li>• Socio-economic and anthropological research on home economics</li> <li>• The feminist movement</li> <li>• The Women in Development (WID) approach</li> <li>• The Gender and Development (GAD) approach</li> <li>• Discussions on equality and equitable power-sharing</li> <li>• Sustainable development</li> <li>• Main approaches: on gender roles, development planning; “feminist economics”</li> <li>• Socio-Economic and Gender Analysis (SEAGA) of FAO, ILO and UNDP</li> </ul>

### Scales and objects of observation

Farming systems analysis	Gender analysis
<p><b>Micro-level</b></p> <ul style="list-style-type: none"> <li>• FFPUs as units of agricultural production, consumption and accumulation; FFPUs represented as farming systems</li> <li>• FFPU economy</li> <li>• FFPU agronomy: cropping and livestock subsystems (land parcels and herds) and technical itineraries</li> <li>• Possible technical-agronomic and economic changes</li> </ul> <p><b>Meso- or intermediate level</b></p> <ul style="list-style-type: none"> <li>• The agrarian system, the dominant general system of agricultural production in the FFPU area and/or the development context at the community or microregional level</li> <li>• The social and technical transformations of agriculture at the community or microregional level (agrosocio-economic dynamics)</li> </ul> <p><b>Macro-level</b></p> <ul style="list-style-type: none"> <li>• The decisive macroeconomic institutional and agricultural policy factors</li> </ul>	<p><b>Micro-level</b></p> <ul style="list-style-type: none"> <li>• The FFPU and the community – gender and role relationships</li> <li>• Workload division by sex in the FFPU: productive and reproductive</li> <li>• Access to, use of, benefit from and control over tangible resources in the reproductive and productive spheres</li> <li>• Gender management and decision-making in different spheres</li> <li>• Practical and strategic gender needs</li> </ul> <p><b>Meso- or intermediate level</b></p> <ul style="list-style-type: none"> <li>• Men’s and women’s participation in institutions and organizations</li> <li>• Men’s and women’s access to services (credit, extension, etc)</li> </ul> <p><b>Macro-level</b></p> <ul style="list-style-type: none"> <li>• The decisive macroeconomic institutional and agricultural policy factors</li> </ul>

## Project cycle

Farming systems analysis	Gender analysis
<ul style="list-style-type: none"> <li>• Analysis of agrarian systems or development contexts within the microregional context (meso)</li> <li>• Analysis of farming systems (micro)</li> <li>• Typologies of production systems, with their respective socio-economic logic</li> <li>• Constraint analysis of farming systems</li> <li>• Project formulation with identification and introduction of agronomical alternatives or alternative farming systems</li> <li>• Experimentation, demonstration and tailoring to actual conditions (validation) of the agronomical innovations selected</li> <li>• Monitoring and evaluation of the impact of these innovations on farming productivity, income and environmental balance</li> </ul>	<ul style="list-style-type: none"> <li>• Analysis of gender roles and women's living conditions compared with those of men in the household and in the community</li> <li>• Formulation of activities to achieve some of the following objectives:             <ol style="list-style-type: none"> <li>i) reorganizing women's triple role by reducing their domestic workload, increasing their agricultural productivity and improving their participation in organizational and community terms;</li> <li>ii) improving women's access to tangible resources (factors of production such as land, water, labour, plant and animal genetic resources, capital/credit) and their control over these;</li> <li>iii) strengthening and improving women's role in management and decision-making at the FFPU and community levels;</li> <li>iv) meeting some practical gender needs and formulating strategies for equity and equal opportunities in development</li> </ol> </li> </ul>

#### 1.4 Some conclusions

The fields of study relating to gender and farming systems analysis tend to overlap. Although their scopes and objectives do not coincide, appraisals and field activities combining the two approaches are possible. The purpose of such a combination is to coordinate agricultural production and reproduction analysis, taking into account their interrelations and reciprocal conditional factors.

This exercise recognizes the need to broaden the respective areas of study. On the one hand, by expanding systemic agricultural research, it allows an in-depth review of gender roles and an adequate integration of economic production, social reproduction and the organization of social collective life. On the other hand, by linking gender research, it becomes easier to integrate the technical, economic and social dimensions of agricultural production.

For this purpose it is essential to consider FFPU as true social and economic units, examining them simultaneously as: production units (farm, non-farm and off-farm); consumption and social reproduction units (including for procreation, education, recreation, etc.); and accumulation units (in which members share a common economic system). The present systemic overview visualizes the existing interrelation between these three aspects.

Systemic analysis sees the rural sector in its complex dynamics, thus suggesting technical and economic recommendations that are tailored to the specificities of the various typologies of farming systems. Consequently, comparative analysis and the construction of farming

system typologies are among the principal tools of this approach.

At the same time, the development of production unit typologies that acknowledge gender relations as the main prevailing variable allows a deeper insight into the strategies of the units under study. However, within FFPU there are gender-related differences because women and men participate in different ways in agricultural production, reproduction and social life. Indeed, their different ways of participation vary from one FFPU to another.

The two analytical approaches must be carefully combined in accordance with the overall goal, which is generally to ensure that project recommendations and activities concerning technical and agronomic (and thus economic) improvements are effective and equitable for both rural women and rural men, and that they are linked to the production systems and the rural family unit. For this purpose, project recommendations should not only differentiate farming systems from subsystems, but should also take into account gender disparity, as well as the obstacles and constraints that exist in the roles carried out by the household members.

Finally, it should be noted that the "tool kit" approach and the general duplication of data of this (or any other) type of appraisal are to be avoided, as both lead to an automatization of the acquisition of knowledge, renouncing an understanding and analysis of the situation, as well as wasting valuable resources, such as time, energy and information. Professor B. Sautter, a geographer and prominent figure in the

area of systemic analysis applied to agriculture, referring to such appraisals, among other methods, stated that: "There is no replicable formula for the scientific representation and analysis of agrarian systems, and the same is true for development practices, for which such representation is essential .... The worst temptation is intellectual resignation ... an attitude that, claiming objectivity and the elimination of the personal factor, draws support from a process of automating the acquisition of knowledge, or action, in the rural context .... To give priority to mechanisms, to rely on replication, is to use knowledge as a pretext for intellectual laziness, for the narcissistic pleasure of one whose desire is to remake the world in his own image " (Sautter, 1987).

The experience developed in Nicaragua by the national technical team of the project "Strengthening Women's Management of Production Units" represents an effort to develop and put into practice the analytical methodology that combines both approaches (GCP/NIC/020/NOR 1994, revision). The project came to life in response to the need to assist rural families, particularly those affected by the war in Nicaragua, with an emphasis on supporting and improving the living conditions of women working in the farming systems identified in the project areas.

## II. The Nicaraguan experience: presentation and lessons learned

### 2.1 Introduction

Nicaragua's main exports are agricultural products, such as coffee, cotton, livestock, sugar and timber. Its agriculture sector is the backbone of the national economy. In 1995, this sector contributed about, 33 percent of gross domestic product (GDP), and occupied 46.5 percent of the economically active population. The agrarian structure reflects a history of landownership concentration in the hands of a few owners. Despite attempts in the 1960s to modify the distribution of land, true agrarian reform did not take place until the 1980s (FAO, 1997). Confiscations of large holdings, expropriations and other measures gave rise to production cooperatives and farms, which were paralleled by a cooperative movement of small and medium agricultural producers.

The Nicaraguan Government of the 1990s, in tune with the changing times and the international context, promoted policies to liberalize the economy. A structural adjustment and stabilization plan was enacted and called for a public investment plan and a drastic reduction in public services, accompanied by market liberalization. This period coincided with the return of demobilized former soldiers or guerillas, both men and women, to their place of origin, as well as revision of the land reform movement of the 1980s.

This was the background to the launch, in 1992, of the preparatory phase of the project "Training and Participation of Peasant Women in Rural Development",



which continued in phase one of the project “Strengthening Women’s Management of Rural Production Units”. The overall goal was to improve the living conditions of poor rural women in central and northern Nicaragua, in the regions of Matagalpa and Esteli. These regions had been heavily affected by the armed conflict of the 1980s, incurring massive destruction of infrastructure, frequent massacres, incessant tension, displaced people, and so forth. As a result of the armed conflict, many rural households lost family members, which caused significant alterations to the family structure. Although the agrarian reform that took place in the post-war period did not discriminate against women, very few women benefited directly, and comprised only 8 percent of those granted land titles nationwide.

**Nicaragua: aspects concerning the issue of rural women**

Generally and traditionally, a woman in central and northern regions of Nicaragua assumes the role of wife and mother between the age of 14 and 19. Of the registered unions, 54 percent are common-law marriages. Land traditionally belongs to the man, as do the assets of the farm family production unit. In the case of a separation, the woman is usually deprived of access to the means of production, in particular land. An estimated 34 percent of rural households are headed by women – and this proportion is higher among the poor. The phenomenon of women-headed households grew during the years of armed conflict in the 1980s.

*Project profile*

During the preparatory phase, the project focused on identifying the prevailing dynamics of the project area. Using a systemic approach, the

agrosocio-economic conditions were reviewed and described, and the rural production units analysed. At the same time, an in-depth study of social, institutional, family and productive frameworks was carried out. This study included the limiting factors and obstacles affecting the living conditions of rural women.

In other words, the national project team selected the areas of intervention, promoted gender-sensitive participatory consultations, trained rural female leaders and identified specific technical and agronomical areas for potential improvement. In this context, the community work for the study was carried out on the basis of the following focus points:

- the agrarian situation of the project area;
- the technical and economic roles of women in the rural economic sector;
- the best way to approach the rural communities in order to foster more equitable development;
- the technical potential for generating income more effectively and equitably.

Gender-responsive systemic analysis was adopted to answer these questions, but it is important to state that the study only derives from the general guidelines of the approaches presented in Section 1. The process began with a number of methodological steps, which were gradually refined until a regular appraisal procedure had been established for the community level. The appraisal method was not established beforehand, but rather emerged as the outcome of a hands-on learning process in the field during the execution of a project that aimed to combine both approaches in an operational, practical way. The

available human resources and time, as well as the tools, relevant variables and methodological steps, had to be adapted to the local situation and to the project objectives. Another fundamental aspect of the project was the active participation of the local population in the preparation of appraisals. The appraisals led later to concrete and participatory action for development.

The project had three specific objectives:

- to strengthen women's participation in the organizations to which they belonged;
- to improve the working conditions of rural women within the household; and
- to increase rural women's income and agricultural production.

To strengthen women's participation and organizational skills in order to meet the first objective, the project undertook two activities: training was provided for women leaders; and public officials were sensitized to gender issues, with particular emphasis on the question of landownership, particularly the issue of granting women title to land parcels.

Concerning the second project objective, efforts were directed to reducing women's dual workload. First, alternative technologies (domestic infrastructure such as water storage tanks, fuel-efficient stoves and laundry facilities) were introduced to reduce the long hours that women devote to household tasks. Second, activities aimed at sensitizing household members to gender roles were conducted in an attempt to establish medium- and long-term relations of equality and collaboration between women and men. This was a three-stage process:

- discussions with women about their perceptions, roles, abilities, etc., both within the household and in the public sphere of action;
- discussions with the women's male partners regarding their identity as males;
- discussions with both men and women regarding their shared lives, from the standpoint of their understanding of gender identities and the acknowledgement of gender stereotypes that prevail in culture and practice.

In pursuit of the third project objective, new farming alternatives were introduced into the FFPU, consistent with the local agro-ecological specificities and existing farming systems, in order to improve nutrition and increase income. The target group consisted of women heads of household who are responsible for the overall management of the FFPU, and the wives or partners of male farmers (whether or not they are responsible for managing subsystems in the FFPU) who participate to varying degrees in the farming activities of the land plots managed by the men.

In this framework, the project introduced experimental, demonstration farming activities and alternative techniques for existing farming systems to increase agricultural productivity.

In short, the project adopted three fundamental aspects of the combined farming systems and gender approaches:

- characterization of the project's intervention area, and appraisals of municipalities or microregions, integrating not only economic and productive dynamics, but also social and agro-ecological ones;

- participatory community appraisals (analysis of the major existing farming systems and possible areas for technical and/or agronomical improvement, showing the potential to increase women's agricultural productivity and income);
- implementation of the third project objective by introducing technological improvements to existing farming systems, seeking above all to foster increased productivity – in order to meet food needs and increase the efficiency of the productive activities carried out by women, in both the production unit and the household.

## 2.2 Appraisals and surveys conducted at the municipality level

Meso-scale appraisals were conducted in the three municipalities where the project was to be implemented (San Ramón, Terrabona and Río Blanco/Bocana de Paiwas). The studies can be considered as three successive stages of a single process in which the methods used, the relevant variables and the tools were gradually refined to combine the systemic approach with gender analysis.

### 2.2.1 The Río Blanco/Bocana de Paiwas appraisal

The appraisal of Río Blanco/Bocana de Paiwas comprised three stages that adopted a mainly sociological approach. The first stage comprised a brief characterization of a community hit by violence and dominated by small livestock agricultural producers. The agro-ecological, physical and demographic contexts were reviewed, as well as the infrastructure, social services, general characteristics of agricultural

production and the socio-economic profile of the local farmers. The second stage examined the conditions of rural women, their participation in organizations and their status in the FFPUs with regard to their workloads and access to land, inputs and income. For this analysis, typologies were drawn up to fit women in a variety of situations: single women heads of household or women with partners, owners of land or the landless, according to the size of the family farm. The third stage of the appraisal characterized farming systems on the basis of a summary of the technical and economic results of case studies. The analysis focused on the timetable of activities and on yields and capital return, from a systems typology standpoint.

From a methodological perspective, the appraisal contributed to:

- an analysis of land tenure aspects, and the social and gender stratification related to them;
- the introduction of a new typology derived from the combination of social stratification (the socio-economic description of the FFPUs) with a ranking of rural women's situations (single heads of household or women with partners);
- the identification of potential areas of agricultural production, where new techniques designed to improve the living conditions of rural women could be introduced, i.e.: home-reared poultry and "third-season" (*apante*) crop production.

However, the systemic approach and technical and economic analysis of the FFPUs were rather superficial, as they failed to visualize their heterogeneity, excluded the criterion of gross margin (global, and per work and area unit)

and failed to identify the constraints of each system and subsystem.

**Selected aspects of the Río Blanco/  
Bocana appraisal**

- Women's estimated contribution to FFPU agricultural production in the microregion represented 20 to 40 percent of the total labour force utilized.
- Peak labour in the timetable occurred during the "third" season.
- Credit at the FFPU level was granted for a specific farming item, but families used it in accordance with their needs and those of the FFPU as a whole.

### 2.2.2 Review of Terrabona's farming and agrarian systems

The Terrabona appraisal, which was limited in terms of time and human resources, defined the selection criterion for the project area as being where women's organization was at its highest, and presented a brief general description of the area, with a focus on women. The case studies of women-headed FFPUs provided the basis for a review of the economic and technical situation of these units, as well as for recommendations on agronomical practices. The advantages of the appraisal were that it:

- utilized agrosocio-economic zoning;
- used economic analysis criteria based on the gross margin of the FFPUs, taking into account off-farm income (constituting 40 to 75 percent of aggregate income in the case studies);
- proposed gender-responsive action guidelines and technical improvements that emphasize technical training for women in small-scale crops and livestock production and post-harvest management.

However, it should be noted that the appraisal was not based on typologies of the FFPUs or the farming systems, and the descriptive part of the case studies did not provide a clear picture of the farming activities, constraints and potential of the systems under review.

### 2.2.3 Characterization of the municipality of San Ramón

The characterization of San Ramón incorporated some elements of the other studies, which facilitated the integration of gender into the systemic approach.

The appraisal began with a characterization of the general development context (concerning the prevailing demographic and agro-ecological situation, including the available infrastructure and public services) and focused later on the agricultural characteristics. A land use study was conducted, which described the main local cropping and livestock subsystems; a gender-sensitive review of the farming social sectors was carried out (traditional, reformed and formerly state-owned or worker-owned areas); and a clearer typology of farmers, which combined social stratification with farming systems, was structured and briefly described. Agro-ecological zoning of the municipality provided an overview of its evolution and microregional trends.

The appraisal reviewed the situation of women in the FFPUs, identifying their roles and typical life paths. A new typology (characterizing women as single heads of household or as wives/partners) was also adopted for analysing women's participation in farming, the division of labour (for cropping, but not livestock) and the working days of these two major

groups of women. Equally important was the identification of areas where women are predominant, such as in the rearing of small livestock (pigs and chickens), the raising of annual or perennial crops (roots and tubers, annato, grafted fruits, soybeans and pigeon pea), crafts (baskets and pottery), and food processing for market outlets.

The analytical description of the microregion concluded with a review of the local institutions and organizations. Future areas to be covered at the community level will be selected in accordance with the extent of organizational involvement, participation in decision-making and existing municipal structures. Guidelines for action were formulated as a conclusion to the appraisal.

### 2.3 Systemic and gender analysis at the community level

The analysis conducted at the municipality level was purely exploratory in nature, offering the project team the opportunity to design a methodological matrix for the successive appraisals to be conducted at the community level.

The following are the methodological steps that were followed in community-level appraisals:

- identification of leaders and informants to liaise between the project team and the community; formation of the work team;
- participatory collection of basic historical and agro-ecological data, joint preparation of the historical profile, map of the community and field trips or field walks (this stage was referred to as “learning about our community”);

#### Nicaragua: participation in agricultural production and access to resources in the project communities

In mixed households, women’s participation in productive agricultural activities varies. It is generally higher in poorer households, and represents up to half of the labour force. In principle, women are not excluded from any agricultural activity except land preparation and the application of agrochemicals for plant protection.

Access for women (both female heads of household and women with partners) to means of production or resources such as land, credit, technical assistance, inputs, etc. is marginal.

Where organized women’s groups exist (made up of: female heads of household and/or wives/partners), they often lack (or possess only precariously as loans or leases) direct access to land parcels to be cultivated collectively.

Given that credit is granted preferentially to applicants with collateral such as land, women tend to be sidelined, and few are in a position to have loan requests accepted. Given that the local culture does not recognize women as agricultural producers, they are often excluded from technical consultation meetings, training courses and sessions, and technical or experimental formal demonstrations.

- participatory collection of basic socio-economic data; during this stage a family stratification using simple cards was designed, followed by a census – carried out through a basic survey with the use of “participatory appraisal cards” – of livestock and cropping activities, domestic living conditions (water, electricity, cooking facilities and hygiene) and the organizations to which rural women and men belong (this stage was referred to as “learning about ourselves”);

- identification of the principal local organizations during the organizations workshop (this stage was referred to as “our organizations”);
- participatory study of how farming systems operate and definition of a typology based on pre-identified farming system types, as revealed by social self-stratification and field studies. Participants at the workshops on farming systems held in this phase analysed gender-disaggregated information on participation in the workforce in order to measure the work contributed by women and children (as well as that of men), the farm calendar, the technical itineraries and the economic characteristics of the FFPUs. Discussions and brainstorming on these issues led to the preparation of three summary tables: a systems flowchart, a systems diagram, and a table showing who controls the resources;
- characterization of community issues and identification of needs and their causes during the needs and requirements workshop; the technique of using cards for working groups based on FFPU types was utilized for this stage of the appraisal.
- These studies provided a detailed summary of the historical agrarian and socio-economic context of the communities where the FFPUs under review were located. They also illustrated the social stratification and major constraints (felt needs) of rural women and men, and established a typology for the farming systems identified.
- Each farming system was reviewed in qualitative and quantitative terms from a gender perspective, and the respective farming sequences were identified.
- The economic findings were presented in the form of activities (or subsystems) and as a global unit (i.e. the system as a whole). Production costs and associated costs, overall gross profit, value of the work contributed by women and men, gross profit per working day, income per unit of livestock or area, and the yield of the capital investment were all determined.
- Data on the division of labour within the system were disaggregated by sex (women/men, girls/boys) for each activity (or subsystem) and globally, in order to produce a clear and accurate overview of women’s total contribution to agricultural production (gross margin) and to the work carried out within the system.

The following are the activities that were carried out:

- In the municipalities of San Ramón and Terrabona (where intermediate appraisals were conducted), three communities were selected, based on the active involvement of local women’s groups. Following the aforementioned methodological procedure, an appraisal was prepared for these rural communities combining a gender dimension with the farming systems approach and some elements of the participatory methodology.
- Based on a typological classification of the women and a stratification of the available farming areas, the appraisals also examined women’s status in relation to the workday, access to resources and participation in decision-making and the community. The appraisals identified family needs and major community issues.
- Not only did the appraisals identify the family needs, but they also depicted the main difficulties facing the community.

**Nicaragua: women's contribution to overall gross profit and farm work in San Ramón FFPUs**

The contribution of "women with partners" to agricultural production (gross profit) ranged from 12 to 25 percent, with a low of 5 percent and a high of 50 percent. The remainder was supplied by men and children. With very few exceptions, women's contribution to labour fell within this same range.

The following are some observations and specific constraints regarding the process:

- Problems were encountered during the process of introducing gender criteria in the analysis of systems. The interest in cross-referencing this variable with social stratification and types of farming systems, in particular for the creation of appropriate typologies, caused dilemmas for the project team. Was a separate category for women without partners necessary? Or was it relevant to look at women without partners as a specific sub-group within the general typologies of these systems?
- Absence of a quantification of holdings in each category made it impossible to determine their relative importance.
- The appraisals did not disaggregate the technical and economic constraints for each farming system and category of women.
- Given that in some communities women without partners represented one-third of the FFPUs, it became necessary to devise a special category for them. This tactic enabled the appraisals and characterization of the farming systems, as well as the analysis and monitoring of the innovations introduced, to be more effective. In the case of the two

communities in San Ramón, for example, women without partners constituted a separate type of farming system, and so a distinction demonstrated more clearly the impact of the project.

- It should be noted that access to land (or land titling) was considered separately with respect to the introduction of technological innovations. Separating the issue of land tenure from that of land improvements introduced a conflict between two closely linked topics. It is recommended that future actions link these two variables. Another aspect that is noteworthy is that, while the project supported titling and/or the regularization of land tenure (as this would render the status of thousands of women in the project area less precarious), no specific study or monitoring was carried out on this issue.

## 2.4 Introduction of innovations

The appraisals highlighted the role of women and their contributions to farming systems in the communities studied, and led to a more relevant targeting of project activities.

Taking into account the data provided by the appraisals, the project team set up on-farm experiments and introduced alternative techniques for existing farming systems. Three types of innovations were introduced: *barnyard activities*, such as poultry and hencoops, or growing food plants, or both, constituted over half the demonstrations. There were also *plot activities or new crops*, including fruit crops, pitahaya, passion fruit, chayote, pineapple and demonstration plots of new maize

varieties, and *livestock activities*, such as the introduction of a collective herd to be later divided and managed by the households.

The active participation of women (the target population) in identifying their needs in the various types of farming systems was essential in ensuring that the innovations introduced to improve their living conditions addressed their concerns effectively. During participatory seminars on the identification of needs, women expressed what they deemed most urgent and necessary in terms of farm and household work: to reduce their heavy workloads for fetching water and fuel by introducing improved stoves, home water storage and laundry facilities. Indeed, the changes introduced were adapted to the conditions of the women under review, and to the existing potential of the family production system. Recommendations thus took into account such variables as available land and labour, and women's control over these resources.

Given the nature and size of the investments in technical innovations it is important to stress that, from a systemic standpoint, the proposed changes did not have an immediate economic impact, as the project was designed to meet its objectives over the medium- and long-term periods. Indeed, although the economic potential of intensifying barnyard hen coops and home-grown fruit crops was excellent, its impact would only be visible after a period of four to five years. From a gender perspective, the impact of the project had immediate effect, as gender roles were modified through the introduction of new activities (or the improvement of existing ones), directly strengthening women's roles and parti-

cipation. These changes, in turn, had a highly significant technical and economic impact.

Overall, the project should have drawn more systematic profit from the wealth of analytical data available in the appraisals. Although it was possible to distinguish different typologies, the general recommendations were not very different among the households and categories identified, and consequently the technological introductions were standardized. Despite this, project activities did take into account, from a gender perspective, the common problems expressed by the target population. The effects of integrating women's and men's priorities were therefore positive.

Ensuring an adequate supply of technical assistance and extension for the adoption of technical innovations tends to be a difficult task as men are the usual beneficiaries of such extension, credits and technical assistance. The fact that changes are made with and by women brings a change into the traditional pattern, which does not consider women with partners (nor do they consider themselves) as agricultural producers.

The lack of training in the area of systemic approaches among extension workers, and the relatively standard models proposed, proved to be a constraint to the monitoring of a genuine systemic methodology during the stages of introducing and monitoring technical change. Indeed, the models applied resembled conventional technology packages and the usual extension and credit practices of rural development projects, failing to consider fully the inherent peculiarities



and interrelatedness within a given farming system.

## 2.5 Some conclusions

The appraisals provided valid data on the situations and conditions that are most commonly confronted and experienced by farmers in general (particularly women farmers) in the project area.

Based on these appraisals, the project team identified, defined and analysed emerging issues, as a combination of three related sub-issues:

- Women's weak organizational skills are an important cause of the feeble influence that they exert on policy and strategy decision-making, and affect women farmers working in the agricultural sector at the national, regional and municipal levels.
- The rigid cultural patterns concerning gender-based agricultural production and reproduction roles impose a heavy domestic workload and difficult domestic living conditions for women.
- The economic aspect of how incomes and agricultural production – for both women heads of household and women with partners – can be increased, independently of whether their productive responsibilities are visible or invisible, mainly confronts an issue of equality and the need to identify technical innovations tailored to women's needs. The core of the issue lies in the structural exclusion of women from gaining access to farming technologies, in technical training and in the enhancement and diversification of women's farming activities.

The observations and lessons learned from the experience of the project team are summed up as follows:

- The success of the appraisals and of subsequent activities demanded a change in the behaviour, attitudes and thinking patterns of the technical experts involved. "One essential condition is to know and identify with the subject (the peasant woman or man), and with the realities of her/his situation, language, culture and customs". Consequently, further discussions concerning human resources involved in this type of analysis emerge. Indeed, a fundamental prerequisite is a multidisciplinary team that is capable of combining gender analysis with farming systems analysis and participatory methods. It is essential that the project team have the motivation and dedication to produce work that faithfully mirrors the living conditions, behavioural patterns, values and problems of the rural families studied.
- Effective community participation in the appraisal process not only made the local people more aware of their general situation and more able to tackle their own problems, but also made the team members capable of overcoming their traditional gender stereotypes in order to assign concrete responsibilities to members of the community.
- The appraisal had two major side-effects. On the one hand, the workshops attended by men farmers increased their awareness of women's role in farm production units – leading to a growing recognition of women as economic agents in the community – and changes were fostered in male and

female attitudes. On the other hand, the appraisal process strengthened the community organizations and women's participation in them.

The Nicaraguan case study is of great interest from the standpoint of methodology. Despite the difficulties encountered during the process, and the presence of certain constraints, the participatory appraisals guided activities towards a genuine, in-depth and methodical grounding as regards the actual situation, from a farming systems and gender analysis perspective. It thus provided concrete guidelines for development and for the use of technical working models with women.

The value of an appraisal is largely contingent on the amount, detail and relevance of the data collected; the depth and rigour of agronomic, economic and gender analysis; the degree to which recommendations are operational; and how the appraisal differentiates by systemic typologies, and the positions held by women and men within them. Recommendations need to ensure that the introduction and monitoring of new models are truly functional, given that the basic criteria for monitoring and evaluating the results, effects and impacts of the proposed innovations will be formulated at this level.

The criteria used to define farming typologies must be simple and limited in number, with a maximum of the following three variables for cross comparisons:

- social stratification of holdings (no more than three or four strata, perhaps based on the available surface area);
- type of farming system (avoiding the listing of more than five types, if possible);
- unit typologies, based on the role played by women in them (women heads of household and FFPUs, or women with partners, with various farm production profiles, but avoiding mass aggregation).

Taking into account the above observations when preparing appraisals contributes to generating a better response to the specific needs identified in each unit by the on-farm innovations introduced.

In this way, the recommendations should take into account the various systems and subsystem typologies, as well as women's position within them, in order to support the selection of appropriate technical improvements and extension models. Thus, these models should consider the existing local diversities and specificities at both the household reproduction and the agricultural production levels. This is not always an easy task, given that both institutional and community resistance is frequently encountered when the goal is to introduce changes that imply new patterns, methods, concepts and, ultimately, a new outlook.

Useful and relevant elements emerged from the analysis and discussions of the Nicaraguan experience. These propose certain methodological steps that will appropriately combine the systemic analysis, gender approach and some participatory methods.

### III. Guidelines for carrying out systemic analysis with a gender perspective

This chapter introduces the elements, conceptual guidelines and tools that derive from the implementation of the project GCP/NIC/020/NOR in Nicaragua and that may assist in the formulation of other rural development projects. Such concepts and tools emerge from a thorough review of the achievements and bottlenecks of the Nicaraguan experience, and the general guidelines of the models introduced at the beginning of this document.

The appraisals referred to so far aim to identify the prime characteristics of the socio-economic and gender situation of the target areas. Their objective is to identify the main issues in the communities where project activities will take place and to formulate relevant recommendations.

The methodology used to achieve the agreed objective consists in combining the systemic and gender approaches when conducting appraisals at the level of the municipality, community or farm family production unit. In each of these levels, the methodology reviews gender roles in production, reproduction and organized social life, highlighting the division of labour by sex, access to resources, participation in management and decision-making, and needs and priorities as perceived by the people

involved. The systemic and gender approaches feed into one another at various stages of the appraisal process. The analysis is carried out in three successive stages:

- a review of the situation in the microregion or municipality;
- a review of the community;
- a review of farm family production units (FFPUs).

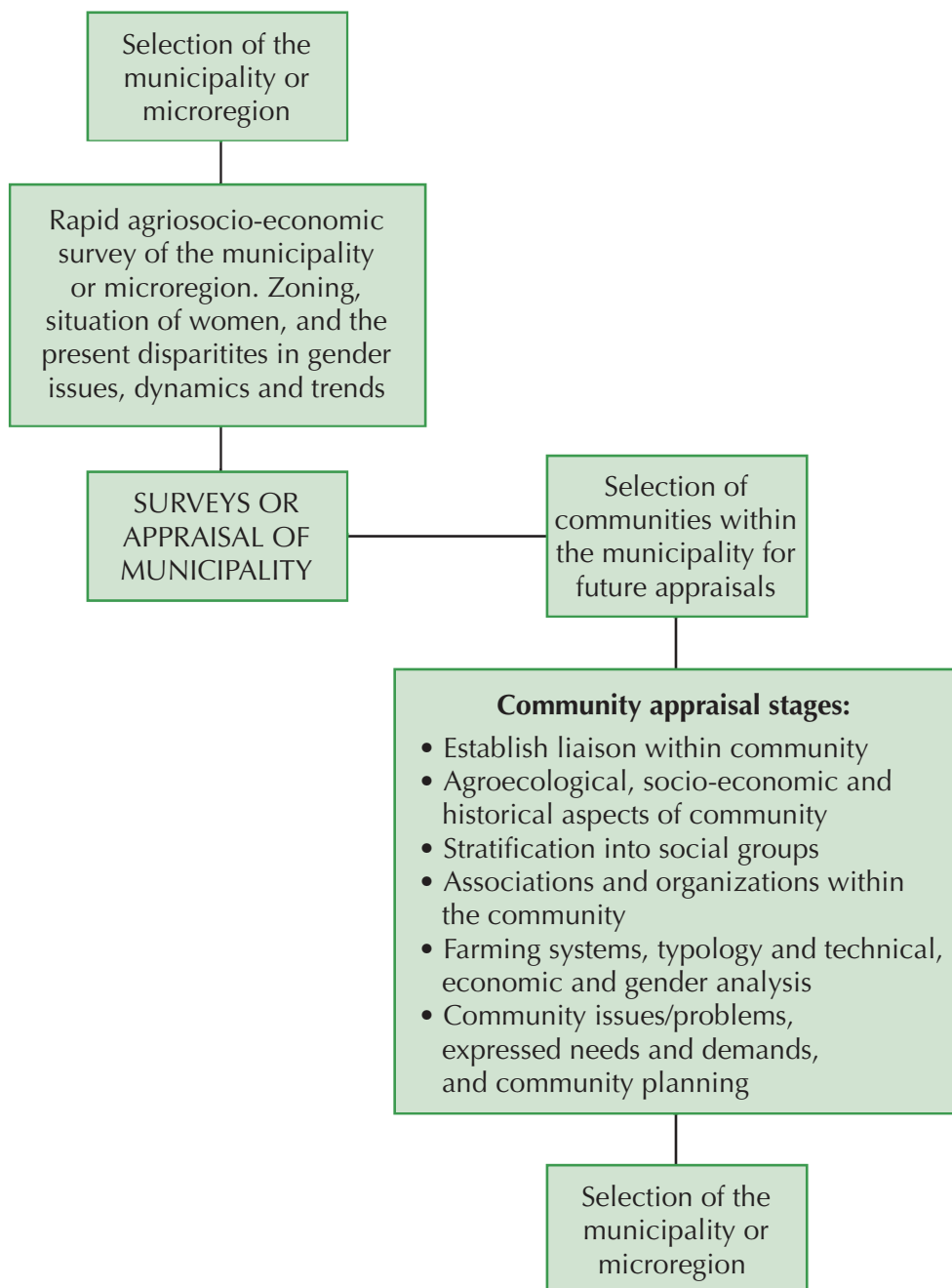
At the level of the municipality, a rapid socio-economic survey is conducted. This is followed by a more in-depth analysis of the agrarian system only where strictly necessary. The aim of this exercise is to learn about the basic aspects of the historical, agro-ecological and socio-economic characteristics of the area, in addition to current trends and dynamics. It also provides a basis for the selection of communities for subsequent analysis.

At the community level, the appraisal entails several methodological steps that analyse the local history and geography, and the needs and priorities expressed by local inhabitants. The farming systems and organizations of local farmers are reviewed and examined.

Knowledge of the historical dynamics of the environmental, economic and social situation is fundamental to understanding current conditions and identifying future trends.

The following diagram illustrates the course of action of the process.

### Diagram of appraisals at the levels of the municipality and region



### 3.1 Rapid agricultural and socio-economic survey at the microregional or municipality level<sup>15</sup>

The purpose of the rapid agricultural and socio-economic survey is to obtain an overview of the area with its principal environmental, agricultural and socio-economic characteristics. This results in a general description of the territorial and social situation of the municipality or microregion.

#### 3.1.1 Methodological steps and main variables

The result of this characterization is a global frame of reference, comprising homogeneous zones in terms of development issues (referred to as "zoning"), an overview of the social structure and situation of rural women, and the identification of past and present trends. These three aspects are examined on the basis of a restricted number of variables, which are selected according to the most relevant experiences.

#### Zoning

The objective of zoning is to identify a number of areas that are relatively homogeneous, but sufficiently different from one another in terms of agro-ecological and socio-economic aspects, and the problematic of rural development. This exercise identifies the comparative advantages of the various zones and, most important, makes it possible to recognize the broad outlines of the major development problems or constraints faced by local

inhabitants. In practice, zoning is a mapping exercise carried out by superimposing maps or sketches listing some of the most important variables related to agricultural and socio-economic aspects.

Agro-ecological and socio-economic aspects are the two main categories reviewed.

**Agro-ecological aspects.** The objective is to characterize the environment in terms of its physical and ecological specificities and the manner in which its natural resources (such as soil) are exploited. Available data on the relevant variables are collected and quantified or reproduced pictorially in the form of maps of the geographical area.

The main variables are:

- physical components;
- biological components of the environment (ecosystems);
- land use.

#### Physical components

- Climate (mainly rainfall, followed by temperature).
- Geology, especially topography and local soil types (with numerical data on the relief of the land; land by topographies – flat, rolling, and gully; soil types; and the agricultural production constraints inherent to the topography and soil type).
- Hydrographic picture of the municipality: watershed (or watersheds) to which the community belongs; network of rivers, torrents and sources of water; perhaps

<sup>15</sup> Analytical coverage is usually selected through contacts and negotiations with representatives of government and non-governmental institutions at the department and, subsequently, municipal levels. These contacts are useful for obtaining a picture of the general situation in the area, the organizations present in the various institutional bodies, and the status quo of women and women farmers' organizations; compiling existing data; and obtaining the initial general support or backing from the authorities or bodies consulted. The organizational and methodological steps are: defining the selection criteria for the municipality, and calling an advisory meeting with representatives of state institutions, NGOs, government agencies, unions and projects working in the area of coverage.

presenting data on low water, volume of flow, etc. (if the region is relatively arid, data on irrigation or potential for irrigation are important aspects).

#### *Biological components and ecosystems*

- Natural or spontaneous vegetation: primary and secondary forest, stubble, dominant species, etc., and relative areas of importance.
- Cultivated plants: dominant annuals and perennials, dominant composition of herbaceous species, natural and cultivated pasture and relative areas of importance.
- Fauna: this is particularly relevant if hunting and fishing add significantly to the diet and/or income of the rural population.
- Ecosystems: general types of ecosystem(s) in the municipality, and/or major ecosystems present, their distribution within the municipal territory, recent trends (deforestation, altered river beds, problems of contamination and pollution, etc.).

#### *Land use*

- Identify the types and relative importance of the main agro-ecological uses in the area, such as shifting cultivation, slash and burn of secondary forest or stubble, livestock production on natural pasture (with or without migration of flocks and herds), fruit trees and other types of plantation, peri-urban orchards, crop rotation, crops with fallow periods (and average length of fallow period), floodplain crops, etc. Using this data to define rural land use for a preliminary attempt at zoning, by superimposing the available maps.

***Socio-economic aspects.*** The objective is to characterize society and the local

economy, identify the principal components found in its decisive factors and how they interrelate based on the relevant indicators. Sources for such analysis include background documentation, institutions, key informants, etc.

The main variables are:

- population;
- infrastructure;
- land tenure;
- supply of inputs and consumer goods, and marketing of farm products;
- local development programmes and projects;
- civil organizations and religious groups;
- local leadership.

#### *Population*

- Identify the general demographic characteristics of the zone, with particular attention to location and population scattering or concentration, and obtain basic data on interethnic relationships and their impact on development issues where different ethnic groups coexist. This information can be synthesized in a population chart.

#### *Infrastructure*

- Gather basic data relating to existing social infrastructure: health care structures (hospitals, clinics, health centres, hospital beds and doctors per inhabitant), education (schools and colleges, extent of schooling), public services (rural electrification, drinking-water and transport – road networks, public transport, etc.), industries present in or having an impact on the zone, pick-up and supply centres, etc. The data can be summarized in an infrastructure chart.

*Land tenure*

- Compile data on the number of agricultural holdings, the major forms of land tenure and the proportion of each, the stratification of landownership by area, changes introduced through agrarian reform, and trends concerning access to land. Compare and combine these data with the major categories of agricultural production for a preliminary categorization of farmers.

*Supply of inputs and consumer goods, and marketing of agricultural products*

- Examine the links between the local population and local, regional, national and export markets. Review the conditions of access to inputs and consumer goods and marketing of products, bearing in mind that these are decisive factors in farmers' decisions concerning what to produce, because they vary according to the type of farmer, the zone and so forth. Specify the baseline prices for the main farm products and the relative prices of the various items produced, and examine how these factors affect local agrarian trends. The aim is to obtain an approximation of market trends in the zone, quantifying the main flows of trade and verifying their impact on farm production and on the socio-economic behaviour of agricultural producers and their families.

*Local development programmes and projects*

- Knowledge on development programmes and projects in the area is fundamental, including their objectives, scope of operations and the extent of their human and financial resources. An appraisal by the local authorities on the impact of these programmes and projects on

the local situation should also be included.

*Religious groups and organizations within society*

- The aim is to ascertain the vitality and initiatives of local organizations. This requires an inventory of unions or other organizations, religious and cultural groups, associations, NGOs, etc. operating in the area.

*Local leadership*

- It is important to identify local organization leaders and their sphere of action and to become familiar with local opinions, in order to establish contacts with local leaders, learn about the local changes they hope to bring about and secure their involvement in the pre-project investigation work and, later, in the project itself.

By zoning, broad areas are identified, each presenting its own development issues, in accordance with the criteria based on the most significant variables. There is no standard formula for this step of the methodology, as it is the result of the appraisals and discussions prompted by the hands-on experience of the team. Zoning will lead to the selection of the project target communities for the project.

*General status of women in the municipality*

The objective is to obtain a general overview of gender relationships and the status of women in the municipality, based on a select number of criteria.

The main variables are land tenure and access to land for women, living conditions in the family (marital status, gender roles, shared workloads), productive and agricultural activities, reproductive activities, off-farm activities,

other income-generating activities, profile of relationships within the family, organizations in which women participate, and project activities that benefit women.

#### *Access to land and land tenure*

- Acknowledge and quantify, where possible, women's access to land and their situation with respect to land tenure. The following questions should be answered: To what extent, how, by what means (as groups, as individuals) and at what point in time have women been the beneficiaries of agrarian reform? Equally relevant is to collect baseline data on the amount of land involved, its location, titling and eventual problems involved in titling. Subsequently, the question of group ownership and titling in the group and family context should be explored.

#### *Family living conditions*

- Qualitative data must be gathered on aspects such as profiles of typical rural families, marital arrangements, the status of women with respect to men, gender roles, responsibilities and behaviour common in the area, including the collection of data on the proportion of women-headed households.

#### *Agricultural activities*

- Present a general description of the types of activities that women carry out, define the relative importance of such activities, and evaluate to what extent women are independent (take decision in autonomy or with partner, resource management, use of derived benefits).

#### *Reproductive activities*

- General descriptive data (including

qualitative and, if possible, quantitative data) are required on the various types of reproductive activities that are common in the area, including the general conditions and constraints of such activities, and the relevant division of labour. Concrete aspects for consideration are the supply of water, fuelwood or other type of fuel for cooking, food preparation, cleaning and repairs, care and education of children, and so forth. Quantitative data can perhaps be found in gender analysis surveys or appraisals made in the area.

#### *Off-farm productive activities*

- Identify the types of off-farm productive activities (such as industrial, craft or tertiary sector activities), their relative importance and the average income derived from such activities.

#### *Other income-generating activities*

- Sale of labour outside the FFPU (day work on other farms, housework in other households, whether seasonal or permanent), the sale of goods produced by the women, such as: prepared foods, craftwork, etc. The impact of such activities on the family income should be evaluated (major, medium or marginal impact).

#### *Profile of relations within the family*

- Give a qualitative description of the dominant patterns of culture and behaviour.

#### *Organizations with female participation*

- Identify the unions, cultural, religious, community and other types of organizations with female membership, the extent of women's involvement, female leadership, etc., using numerical data where possible.



## RAPID APPRAISAL AT THE MICROREGIONAL OR MUNICIPALITY LEVEL

Methodological steps	Main variables to consider
<p><b>ZONING</b></p>	<p><b>Agro-ecological aspects</b></p> <ul style="list-style-type: none"> <li>• Physical components of the environment: topography, hydrography and climate (especially rainfall)</li> <li>• Biological components of the environment</li> <li>• Spontaneous and cultivated vegetation, fauna, principal ecosystems</li> <li>• Land use: main agricultural products and their areas of coverage</li> </ul> <p><b>Socio-economic aspects</b></p> <ul style="list-style-type: none"> <li>• Population by sex division: location, scattered or concentrated, ethnic composition</li> <li>• Social infrastructure: road networks, industries, pick-up centres</li> <li>• Land tenure: type of land tenancy, access to land, number and size of holdings by surface stratum, and division by gender of large types of farm production units (where possible)</li> <li>• Agricultural production marketing network (marketing network for agricultural products) and supply of inputs and consumer goods, price trends</li> <li>• Development programmes and projects operating in the area</li> <li>• Civil and religious organizations and groups</li> <li>• Identify the most important local leaders</li> </ul>
<p><b>SITUATION OF RURAL WOMEN</b></p>	<ul style="list-style-type: none"> <li>• Access to land, land tenure</li> <li>• Conditions of family life</li> <li>• Productive agricultural activities (women)</li> <li>• Reproductive activities</li> <li>• Off-farm activities</li> <li>• Other income-generating activities</li> <li>• Profile of relations within the family</li> <li>• Organizations with female participation</li> <li>• Activities with the participation of and to benefit women</li> </ul>
<p><b>HISTORICAL TRENDS</b></p>	<ul style="list-style-type: none"> <li>• Historical background of municipal territory</li> <li>• Demographics: population changes and migratory movements</li> <li>• Farming pattern and general evolution of the environment and natural resources</li> <li>• Land tenure changes</li> <li>• Presence of and trends in public services (education, health, transport, agricultural extension, credit, etc.)</li> <li>• Women's and men's participation, and differences in their access to public services</li> </ul>

*Development activities that benefit women*

- Determine the various types of projects/programmes that have an impact on women's situation, identifying their objectives and their human and financial resources.

The purpose of this analysis should not be to compile an exhaustive database, but rather to utilize qualitative data where quantitative data are unobtainable. This phase is important because it is a survey, and therefore the extent of the analysis of the variables will be tailored to the amount of detail required.

*Historical trends*

The objective is to characterize the zone by means of a general analytical summary of the recent history of the area, highlighting the most relevant aspects with respect to local development issues. The major trends, constraints and prospects that have a significant bearing on local development issues must be identified, determining the changing picture of rural women's situation within the municipality. In concrete terms, a brief agrarian overview of the zone is necessary, focusing on the most significant trends and highlighting women's access to public services, in this particular context.

The main variables are a brief history of the area, migratory movements, ecosystem transformations, changes in land tenure, public service trends, and changes in women's roles and gender relations.

**3.1.2 Methodological guidelines and tools**

The four types of tools used for these appraisals are the collection of baseline

data and map-making, field trips, interviews with key informants, and presentation of the data to local authorities, with feedback from them.

Obtaining and processing the baseline data on the relevant variables is the result of an interactive process combining the four methodological tools. The weight and relative usefulness of each is determined on a case-by-case basis, depending on the existing sources of information and the depth of detail desired. A comparative analysis of the documentation obtained from these different means will broaden the discussion and identify local issues.

*Collecting baseline data and map-making*

The analytical work begins with a review of secondary sources and the processing of available qualitative and quantitative data (monographs, university papers, development project studies, mission reports, scientific papers, etc.), which are obtained from a systematic search of all possible sources.<sup>16</sup>

An in-depth zoning project requires detailed official maps of the area, as well as recent aerial photographs and satellite images, where available. In this case (particularly for appraisals of agrarian systems and/or strict zoning), specific maps can be produced to compensate data gaps or to summarize the existing data.

If instead the intention is to elaborate rough zoning, it will be sufficient to employ an official map that includes data that are relative to studied variables by using graphs, symbols and different coloured overlays.

<sup>16</sup> Libraries and documentation centres in ministries, municipal records, social researchers or historians, experts on the area, municipal authorities, development project personnel, people working in institutions and organizations active in the area, etc. are all of use for this. Agro-ecological zoning by earlier projects can also be very helpful.

In both cases, the aim is to superimpose maps drawn to the same scale but covering different topics in order to visualize the correlations between the socio-economic and agro-ecological variables (see summary table on Rapid appraisal at the microregional or municipality level, page 34). Depending on the issues that have emerged, the project team delineates geographical areas that face similar internal challenges. Demarcation into separate zones is based on areas that are different from their neighbours. It should be reiterated that first-hand experience and a case-by-case approach offer the best basis for selecting the criteria or cross-criteria for zoning. In some cases such criteria could include population density or abrupt changes in the topography. In other cases, they could be the type of farm production crossed with the social structure (e.g. intensive livestock breeding, smallholding labour reserve, etc.). Help from key local informants and the knowledge and objectivity of the team carrying out the appraisal are essential for the characterization.

This study requires the identification of historical trends and analysis of the evolution of reviewed factors, as well as a visualization of possible changes in the maps.

Subsequent adjustments can be made to the zoning, based on observations derived from field visits, interviews with key informants, and discussions with community groups in the feedback phase of the activities.

### **Field visits**

By crossing the different areas defined in the zoning map, it is possible to trace various routes, and field trips should be

chosen carefully to observe and analyse the heterogeneous features of the zone.

The estimated average time for a field trip is from half to a whole day, and field trip routes are based on the route traced on the map. On the basis of what is observed during the trip, notes are taken and a general outline of the landscape is traced out. The aim is to obtain a picture and an analysis of the local landscape, selecting specific historical elements as well as social and ecological trends, and aiming to build a first understanding of its components and interrelations. The agricultural practices of its inhabitants and the basis of their development are identified in this way. It is suggested that these trips be carried out in teams with two or three local people and key informants, who are chosen for their familiarity with the municipality, their ability to explain local history and present local perceptions, and their capacity to answer questions related to particular crops, abandoned houses, the advantages of a particular farm practice, etc. To complement the observations, short informal interviews are carried out with people met along the way (farmers, women and traders) on the issues or questions that arise during the trip.

The field trip is the first stage in understanding local issues (which is useful for verifying the information identified during the previous stage) and their relationships with the various ways of managing the environment and valorizing the ecosystems. It is of paramount importance to understand how local farmers utilize, with the means available to them, the various natural resources of their environment.

The setting must be read gradually, i.e. first an overview or general outlook

must be obtained, and the various zones with their component parts should be introduced later. Initially, it is necessary to observe the main features of the landscape (highlands, hills, valleys etc.), the major plant formations (wooded areas, pastures [rangelands], perennial and annual crops and crop rotation), the arrangement of the cultivated land parcels (shape and size, contour ploughed or not), the types of crops, the importance and age of crop residues and fallow lands, the quality of the grasslands and the kinds and number of livestock reared. These observations should lead to a number of assumptions regarding the different forms of exploitation. Such assumptions ought to be confirmed or changed during the subsequent interviews with other informants.

During the field trip, a first outline or synthetic drawing is produced to be used as a visual tool for memory and analysis.

#### ***Interviews with key informants***

The primary objective of this type of interview is to supply data on: a) modified farming practices; b) in accordance with the available means of production, the ecosystem's potential; and c) the exchange relations (particularly economic) through which farmers carry out their activities – types of agricultural practices, productive potential of the zone, marketing networks, prices, land tenure, credit, debts, etc.

The selected key informants or witnesses of the land transformations are often older, experienced people who are able to report on the local history, hold some type of responsibility in the present or past, and have relevant influence in the social and farming sectors. The surveys – based on the profiles of those already interviewed –

attempt to uncover the causes of the major transformations of local society and ecosystems. The topics covered are changes in population, crops, livestock, farming techniques and tools, the economic and social infrastructure, commercial and financial activities, land tenure, the ecosystem (erosion, deforestation, soil conservation, droughts and floods, etc.). Particular reference is given to gender relations and to the role played by women in the different social spheres. Regarding other organizations, interviews with their leaders are fundamental.

The joint work of all the informants, the municipality's history in terms of agricultural trends, the gender roles and the position of women, and any recent changes are reconstructed. In this way, there is a gradual perception of mechanisms that could be key aspects in originating transformations and innovations in agricultural production and techniques, the local pattern of development, and gender roles.

#### ***Presenting the results and feedback from local bodies***

When the rapid appraisal is ready, the project team presents the results to the municipal authorities and bodies, including some of the key informants. During the oral presentation (illustrated by maps, diagrams, summary tables containing the basic data, etc.), a discussion will cover the conclusions reached, ameliorating the appraisal with any eventual corrections, new information or additional comments.

One of the main objectives of the feedback session is to discuss the selection of communities where the detailed community and FFPU appraisals will be conducted. The selection criteria are

presented and discussed with the municipal authorities, and the proposed communities are reviewed with people who are highly familiar with them.

### 3.2 Systemic and gender analysis at the community level

The proposed methodology contains elements drawn from various schools of thought on rural development, including the systemic, the gender and development and the participatory development approaches.

Other assumptions for the application of this methodology are that: (a) development agents have basic background knowledge of the systemic approach, and view participation as a means of acquiring and managing autonomy and decision-making and gender as a social structure that defines the participation of women and men in the systems operation; (b) development agents will train the team liaising with the community in the use of techniques and will form part of the work team; (c) the groups of women and men with whom the team will work have some form of organization and make up a unit that can be defined as a community;<sup>17</sup> and (d) there is backing for development programmes within the institutional sphere, as well as within the official local, regional and national ones.

The length of the data gathering process varies, and depends on many factors. It is worth mentioning the complexity and heterogeneity of the social, economic and agronomic realities of the microregion, the extent to which rural families are organized, the degree of commitment of the work team, the time available for the work team, and the

farm families targeted for direct participation, etc.

#### The main characteristics of this type of analysis are:

- Development professionals assume that peasant families are aware of the issues confronting them and are in a position to participate in decisions concerning solutions to these issues. This also implies that the most appropriate “facilitators” for the development process are the rural women and men who are directly involved, and that the fundamental role of the professional is to support actions agreed with the target population.
- The farm family production unit (FFPU) is a system of production and reproduction. Using the systemic approach, the existing relationships among the various components of the FFPU – human, biological, technical, etc. – can be visualized and subjected to economic, gender and technical analysis.
- The family (i.e. the human component) is the nucleus of the system. All members – men, women and children – are included, and their respective contributions and roles in decisions concerning farming and reproductive activities are clearly identified.
- The criterion of gender analysis is one of the most important variables for the operation of the system, allowing the identification, analysis and discussion of gender-related differences and inequalities inside the system and resulting from the stereotyping of men and women who function in it. These differences and inequalities are acknowledged to be a social artefact and not a biological reality, and thus susceptible to change.

<sup>17</sup> For the purpose of the study, “community” means a group of people who have lived in a given area for some years, share certain characteristics, constitute a sociological group with common objectives, and identify themselves as belonging to such community.

*Selection of the target area*

Negotiations at the government, municipal and community levels will lead to the selection of the target area. Such contacts help to identify organizations with representation at various levels, and especially to gain an understanding of the general situation of farmers' organizations, particularly those with female participation.

These discussions also facilitate access to data that are already on record, and they also obtain a sort of initial consent or collaboration for the actual appraisal. Various criteria come into play in choosing the target area: prime consideration is given to communities where the population is already organized to some extent and where certain government bodies and/or NGOs are already active.

**SYSTEMIC AND GENDER ANALYSIS AT THE COMMUNITY LEVEL**

Methodological steps	Main variables to consider	Methodological tools and guidelines
Contact with the community, setting up local contact persons and a local work team		<ul style="list-style-type: none"> <li>• Introduction of people familiar with the community</li> <li>• Formation of the work team (3 to 5 people)</li> <li>• Introductory explanatory/ training period</li> </ul>
Basic community and agrosocio-economic data ("learning more about our community")	<p><b>Agro-ecological aspects</b></p> <ul style="list-style-type: none"> <li>• Topography and hydrography (relief, rivers and springs)</li> <li>• Spontaneous and cultivated vegetation, fauna</li> <li>• Agricultural production</li> </ul> <p><b>General socio-economic aspects</b></p> <ul style="list-style-type: none"> <li>• Population (households) and migratory movements</li> <li>• Road and transport network</li> <li>• Marketing of agricultural products and supply of inputs and consumer goods</li> <li>• Presence and trends of public services, such as education, health, transport, agricultural extension, credit, etc.</li> <li>• Development programmes in the community</li> </ul> <p><b>Historical aspects</b></p> <ul style="list-style-type: none"> <li>• Community origins</li> <li>• Population trends and migratory movements, sex breakdown</li> <li>• Ecosystem trends</li> <li>• Land tenure</li> </ul>	<ul style="list-style-type: none"> <li>• Map of the community</li> <li>• Field trips or field rounds</li> <li>• Profile of community history</li> </ul>

SYSTEMIC AND GENDER ANALYSIS AT THE COMMUNITY LEVEL *(continued)*

Methodological steps	Main variables to consider	Methodological tools and guidelines
Characterization of the organizations the community	<ul style="list-style-type: none"> <li>• Various organizations represented within the community</li> <li>• Participation and roles of women and men members</li> </ul>	<ul style="list-style-type: none"> <li>• Community organization matrix</li> </ul>
Analysis of farming systems	<p>General: family activities and incomes, with a picture of the overall division of labour and responsibilities by gender</p> <ul style="list-style-type: none"> <li>• Agricultural activities and income</li> <li>• Off-farm income and activities</li> <li>• Other income-generating activities</li> <li>• Reproductive activities</li> <li>• Peak labour times</li> <li>• Periods of family labour underemployment</li> </ul> <p><b>Cropping systems</b></p> <ul style="list-style-type: none"> <li>• Cultivated species and varieties</li> <li>• Spatial distribution of crops</li> <li>• Cropping techniques – ploughing, fertilization, maintenance, harvesting</li> <li>• Technical itineraries</li> <li>• Cropping timetable</li> <li>• Organic replenishment</li> <li>• Weed competition</li> <li>• Crop diseases</li> <li>• Utilization of crop residues</li> <li>• Yields</li> <li>• Conservation and processing</li> <li>• Product quality</li> </ul> <p><b>Livestock systems</b></p> <ul style="list-style-type: none"> <li>• Breeds and species</li> <li>• Genetic selection</li> <li>• Technical itineraries</li> <li>• Herd management timetable</li> </ul>	<ul style="list-style-type: none"> <li>• Workday</li> <li>• Calendar of activities</li> <li>• Family budget: income and expenditure</li> <li>• General systems flowchart (to follow the analysis of livestock and cropping subsystems)</li> </ul> <ul style="list-style-type: none"> <li>• Technical itinerary (crops)</li> <li>• Timetable with division of labour</li> <li>• Access to, control of and decisions over resources</li> </ul> <ul style="list-style-type: none"> <li>• Technical itinerary (livestock)</li> <li>• Timetable, including division of labour</li> <li>• Access to, control of and decisions over resources</li> </ul>

SYSTEMIC AND GENDER ANALYSIS AT THE COMMUNITY LEVEL *(continued)*

Methodological steps	Main variables to consider	Methodological tools and guidelines
	<ul style="list-style-type: none"> <li>• Livestock inventory by sex and age</li> <li>• Animal housing and movements</li> <li>• Animal health and hygiene</li> <li>• Buildings</li> <li>• Carrying capacity per unit of area</li> <li>• Yield per unit</li> <li>• Processing</li> <li>• Product quality</li> </ul> <p><b>Farming system types</b></p> <ul style="list-style-type: none"> <li>• Reproduction threshold of farm production units</li> </ul>	<ul style="list-style-type: none"> <li>• Preparation of farming system typologies</li> </ul>
Community issues	<ul style="list-style-type: none"> <li>• Social and organizational problems, agricultural problems and problems of off-farm activities</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and rank problems</li> <li>• Analyse and discuss priority problems</li> </ul>

### 3.2.1 Methodological steps, main variables, guidelines and tools

The following describes the five-step process to carry out a systemic analysis conducted at the community level. The principal variables and tools available at each step of the process are also described.

#### *Establishing contact with the community and the contact persons and forming a local work team*

Once the target area has been selected, the leaders and representatives of the various organizations and development programmes present in the community should be approached in order to identify the groups of women and men who will act as contact persons linking the project to the local population.

The contact persons should have a reputation for being responsible and community service-oriented. They should also have time to carry out the given tasks. Reading and writing are almost essential characteristics, although use of this criterion is effectively a form of segregation, which could bias against the community representation.

- Forming and training the work team:
  - A small group is created of three to five people who will become contact persons (the number depends on the size of the community). This will become the work team, which in collaboration with the project team will facilitate the appraisal process. The work team will require an introductory training period that includes an explanation of the



appraisal's objectives and of the subsequent activities, which follow stages, as well as use of the tools for each stage. After this, the lessons learned at each stage of the appraisal and project are immediately put into practice.

- Gender awareness workshops:  
Concurrently with the selection process for the area, the creation of the work team and the onset of the project, gender workshops should be held at the following levels:
  - government and municipal level, for representatives of the various organizations active at these levels;
  - community level, for community leaders, the work team, technical people working in the various projects, and women and men from the community who participate in the team.

The specific content of the gender workshops will vary in accordance with the level and characteristics of the audience addressed. However, the principal objective is to raise awareness on the importance of incorporating a gender perspective into interpretations of the current situation and development projects as a mechanism to promote social, political and economic equality within a community.

***Baseline agrosocio-economic data on the community (“learning about our community”)***

This stage complements the gathering and analysis of agrosocio-economic variables of the territory and community history, circuits of the area, interviews with key informants and the gathering of information from the following means.

***Community map.*** This is a map of the community, which is prepared by a select group of women and men familiar with the area and features the most important aspects of the community (e.g. communities, hamlets, services, etc.). This tool makes it possible to locate the areas where women farmers predominate, and to place the community within its natural setting. The community map is also helpful in delineating the field visits for trips, in line with the necessary data and the objectives. The community map can subsequently be compared with other available maps (geological, official, natural resources, and land use), in order to draw new conclusions. Micro-zoning at the community level, using the same methods as for the municipal appraisal, is also useful.

***Transect.*** The transect is a section map of the community area, designed to illustrate the heterogeneity of the terrain and landscape, the economic and social conflicts and the various types of farming practices. During field walks with two or more work team members who are familiar with the community, informal interviews with people met along the way will supplement the data collected. At the end of the walk, the participants, with the assistance of the facilitator, will prepare a pictorial map, or transect. The purpose of this tool is to depict the following: a) a brief description of the agricultural zone, including soil types, slopes, potential land use, etc.; b) the way women and men relate to their environment, through direct observation and interviews, locating the use of resources such as water and fuelwood and existing potential resources; and c) the general situation of farming systems with female participation. Other tools such as natural resource maps can also provide useful data.

► Sample matrix

**HISTORICAL PROFILE OF COMMUNITY**

Date	Events	Causes

**Historical profile.** The work team provides a summary of the local history going back some generations and featuring major events. A summarized matrix may be used for this. This exercise provides a chance to discuss the causes of each change, and offers an overview of the sequence of development for the area studied and its inhabitants.

**Social and gender characterization of the families in the community (“getting to know each other”)**

- **Variables.** Relationships and roles of gender and social conflicts.
- **Instruments.** Self-stratification through a simple survey based on appraisal cards.
- **Self-stratification.** The purpose of this exercise is to identify the different social groups found in the community. A table or matrix, which lists all the families in the community on the left-hand side, can be utilized

for this exercise, or a series of cards listing the relevant information. A selected group of inhabitants is required to outline what they believe to be the useful criteria for defining the members of the community (this might be male or female heads of household, land tenure, etc.). This information will then be utilized to characterize each of the local families. Some basic general criteria for a rough approximation of the typology of farm families will emerge at this stage. A census of families in female-headed households can be obtained, as can an initial picture of the elements that differentiate farming systems as seen from the standpoint of the farmers themselves.

Self-stratification is a participatory method that facilitates an analysis of the social differences within the community, based on how community members

► Sample self-stratification matrix

Criterion ⇒	Male head of household	Female head of household	Owns land	Rents land	Collective ownership	Area 1 Mz	Area 1–6 Mz	Area 15–50 Mz
Family ⇓								

Mz stands for “manzana”, a Central American land measure. One Mz = 0.7 ha.

perceive themselves. This is not a sociological review, but rather a group exercise in perception and evaluation of the existing social differences within the community. In some cases, a prior self-stratification workshop, including a brief sociological presentation, can later be added to the rest of the information as a useful tool.

- **Simple survey with appraisal cards.** This is a participatory survey, based on the use of appraisal cards (see annex), during which a select group of local women and men from the work team gather data on each family, including demographic, farm production and other data related to the roles of women in the area under review.

The results of the simple survey and self-stratification are used to define the major categories of FFPUs in the area and the number of families in each category. This process also identifies farming systems in the community. Three major groups or categories are normally selected:

- FFPUs with very little land and insufficient income to meet the basic family needs. The survival of these FFPUs depends on other income-generating activities, such as salaries, pensions, commercial or craft activities and seasonal migration;

- FFPUs where the farming systems utilize all available family labour and meet the basic needs without having to resort to off-farm income-generating activities;
- FFPUs where the use of non-family labour is crucial to output. These may be managed by the owner or by a hired supervisor and are entrepreneurial in nature.

**Characterization of the organizations present in the community (“our organizations”)**

- Table or matrix of the organizational structure in the community.

- **Table of the organizational structure in the community.** A matrix or table is used to summarize the data. A representative group of local women and men (working together or separated by sex)<sup>18</sup> will locate on this matrix all the organizations, institutions and projects present in the community, discussing their work, any problems that may have arisen in the course of it, the possible causes, and possible solutions. Depending on the extent of the organizational conflicts in the community, an open discussion of all topics is organized, or individual opinions can be expressed on cards for later presentation during the discussions.

► Sample community organizations matrix

Organization	Action: What is carried out?	Women’s participation: How?	Results and achievements

<sup>18</sup> Where women are not in the habit of participating actively in mixed meetings, it is better to discuss separately with men and women before the meeting with all participants.

### *Analysis of farming systems*

■ **General instruments:** a) typology of farming systems; b) analysis of men's, women's and children's contributions to the system; c) global systemic analysis and farming systems workshops.

#### **a) Typology of farming systems**

**Instruments.** Summary of agro-economic observations and data; and preparation of typology.

– **Data summary and preparation of typology.** Differences arise within the community (or within each zone of the territory where a community has been zoned) concerning use of the environment. These differences are the result of local agro-ecological variations and socio-economic disparities among farmers. The major categories of agricultural holdings and farming systems will emerge from a review of these gaps.

Construction of a typology facilitates an understanding of the social, technical and economic diversity of the community – its natural resources, specific constraints, practices, logical sequences, patterns of change, etc. The specific issues and problems of the typologies identified can also be discerned, as well as their interrelatedness (common problems in their strategies and life styles, patterns of accumulation or, from a technical standpoint, patterns of diversification, similar constraints such as weeds, water shortages, soil acidity and insufficient genetic potential, etc.). The typology can be used as a starting point for recommendations tailored to the specificities of each problem encountered.

Depending on the level of disaggregation required from the analysis, and on the economic and social complexity of the area, several types of farming systems

may be identified with significant differences among them. Four to five are usually ideal, as this avoids an overdetailed and unnecessary analysis.

Summarizing the data entails understanding the pattern of accumulation of the farm production units, and the substantial differences among farming systems. The first approximation of the general typologies of farming units is the result of the self-stratification and simple survey (see Social and gender characterization of the families in the community, page 43) and familiarity with technical farming types present in the community. This helps the preparation of a preliminary outline and a draft typology, by trial and error.

The methodology and criteria for preparing a typology vary on a case-by-case basis. While the criteria for differentiation vary, the most common criteria employed are the economic size of the farm production unit, the amount of labour available and utilized, the opportunities for off-farm work and income generation, the components of fixed capital (buildings, investments, equipment, etc.), marketing conditions, land tenure, the dominant type of farm production (basic grains, coffee, livestock, etc.) and the sex and social status of the head of the farm production unit (single woman or man, one-parent or two-parents).

The validity of the draft typology, and a clearer picture of the various types of system, is derived from a simple sampling of some of the farm production units – one or two for each type of system – which is not necessarily based on statistical criteria. The objective is to obtain indicative data through case studies, examining subsystems (cropping

### Samples of typologies used

**System 1:** small units of basic grains with a barnyard and land parcels, generally smaller than 2 hectares, and sale of family labour. There are 15 such families in the community, including five headed by single women. In general, women's participation in fieldwork is high.

**System 2:** self-sufficient farm families with up to 20 hectares, growing coffee and rearing livestock, with structural commercial surpluses of basic grains. There are six such families in the community, including one female-headed household that uses occasional paid labour. Where couples are present, the woman's activities are confined to the barnyard. Women's contribution to field labour, in terms of labour force, is significantly less than that observed in System 1.

**System 3:** ex-farm labourers granted title to 7 hectares under the agrarian reform, growing basic grains and coffee. There are 30 such families in the community, of which one-third are headed by a single woman. In the case of couples, the woman is responsible for the home, barnyard (backyard) and bean plot, and provides assistance on the other land parcels.

**System 4:** large, extensive livestock holdings of up to 300 hectares, with sharecropping of basic grains and employment of labour year-round (day labourers and permanent employees), administered by a manager. There are two such farms in the community.

**System 5:** medium-sized entrepreneurial holding of up to 150 hectares, with intensive, high-tech production of export crops (such as cardamom, coffee, cocoa, tobacco, certified maize seeds under contract to a specific firm, broccoli, or some combination of these crops) and small dual-purpose herds of animals. Average bank debt, heavy use of hired labour, and high rates of capital yield. There are four such farms. The women do not work in the fields, but have a separate production of poultry (hens and eggs), and dairy products.

and livestock systems, FFPU inventories) without trying to produce statistically exact data.

The case studies, which must be exhaustive, analyse the technical and economic aspects of the farm production units, including their respective cropping and livestock subsystems (see variables in the summary table). It is important to include cases to represent all typologies, considering the gender differences.

Case studies make it possible to adjust the elaborated draft typology where necessary, by introducing amendments based on the observations made in each case. At this stage, the categories are verified and typologies are added or eliminated, depending on whether the contrasts are strong, marginal or insufficiently represented. The definition of categories must be reviewed in terms of the gender variable in order to obtain

a clear picture of the logical sequence of farm production.

When the case studies are completed and the major types of farming systems have been recorded, the number of families belonging to each type must be counted, determining the number of female-headed households in each. In this way, an idea of women's relative weight in the community as a whole, and of their specific situation, is obtained.

### b) Men's, women's and children's contributions to the farming system

**Variables:** each family member's responsibilities and work in the spheres of production and reproduction in each farming system.

**Instruments:** workday; technical itineraries; timetable of activities; access, control and decision-making in relation to the resources of the FFPU; global systems flow chart.

Each family member's contribution to the functioning of the farming system is analysed for each type of system identified. This exercise may either be carried out in the case studies, or be participatory. In the latter case, women and men meet separately for the initial discussion. Women's, men's and children's contributions are to be considered an integral part of the farming system in both the productive and reproductive spheres. In contrast to economic evaluations, which focus on productive activities, the utilization of tools such as the workday and technical itineraries clearly reveals the contribution of women and men, broken down into different tasks. A plenary meeting follows to discuss the contribution of each family member to each type of farming system. This meeting can also be used as an opportunity to report back to the community and to open the general debate on the community's main problems.

Different instruments (matrices) are used at meetings where women and men hold separate group discussions on a series of aspects concerning their respective reproductive and productive contributions to the farming system.<sup>19</sup>

– **Workday.** This is a matrix in which each group separately identifies and records its daily work. Each of the tasks performed throughout the day is listed, with the (approximate) time spent on each activity and any help received.

– **Annual work timetable.** In this matrix, each group works separately to identify and record aspects of farm production and reproductive work that are carried out on a monthly basis and throughout the year. This tool highlights critical times and allows women and men farmers to explain how they use their parcels and backyards, how activities are distributed, and how the means of production are employed, including the labour force. The data derived from this tool can be represented by bar charts, thus facilitating comparisons between the average workdays for reproductive and farm production activities, per month and disaggregated by sex.

– **Technical itineraries.** These are made up of various matrices in which each group working separately identifies the fieldwork, tools, inputs, workdays, and roles disaggregated by sex as regards on-farm activities (cropping and livestock),

► Sample matrix of a woman's workday for activities additional to those of the farming system

Hour	Activity	Help
5–6 am	Arises, lights fire, prepares meal	
6–7 am	Feeds children	
7–8 am	Cleans kitchen, tidies house, feeds animals	Older girls
8–10 am	Goes to river to wash and bathe children, wash clothes and fetch water	Older girls
10–11 am	Prepares noon meal	
11–12 am	Eats with younger children	Older girls
12–1 pm	Washes up, cleans kitchen, feeds animals	Older girls
1–2 pm	Fetches water	Older girls
2–4 pm	Processes food, irons, sews or mends	
4–5 pm	Prepares evening meal	
5–9 pm	Family meal, tidies kitchen, attends religious service	Boys/girls
9 pm	Goes to bed	

<sup>19</sup> The groups have previously been separated not only by sex, but also in line with the representative farming systems in the community.

► Sample matrix of the annual work timetable

Activity	January	...	April	May	June	July	...	Nov.	Comm.
Maize			Sowing prep.	Sowing	Weeding	Spraying	–	Harvesting	2 Mz
Beans			Weeding	Ploughing	Weeding	Spraying	Weeding		1–2 Mz
Hens	Feed	Daily	Care	2 hours	–	–	–	–	12
Cattle	Feed	Daily	Care	Parasite control	Parasite control	–	–	Vaccinate	chickens
Etc.									

off-farm activities (sale of labour, trade, crafts) and reproductive or domestic activities (fetching water, collecting fuelwood, child care, buying and preparing meals, education of children, etc.).

– *Access to and control of resources and decision-making.* In this matrix, after group discussions, each group separately

lists the various aspects concerning land parcel and/or barnyard output, including infrastructure, services, and benefits deriving from outputs and from resources in general. The goal is to identify resource owners or other people who exercise direct control over resources, those using resources, and those deciding on their use.

► Sample technical itinerary

**FARM PRODUCTION ACTIVITIES (2 Mz of first season maize)**

Cultivo: Maíz	Área: 2 Mz	Época: Primera							
Fieldwork	Season	N° people	Duration	t*/men	t/women	t/boys	t/girls	Inputs	Tools
Weeding	April	2	8 days	16 d/p*					
Slash/burn	April	2	4 days	8 d/p					
Fence repair	April	2	4 days	8 d/p					Rails, stapler
Rotation	May	1	3 days	3 d/p	3 d/p			4 qq	
Sow and fertilize	June	3	3 days	6 d/p	8 d/p			Local seed	Seeder
Bird control	June	1	8 days						
Spray	June-July	2	2–3 applic.	12 d/p				Filitox 6 Hs	Sprayer
Clean	June-July	1	16 + 4	20 d/p					Machete, hoe
Fertilize	June	3	2	4 d/p		2 days		Urea 4 qq	
Stripping	August	1	2 wks						
Shelling	August	1	2 wks						
Harvesting	October	6	2 days	12 d/p					Oxen, carts
Storage	October	4	10x1/2d	20 d/p	10 d/p		10 days	Pest control 12 tablets	

\* t = time

\* d/p = workdays per person

Note: a similar itinerary is used for livestock production.

► Technical itinerary

**PRODUCTIVE AND DOMESTIC ACTIVITIES**

Task	Time	N° people	Duration	t*/men	t*/women	t/boys	t/girls	Input	Tools
Fetch water									
Cut fuelwood									
Cook									
Child care									
Wash clothes									
Iron									
Clean house									

\* t = time

► Basic data on off-farm activities

Task	Time	N° people	Duration	t*/men	t*/women	t/boys	t/girls
Local store							
Salaried work							
Money from abroad							

\* t = time

► Sample matrix for access to and control of resources and decision-making

**ACCESS/CONTROL/RESOURCES DECISION-MAKING**

Resource	Owns/Control	Use/Works	Decides
Land	M	M-W-S-D	M
Small livestock	W	M-S-D	W
Cattle	M	M-W-S-D	M
Tools/implements	M	M-W-S-D	M
Credit	M	M	M
\$/output	M	M-W-S-D	M
\$/barnyard output	W	M-W-S-D	W

M = men; W = women; S = son; D = daughter.

– **Systems flowchart.** This is a diagrammatic representation of a farming system. A flowchart is made for each type of farming system. Each group, working separately, locates the various components of the system on a graph (productive, reproductive and off-farm components). Different-coloured

arrows (colour-coded in order of importance) are used to rank the relative importance that female and male farmers give to each component. In addition to making it easier to see how women and men participants perceive the linkages among these components, this also highlights their



priorities with respect to income and expenditure within the farming system.

**c) Global economic analysis of farming systems, and farming systems workshops**

*Instruments.* Matrix to calculate the income and expenditure of the systems and for reporting on the data.

– *Global analysis of farm family production units and subsystems.* This process consists of creating rough balance sheets comparing incomes and expenditures for each type of farming system. The first step is to calculate total income from each type of farming system, adding all partial entries concerning cropping, livestock, off-farm activities, etc. The next step is to identify the “system outlay”, by separating farm production-related costs from non-productive activities related to the family, such as food and other similar items (two matrixes should be created – see samples on page 50). The economic results of all activities listed are subsequently consolidated in a chart, thus encouraging discussions on the reproductive level of the family. The context provides an opportunity for discussions of the technical and economic issues and the various survival strategies adopted by the families in the community, for each farming system. To study the economy of a rural production unit, in particular, in the case illustrated in this document the criterion of gross margin (income and expenditure) is used for the analysis, as this simple benchmark is often adequate for the purpose. Simplified calculations are advisable as the main point of interest is the relation between inputs and outputs of the farming system, and its effects on the quality and livelihood of the family.

– *Reporting on the data.* This consists of a plenary meeting with participants from the earlier meetings and other guests from the community. The data gathered by means of the aforementioned instruments and on which the earlier group discussions were based (organizational presence, technical itineraries, and so forth) are presented and reviewed. One of the main purposes of this plenary is to report formally to the community as a whole on the data collected during the process, highlighting the relative (productive or reproductive) contributions of each family member to the efficient operation of the farming system as a whole. The results extracted from the different groups are compared. This should bring out the inequalities and divergences of opinion at any given time for any specific topic of discussion (minority opinions are no less important than those that are shared). It is also important to stress the existing integration of the various components of the farming system, such as the soil’s uptake of nutrients resulting from a particular crop, the use of animal wastes for organic fertilizer, etc. This meeting will also present and discuss the economic calculations of income and expenditure for the various farming systems.

In the earlier tables, which emerged from the experience in Nicaragua, the basic criterion for evaluating income is the gross margin income plus off-farm income. This reflects the case of a poor FFPU that owns the land it cultivates and has little fixed capital (thus has minimum depreciation costs), does not use credit (thus pays no interest on loans), has no direct subsidies, does not pay taxes, etc. Experience has shown that this is frequently the most practical concept for making a basic analysis of a

Sample global analysis (simplified economic calculations based on gross margin and off-farm income) for each type of farming system

### ► Farming systems expenditure

Expenses for feeding a family (six people)

Product	Daily expenditure	Monthly expenditure	First sowing expenditure
Maize			
Beans			
Rice			
Coffee			
Salt			
<b>Subtotal</b>	\$	\$	\$

Additional family expenses

Item	Daily expenditure	Monthly expenditure	First sowing expenditure
Electricity			
Clothing			
Shoes			
<b>Subtotal</b>	\$	\$	\$
<b>Total</b>	\$	\$	\$

### ► Income (gross margin) for farming system

Farming system income from 1 Mz of late-season sorghum

Production	Amount	Price	Total
Sale	30	30	900
Consumption	10	30	300
<b>Total</b>			<b>\$ 1 200</b>

Input	Amount	Price	Total
Filitox	1 hs.	55	55
Gastoxin	4 units	2	8
Nails	1 lb	5	5
Tarps/plastic	6 yds	12	72
<b>Total</b>			<b>\$ 140</b>

Service	Labour	Amount	Cost	Total
Rent oxen	Ploughing	3	50	150
<b>Total</b>				<b>\$ 150</b>

Total cost = 140 + 150	\$ 290
Gross margin = 1 200 – 290	\$ 910

### Summary of farming systems income and expenditure

System	Value of production	Cost of production	Gross margin
Maize			
Beans			
Cattle			
Coffee			
Hens			
<b>Total</b>			

Other activities	Contribution in \$
Small stores	
<b>Total</b>	

FFPU. For a more detailed analysis and for comparing different types of farming systems, it is advisable to consider indicators such as gross margin per unit of human labour or gross margin per hectare.

If instead the intention is to determine the agricultural income of the household (this is a strict necessity for an economic analysis of agricultural holdings in general, and entrepreneurial holdings in particular), certain requirements such as the capital depreciation, payment of bank interest, direct subsidies, taxes, rental payments for land, etc. must be brought into the equation. In this case, *ad hoc* tables must be drawn up to include the calculations presented below for the various types of farming systems.

After creating charts for each system, several general comparative matrices of the different systems are crafted, in tune with the selected criteria (for this example: the total gross margin plus off-farm activities; in other cases, the agricultural income of the family unit can be used). In order to calculate the workforce productivity and the soil

productivity the gross margin per workday or per worker and the gross margin per hectare can be used. The systems can be compared on the basis of the synthesis of these data. It is particularly advisable to compare the economic reproduction capacity with the technical and farming patterns deriving from it.

#### **Community problems and plan of action**

An appraisal process, such as this one, provides the basis for the formulation of a participatory community-wide plan of action. Nonetheless, it is necessary to organize subsequent workshops for the planning of strategies and concrete actions that are based on the available resources, and not on false hopes, which will not be satisfied by the proposed action and will spoil relations between the project team and the community.

- **Instruments.** Organization of community problems into a hierarchy; analysis and discussion of priority problems; and plan of action.

• **Hierarchic organization of community problems.** The participants meet<sup>20</sup> to analyse the most deeply felt community problems in the farming, reproductive, off-farm, social and organizational spheres. It is important to ensure equal gender participation and that the issues identified by women are not drowned in the plenary discussions. When the problems have been identified, the next step is to discuss and carry out the organization into hierarchy (first in group sessions and then in plenary sessions). Cards with numbers from 1 to 3 can be used, for example, with each participant, woman or man, given three votes. These discussions will also lead participants to explore the real causes of each problem. To rank the problems in order of importance, the key indicators for each need to be identified by the community.<sup>21</sup> If the existing information for each indicator is insufficient, the decision of who, when and how to collect these data should be taken. The

data on problem analysis and problem ranking are then summarized in matrices, as shown below.

• **A lesson learned from experience.** It is advisable to tackle community problems directly without any prior discussion of individual needs, demands and aspirations. It is essential to define immediately the key indicators for each priority, as these will help to focus on the desired possible results, whose definition will serve as guides for monitoring and evaluation of the process.

• **Community action plan by objective/problem.** The first step in this process is to develop the concept of community planning with the female and male participants. Previously defined priority problems and their respective indicators are subsequently compared with the interests of the community and the characteristics/real potentials of the project.

#### To calculate the agricultural income of a farmer and his/her family

Begin by calculating the present net value (PNV) for an average year. The PNV equals the aggregate value of final output less the value of all goods and services consumed.

$VAN = PB - CI - Am.$ , where GP is gross product for one year, IC is the value of the products of intermediate consumption, and Am. is the economic amortization of the fixed capital, i.e. the annual depreciation of equipment and machinery.

The agricultural income of the farmer and his/her family is determined by adding the PNV to any direct subsidies received, less interest on loans, rental payments for land and costs of daily and permanent hired labour.

$R = VAN + Sub. - Int. - RT - Imp. - Sal.$ , where AI is the agricultural income of the farmer and his/her family, Sub. is direct subsidies received, Int. is interest payments to banks or other loan sources, RT is rent paid to the owners of the land, Imp. is tax paid to the government, and Sal. is salaries of non-family labour.

For a detailed analysis of the agricultural holding, it is advisable to calculate this income for each family worker, per day worked, and per hectare, as well as the annual utility rate (income divided by the total value of tied capital).

<sup>20</sup> In certain cases it may be preferred to separate the groups by sex and family typology within the community.

<sup>21</sup> *Indicators* are data that help to measure the extent of a problem. They may be *direct indicators*, i.e. directly related to a problem, such as low crop yield, for which the indicator would be the actual yield of this crop. *Indirect indicators* concern data that do not reflect directly on the problem but give an idea of the situation. They are helpful for such hard-to-quantify issues as low self-esteem among the women of the community, where one indirect indicator might be the participation of women in the various meetings and organizations.

- ▶ The following is a sample summary table for the various farming systems, using the criterion of “gross margin plus off-farm income”.

**CONSOLIDATED RESULTS OF THE VARIOUS TYPES OF FARMING SYSTEMS**

Activity	System 1	System 2	System 3
Maize	\$	\$	\$
Beans	\$	\$	\$
Cattle	\$	\$	\$
Coffee	\$	\$	\$
Hens	\$	\$	\$
Off-farm activities	\$	\$	\$
Total gross margin	\$	\$	\$
Family expenditure	\$	\$	\$
<b>Difference</b>	\$	\$	\$

Family reproduction level = system inputs vs. family requirement.

The community action plan clearly identifies the objectives pursued, tackling each particular issue, identifying the activities associated with each objective<sup>22</sup> and specifying the who is responsible, the time (when), the strategies and methods of action (how), and the necessary resources, all of

which is regrouped in a specific work time schedule. The framework for identifying possible solutions provides the opportunity to discuss self-management with the team as the backbone for self-determination, autonomy and equity in a development process.

- ▶ Sample matrix of community problems and priority issues

**COMMUNITY PROBLEM RANKING**

Problem	Single woman	1 - 5 Mz		+6 Mz		Total votes	
		M	W	M	W	M	W

M = men's votes; W = women's votes.

- ▶ **PRIORITY PROBLEMS**

Analysis and discussions

N°	Problem	Principal cause	Key indicator	Solutions

<sup>22</sup> It is important to remember that certain actions can solve more than one problem at a time. For example, those actions with a direct bearing on women's self-esteem may help bolster the extent to which women participate in community organizations or play a more active role in decision-making.

- Sample matrix by problem ranking to create the community action plan

#### COMMUNITY ACTION PLAN

Problems:

Objectives:

N°	Activity	Who?	When?	How?	Resources

## General conclusions

This document presents a number of considerations regarding the theoretical and methodological aspects involved in rural development activities (projects and programmes). These considerations are derived from a specific case in which the main aim was to monitor the ongoing transformations taking place in peasant economies. From a methodological point of view, when the issue is addressed, this can be summed up in one question: How can the gender perspective be mainstreamed into the systemic analysis approach of the rural production systems?

In the experience of the project GCP/NIC/020/NOR, gender analysis was not addressed as an exclusive or isolated study, or as a complement to the analysis of the agrarian issue for which the action was intended. Rather, the construction of a methodological process started from a framework of the reality of the peasant economy and the FFPU as the object of the study. The interpretation of this reality arose from previous processes of observing the social, economic and technological dynamics that characterize the functioning of the units present in the

study area. On this basis, methods and techniques deriving from a combination of farming systems analysis and gender analysis were selected as the most relevant approach to reflect that reality. The approach was then put into practice first by completing the appraisals described as the basis for the formulation of community plans.

It is important to note that several existing conceptual and methodological initiatives attempt to tie the two key issues of agrarian systems and gender in the formulation of plans for agricultural and rural development. In this case, after the revision of the general guidelines, it was intended to examine a number of instrumental aspects and give a practical answer to questions relating to: (1) What is the conceptual framework for integrating these two approaches? (2) What process should be developed in order to integrate a gender perspective into the framework of a systemic analysis approach, bearing in mind the Latin American reality and taking the Nicaraguan project as an example? and (3) What methodological, procedural and research guidelines emerged from this concrete experience?

It is also important to note the conceptual contrasts found between the

farming systems and the gender analysis approaches, because their aims are different despite the interrelatedness of their fields of study. When applied to the agricultural system, the systemic approach methodology starts by considering the rural family production unit as an essentially productive system made up of subsystems. The focus is on agricultural production, especially on its technological and economic aspects. The central scope of gender analysis, on the other hand, is the study of gender relationships in the spheres of production, reproduction and community life, as interrelated spheres. So far, a large number of efforts in applying gender analysis to agriculture have focused on the division of labour, the access to and control of resources, management/decision-making, and practical and strategic gender needs. These are considered four of the fundamental pillars for achieving equal opportunities and access to productive resources. Coordinating both approaches (gender and systems) will open the space for mutual enrichment.

From the methodological and practical standpoints, the case of the project GCO/NIC/020/NOR represents a concrete example of the integration of both approaches. The farm family production unit and its farming system were taken as the starting point "highlighting, in particular, the analysis of the different tasks integrated to the roles played by women in the family nucleus and that are conventionally not identified as contributions". The analytical focus was thus simultaneously on the FFPU and farming systems and on women as the central axis of the family. Different gender roles, as well as the contributions and

responsibilities that both women and men assume in the planning and implementation of income-generating and reproductive activities within the family, were also identified.

The approach applied is not intended to be a tool kit for a participatory appraisal, nor an exhaustive methodology for systemic analysis, or even a gender study of the districts. It represents an attempt to combine the two approaches with the objective of producing analytical methodological guidelines that ensure the technical interventions in farming systems are of equal benefit to women and men, and hence to the FFPU as a whole. Indeed, the main interest of this kind of appraisal is to guarantee that the technical assistance and extension activities are more relevant, and help to increase women's productivity and incomes through technical and economic improvements to farming systems. In conclusion, it may be said that the main objective of this effort is to achieve the goal of gender-sensitive farming systems analysis, which may contribute to a better understanding of the development dynamics and of the roles and contributions of women and men within those dynamics.

## ANNEX

### Participatory appraisal card

HEAD OF HOUSEHOLD: .....

DISTRICT: .....

SECTOR: .....

PREPARED BY: .....

#### I. GENERAL FAMILY DATA

MEN .....

WOMEN .....

BOYS .....

GIRLS .....

TOTAL MEMBERS .....

#### KNOWS HOW TO READ AND WRITE?

Husband  Yes  No

Wife  Yes  No

#### II. FARMING

Property ownership

Owner  Deed  Title  Document

Rent

Collective  CAP Cooperative  Parcelled  
 Title  Deed  Other

Other Specify: .....

Area

Total area in manzanas .....

Individually owned .....

Collectively owned .....



Distribution of farm area

Land use	Area
Farming	
Pasture	
Grassland	
Forest	
Infrastructure	
Total area	

Agricultural activities

Agricultural activity	Crop area	Who does the work?		Purpose of output	
		Men	Women	Sale	Consumption
Barnyard:					

Livestock system

Species	Number	Breed
<i>Large livestock</i>		
<b>Total</b>		
Milking cows		
Bulls		
Calves		
<i>Small livestock</i>		
Poultry		
Pigs		
Goats		

Productive resources owned

- Water for irrigation
- Pulper
- Team of oxen
- Knapsack sprayer
- Tractor
- Other

Labour

- Family
- Salaried workers
- Other      Specify: .....

Other activities generating family income

.....

.....

.....

III. HOUSING

The house you live in is

- Your own       A cooperative       Your family's

Household drinking-water comes from

- Stream or river       Well       Water hole

Distance from the house is .....

Is there a privy/toilet/lavatory?       Yes       No

Is there electricity?       Sí       No

Type of stove

- Earth oven       Improved
- Other      Specify: .....

Where does the fuelwood supply comes from? .....

How far away is the source of fuelwood? .....

**IV. ORGANIZATION AND PARTICIPATION**

Do you participate in a community organization?  Yes  No

Type	Man	Woman	Other member
Union			
Community			
Project			
Religious			

Do you receive assistance from a project?  Yes  No

What kind?

Type of assistance	Man	Woman
Credit		
Technology		
Basic services		

## Bibliography

**De Rosnay, J.** 1975. *Le Macroscopie*, Paris. Ed. Le Seuil.

**Dufumier M.** 1985. *Systèmes de production et développement agricole dans le Tiers-monde*. Les cahiers de la recherche développement N° 6.

**FAO.** 1991a. *Desarrollo de sistemas agrícolas, pautas para la conducción de un curso de capacitación en desarrollo de sistemas agrícolas*. Rome.

**FAO.** 1991b. *Diagnóstico de sistemas agrarios: una metodología operativa*, by P. Groppo. Santiago, Chile.

**FAO.** 1994. *Mujeres campesinas en América Latina. Desarrollo rural, acceso a la tierra, migraciones y legislación*.

**FAO.** 1996a. *El Desarrollo de los sistemas de agricultura campesina en América Latina, un análisis de la influencia del contexto socioeconómico*. (J.De Grandi).

**FAO.** 1996b. *El enfoque de sistemas agropecuarios para el desarrollo y la generación de tecnología apropiada*. (D. Norman, F. Worman, J. Siebert, E. Modiakgotla).

**FAO.** 1997. *Aspectos jurídicos en el acceso de la mujer rural a la tierra en Cuba, Honduras, Nicaragua y República Dominicana*, by B. Galán. Preliminary version.

**FAO/CIERA.** 1992a. *Estudio del sistema de producción agropecuario de Rafaela Torres*. Project GCP/NIC/020/NOR.

**FAO/CIERA.** 1992b. *Estudio del sistema de producción agropecuario de Felipe García*. Project GCP/NIC/020/NOR.

**FAO/CIERA.** 1992c. *Estudio del sistema de producción agropecuario de Carmela Flores*. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

**FAO/CIERA.** 1992d. *Estudio del sistema de producción agropecuario de Ernestina Jarquín*. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

**FAO/CIERA.** 1992e. *Estudio del sistema de producción agropecuario de Socorro Orozco*. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

**FAO/CIERA.** 1992f. *Estudio del sistema de producción agropecuario de Delfia Meza*. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

**FAO/CIERA.** 1992g. *Estudio del sistema de producción agropecuario de Timotea*. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

**FAO/ILO/UNDP/SEAGA.** 1997. *Análisis socioeconómico y de género, marco conceptual y referencias para el usuario*. Preliminary version.

**FAO/INRA.** 1992a. *Memoria del taller de diagnóstico y organización, Colectivo de mujeres No. 1*. Terrabona, Dpto. de Matagalpa, Nicaragua. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

**FAO/INRA.** 1992b. *Memoria del taller de diagnóstico y organización Colectivo de mujeres No. 2*. Terrabona, Dpto. de Matagalpa, Nicaragua. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.

- FAO/INRA.** 1993a. *Guía para el análisis del sistema de producción y la unidad de producción familiar.* Project GCP/NIC/020/NOR. Managua.
- FAO/INRA.** 1993b. *Memoria del taller de diagnóstico participativo.* N° 5. Río Blanco. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.
- FAO/INRA.** 1993c. *Memoria del taller de diagnóstico participativo.* N° 4. Bocana de Paiwas. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.
- FAO/INRA.** 1994a. *Proceso de validación productiva.* Project GCP/NIC/020/NOR. Managua.
- FAO/INRA.** 1994b. *Estudio del sistema de producción. Familia Solórzano Zamora Comunidad Malacawas, Bocana de Paiwas, Zelaya Central, Dpto. de Matagalpa.* Project GCP/NIC/020/NOR.
- FAO/INRA.** 1994c. *Estudio del sistema de producción. Familia Zahoran Miranda Comunidad Emiliano Pérez, Bocana de Paiwas, Zelaya Central, Dpto. de Matagalpa.* Proyecto GCP/NIC/020/NOR. Febrero.
- FAO/INRA.** 1994d. *Estudio del sistema de producción. Familia Cisneros Méndez, Comunidad Ramón Pérez, Río Blanco, Matagalpa.* Project GCP/NIC/020/NOR.
- FAO/INRA.** 1994e. *Estudio del sistema de producción. Familia Salmerón Matamoros, Comunidad Martín Centeno, Río Blanco, Matagalpa.* Project GCP/NIC/020/NOR.
- FAO/INRA.** 1994f. *Carga doméstica de las mujeres campesinas. Memorias,* N° 3. Training and Participation of Women in Rural Development, Project GCP/NIC/020/NOR.
- FAO/INRA.** 1995a. *Propuesta de realización de taller en Sistemas de Producción con enfoque de género.* Project GCP/NIC/020/NOR. Managua.
- FAO/INRA.** 1995b. *Caracterización de la comarca Montaña Grande, Terrabona, Dpto. de Matagalpa.* Project GCP/NIC/020/ NOR.
- FAO/INRA.** 1995c. *Diagnóstico participativo de la comarca de la Corona, San Ramón, Matagalpa, Nicaragua.* Strengthening of the Capacity of Women in the Management of Small-scale Farm Production Units, Project GCP/NIC/020/ NOR.
- FAO/INRA.** 1995d. *Diagnóstico participativo de la Comarca La Pacayona, San Ramón, Matagalpa, Nicaragua.* Strengthening of the Capacity of Women in the Management of Small-scale Farm Production Units, Project GCP/NIC/020/ NOR.
- FAO/INRA.** 1995e. *Diagnóstico participativo de la Comarca Yucul, San Ramón, Matagalpa, Nicaragua.* Strengthening of the Capacity of Women in the Management of Small-scale Farm Production Units, Project GCP/NIC/020/NOR.
- FAO/INRA.** 1995f. *Seminario. Taller: Concepción metodológica desarrollo rural sostenible.* IPADE, Managua. Project GCP/NIC/020/NOR.
- FAO/ INRA.** 1995g. *Diagnóstico sobre la situación de la mujer y sus unidades de producción campesina, Río Blanco y Bocana de Paiwas.* Project GCP/NIC/020/NOR.
- FAO/INRA.** 1995h. *Seminar/Workshop: Sensibilización de género y su aplicación en el proceso de titulación agraria,* August 16–18, Managua, Project GCP/NIC/020/NOR.

- FAO/INRA.** 1995i. *Proceso de validación productiva*. Project GCP/NIC/020/NOR. Managua.
- FAO/INRA.** 1996a. Workshop: *Conceptos y cálculos básicos sobre matemáticas financieras dirigido a miembros de comités de Fondo de Validación*. Project GCP/NIC/020/NOR.
- FAO/INRA.** 1996b. *Informe de visita a Comunidad Casa Blanca, Municipio de Pueblo Nuevo, Estelí, Managua*. Strengthening of the Capacity of Women in the Management of Small-scale Farm Production Units, Project GCP/NIC/020/NOR.
- FAO/INRA.** 1996c. *Proceso de planificación comunitaria, Comarca La Corona, San Ramón, Matagalpa, Nicaragua*. Strengthening of the Capacity of Women in the Management of Small-scale Farm Production Units, Project GCP/NIC/020/NOR.
- FAO/INRA.** (s.f.). *Guía para el diagnóstico comarcal*.
- FAO/SEAGA.** 1993. *Towards a common conceptual perspective on socio-economic and gender analysis*.
- FAO/SEAGA.** 1997a. *Socio-economic and Gender Analysis, Conceptual Framework and References for Users*.
- FAO/SEAGA.** 1997b. *Socio-economic and Gender Analysis, Field Handbook*. Preliminary version.
- Feldstein, H.S. & Poats, S.V. (eds).** 1990. *Working Together: Gender Analysis in Agriculture*. Two volumes. Connecticut, USA, Kumarian Press.
- Feldstein, H.S. y Jiggins J. (eds).** 1994. *Tools for the Field, Methodology handbook for gender analysis in agriculture*. Connecticut, USA, Kumarian Press.
- GCP/NIC/020/NOR.** 1994a. *Sistematización del trabajo realizado en la fase preparatoria del proyecto*. In-house working paper.
- GCP/NIC/020/NOR.** 1994b. Project document *Strengthening of the Capacity of Women in the Management of Small-scale Farm Production Units*. Revised version.
- GCP/NIC/020/NOR.** 1995a. Seminar/Workshop. *El enfoque de género en los sistemas de producción*. Diagnóstico de Sistemas Agrarios.
- GCP/NIC/020/NOR.** 1996a. *La unidad de la mujer campesina. Estrategia para la incorporación del enfoque de género en el instituto nicaragüense de reforma agraria*, by R. Sanabria.
- GCP/NIC/020/NOR.** 1996b. *Informe de evaluación de los resultados productivos de familias beneficiadas por el proyecto en la época de primera del año 1996*.
- GCP/NIC/020/NOR.** 1996c. *Informe de consultoría sobre consideraciones de análisis de género en los sistemas de producción*, by C. Quiroz.
- GCP/NIC/020/NOR.** 1997a. *Informe de la misión de evaluación tripartita*.
- GCP/NIC/020/NOR.** 1997b. *Caracterización municipal de San Ramón, Matagalpa y Diagnósticos participativos de las comarcas de La Bucul, y La Corona y Pacayota* by E. Duarte, R. Qranda and C. Ruiz. Field documents numbers 8,9 and 10.

- GCP/NIC/020/NOR.** 1997c. *El sistema agrario y los sistemas de producción del Municipio de Terrabona, Matagalpa y Diagnósticos participativos de las Comarcas de San José, La Ceiba y Montaña grande*, by F. Martínez. Field documents numbers 8,9 and 10.
- Mazoyer, M.** 1997. Pour des projets agricoles legitimes et efficaces. Theorie et methode d'analyse des systèmes agraires. *Land reform bulletin*.
- Mazoyer, M. & Roudart. (eds).** 1997. *Histoires des agricultures du monde*. Paris, Ed. Le Seuil.
- Paris, T.R.** (s.f.) *Integrating the gender variable in farming systems research*. (Working paper)
- Paris, T.R. & Luis, J.** 1991. *Gender Issues in Rainfed Agriculture*, paper presented at the International Conference on Extension Strategy for Minimizing Risk in Rainfed Agriculture, April 6–9, New Dehli.
- Pillot, D.** 1992. *Réflexions sur la diversité des approches systemiques du milieu rural*. GRET.
- Poats, S.V., Schmink, M. & Spring, A. (eds).** 1988. *Gender issues in farming systems research and extension*. Boulder, Colorado, USA and London, Westview Press, in cooperation with the Women in Agricultural Development Program, University of Florida, USA.
- Razavi, S. & Miller, C.** 1997. *Conceptual frameworks for gender analysis within the development context*. UNRISD, Background Paper for SEAGA Inter-Agency Review Meeting organized by UNDP, 6–9 March, Pearl River, New York.
- Sautter, G.** 1987. *Appui pedagogique à l'analyse du milieu rural dans une perspective de développement*. Document systèmes agraires N° 8, Cinad.
- Tourte, R. & Billaz, R.** 1983. *Enfoque de los sistemas agrarios y función investigación-desarrollo y L'agronomie tropicale*, Paris, 1982. Translation by PIDZAR (Proyecto Investigación-desarrollo de zonas áridas y semiáridas), Venezuela.

When applied to agriculture, systems analysis is based on the assumption that the farmer's unit is a productive system. In this context, gender analysis, examines the roles, activities, responsibilities, opportunities and constraints of each member of the community under review, and attempts to achieve greater equality between women and men within their spheres of interaction.

Although the research areas of gender and farming systems analysis intersect at various points, each has its own scope. While gender analysis takes into consideration economic production, reproduction and community participation, farming systems analysis tends to focus on the technical and socio-economic aspects of agricultural production. A conceptual framework, designed to combine both approaches, would therefore offer a better opportunity for grasping the complex and heterogeneous reality of peasant economies.

The purpose of this study is to propose a conceptual and methodological framework that integrates a gender perspective into the analysis of farming systems. The proposal is based on the review of the conceptual frameworks of systems and gender analysis and the analysis of the experiences of the Nicaraguan project "Strengthening the Capacity of Women in the Management of Small-scale Farm Production Units" (GCP/NIC/020/NOR).