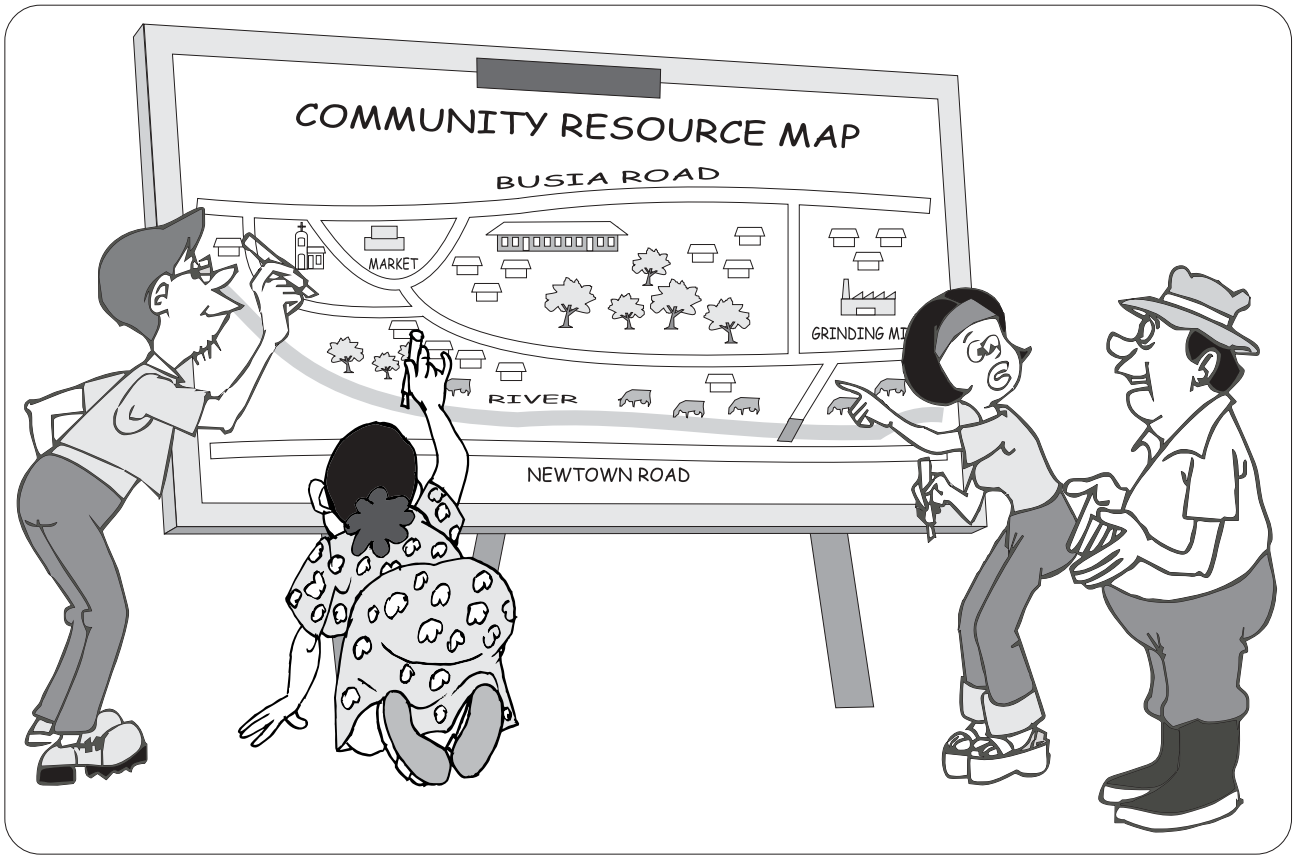
SECTION 3

Area-based Resource Assessment



This section of the *guide* describes a methodology for analyzing the livelihoods and innovation processes of a specific geographic area for rural agroenterprise development. The methods should be adapted according to the time and resources available. The steps detailed below could be developed, using secondary information, and by using participatory methods with key informants or focus groups to collect primary information. The steps for carrying out a basic diagnosis for rural agroenterprise development are shown in Figure 7. Each step is explained with some indications of possible methodologies.

Forming the Working Group

Before starting an analysis of local resources for agroenterprise development, it is important to form the working group members, as representatives from this group will participate in the resource assessment. As described, the working group will set out as a loose association of partners with a common interest in improving their marketing skills and the commercialization of identified products. The working group members help to avoid duplication of efforts and highlight possible synergies between participating organizations. At this point, those most interested in joining the process will make up the working group membership and survey team.

Defining an Area

After having organized a survey team, with resources, the first decision to be made is the limits of the area to be studied. In many cases, the area maybe defined by the local political boundaries, a village, a cluster of villages, a dioceses, or a watershed. An alternative is to consider the area where project activities will be implemented. Experience has shown that many projects set out on a large data gathering exercise only to find out later that a very small part of this information is useful, e.g., this can occur when the analysis is made at the district level, and the project only operates in two

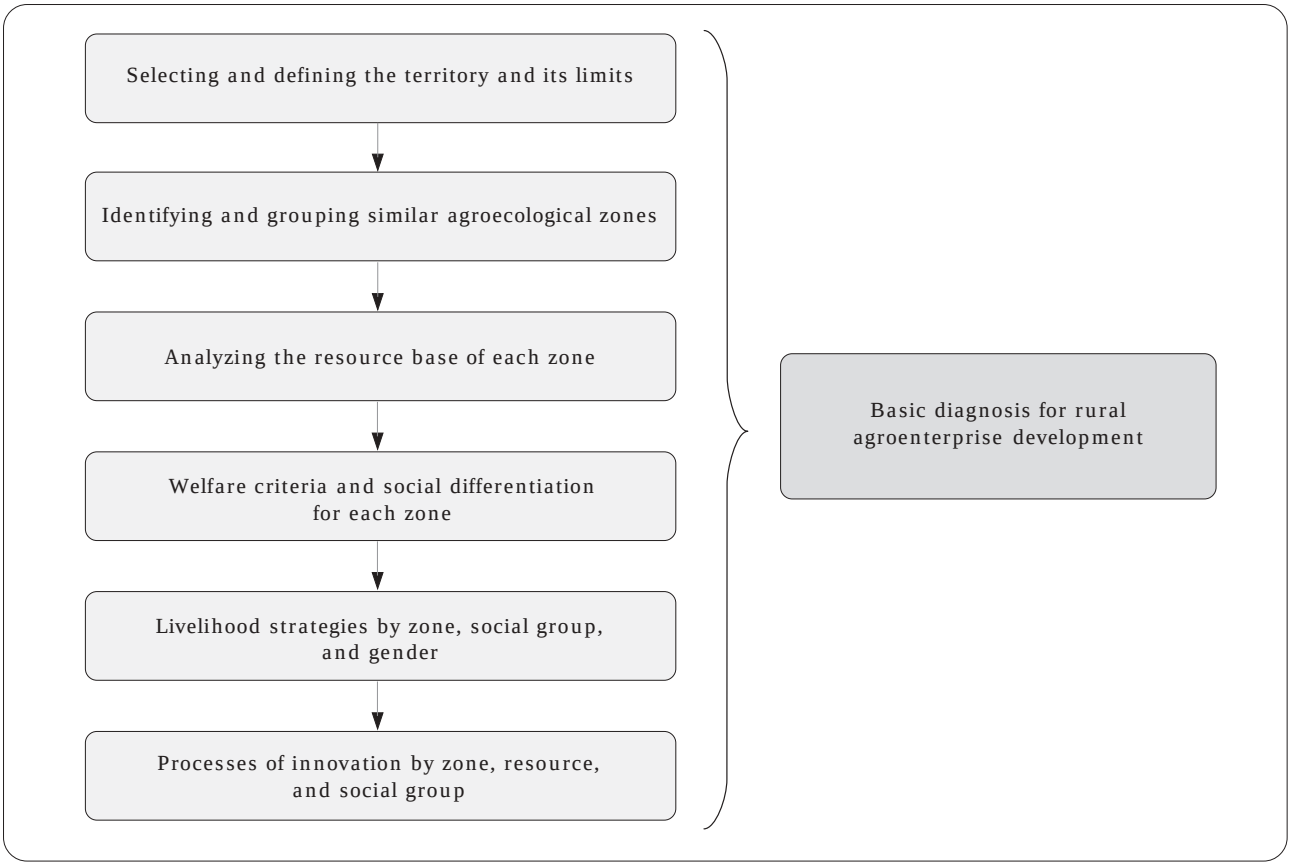


Figure 7. Steps for conducting a basic diagnosis for a given area.

villages. As a rule of thumb, limit the study zone to the area of the project interventions. If the group is unclear about where to draw the boundary, then the group needs to develop some questions or define some criteria that would help to delimit the area for intervention. These criteria should be developed with the agencies operating in the selected area and may imply negotiation over areas to cover so each entity has a manageable area.

Selection criteria for defining an area of intervention

- With whom are we working at present? Where are they located?
- With whom would we like to work in the future? Where are they located?
- What scope do we have as an organization or group of organizations without the quality of our work being compromised?
- In the case of companies that provide RAeD services, what populations should they serve to be economically sustainable?
- Are activities of production, processing, and marketing carried out in the targeted area? If not, then most probably, the area needs to be expanded to include local or regional markets and thus better understand the region's economic organization.
- Other criteria according to the organization(s) participating in the process.

Once the area is delimited, decisions on whether some form of zoning is required can be taken. The process of zoning is undertaken so that the intervention team can develop different intervention strategies for specific types of clients or beneficiaries, i.e., very resource-poor farmers and farmers with significantly more assets, or farmers working in the valleys with tropical crops versus farmers working at high altitude with subtropical products, women's groups versus mixed gender groups. Hence, the complexity of this next section will depend upon the size of your area and the heterogeneity of the area.

Zoning the Area

If the project is only dealing with a small area or a cluster of villages, zoning may not be necessary. Similarly, if the area of intervention is highly homogeneous, in terms of landscape, market access, farmer assets, and production possibilities, then zoning may also not prove to

be effective, as zoning is a means to separate clients based on existing differences. If the "working group" is working over large and diverse areas, such as districts or clusters of districts, a more structured approach to the managing differentiated clients maybe helpful. The following lists show details of some important aspects to evaluate in your area-based diagnosis.

Natural resources

- General topography (altitudes: steep, less sloping, flat areas).
- Water sources (rivers, streams, springs) and their flows throughout the year.
- Relative productivity of soils (good, medium, and poor soils).

Productive resources

- Roads (paved, improved, dirt) and their respective usability during the year.
- Infrastructure coverage (electricity, phone coverage, potable water, irrigation).
- Major businesses with agricultural links (wholesale sorting and packing facilities, processing firms, export firms, among others).
- Support services (input suppliers, internet cafes, machinery suppliers or others).
- Transport for produce (frequency, costs and quality).
- Markets for the area's produce and markets[1].

Communities

- Location of communities and their relative populations.
- Land tenure structure (farmers who are owners, day laborers, or share croppers).
- Location of different ethnic groups, or other defined social groups, and their identification.
- Level of social organization (do farmer groups exist, do they work collectively).

Once this information is placed on the map, zones that have something in common and can be treated as more or less homogeneous units can be distinguished from zones that are sufficiently different to merit a separate analysis. Some criteria to take into account when zoning the area could include:

- *Agroecosystem*, if this has implications for crops or potential economic activities in a zone.
- *Access to roads or markets*, especially if this factor changes during the year because of rainy seasons or if it affects the produce that can be taken to market.
- *Land tenure* is an important factor, considering as it greatly influences the type of crops planted and the possibility of introducing new ones.
- *Access to water* and how it fluctuates during the year can be a means of distinguishing between areas with good, regular, or poor access. The theme of irrigation can also be reviewed.
- *Productive orientation* zones already producing for markets require different strategies than those oriented towards household consumption or food security.
- *Types of existing production systems*. The presence of a particular crops such as coffee, for example, will significantly affect a zone's economic dynamic.
- *Others according to the criteria of the local participants*.

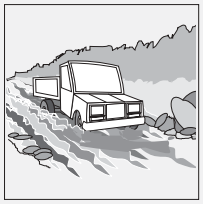
Once the relevant differentiation criteria are identified for the area, a matrix for zoning can be constructed and zones defined. An example is shown in Table 2.

When zoning an area the focus should be on criteria that represent the most severe constraints to production and agroenterprise development. These are the aspects that effectively differentiate one zone from another. In addition, the number of selected criteria should be manageable, e.g., two or three at a maximum.

Once the communities are located in the matrix, similarities should be checked prior to defining the final zones for analysis. For example, in Table 2 the conditions between the zone with permanent roads and permanent water and the zone with permanent roads and water for more than 8 months per year are similar enough to group them into a single zone for analysis. It is important to remember that the objective of zoning is to distinguish between zones with such marked differences that they will require different strategies. **Do not zone for zoning's sake**. Effort must be made to seek similarities and thus reduce the zones to a manageable number.

1. Some markets may not appear on the map but the roads linking the territory to them should be clearly marked.

Table 2. Example of a matrix identifying homogeneous zones in an area.

Road type	Water		
	Permanent	>8 months/year	<8 months/year
Permanent	Communities with permanent roads and permanent water.	Communities with permanent roads and water for more than 8 months of the year.	Communities with permanent roads and water for less than 8 months of the year.
Temporary 	Communities with dry-season roads and permanent water.	Communities with dry-season roads and water for more than 8 months of the year.	Communities with dry-season roads and water for less than 8 months of the year.
Unimproved path	Communities with unimproved access and permanent water.	Communities with unimproved access and water for more than 8 months of the year.	Communities with unimproved access and water for less than 8 months of the year.

Source authors. Key variables, access to markets, and irrigation.

At the end of this process, each zone should be "named" to distinguish it from the others. Such designation can be based on each zone's special characteristics such as slopes (flat land, foothills, and hillsides), access (paved road, car tracks, and bridle path), altitude (highland, mid-altitude land, and lowland), or other locally acceptable designations. The logic behind the name assigned to each zone is that it should be clearly defined so that all agree on its use in the future.

Once the area is divided into zones, the livelihood resources available to the households and communities who live there can be assessed.

Analyzing Resources Available in Each Zone

The analysis of available resources by zone should be relatively quick because the goal is to highlight the most important themes. Secondary information can be used, if it exists or, through interviews with key informants, focus groups, or participatory transects. The information can then be organized into matrices that permit a brief outline on the resources within each zone.

Resources for employment are natural, human, productive/financial, and social in nature. For the first three cases, matrices similar to Table 3 can be used. For social resources, an additional methodological tool is proposed for filling in the matrix. Table 4, provides a matrix for human resources; and Table 5, a matrix for productive/financial resources.

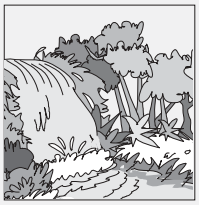
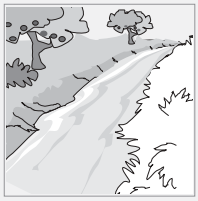
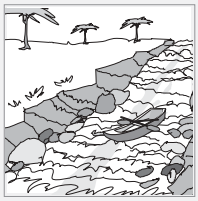
Analyzing Social Resources in Each Zone

To analyze the availability of social resources, i.e., organizations with business activities and the relationships among them, a "Venn diagram" can be used. This method enables the social/business networks in each zone to be visualized.

The method comprises five steps in which the organizations involved in the zone's agroenterprise development are:

- Identified.
- Briefly described.
- Located within or outside the zone.
- Have existing relationships with each other described.

Table 3. Example of a matrix showing natural resources in three zones.

Zone	Availability of natural resources		
	Water	Soils	Forests
Highlands (>1500 m) 	Sufficient, available from rivers or springs. Possibilities of irrigation by gravity. Water-producing area.	Fragile soils with steep slopes. Forest vocation in conflict with production uses. Need for soil conservation methods within cropping system.	Forest patches exist in the area and around some springs. Primary use is firewood for cooking with some collection activities.
Hill Land (600 to 1500 m) 	Sufficient water but some problems of access and contamination. Possibilities of irrigation in some sites.	Soils more stable with good production potential. Need to work with green fertilizers to improve fertility.	Few forests but fruit trees exist in the area.
Lowlands (600 m) 	Water limited in summer, with considerable contamination problems. Access limited to those living close to the river (which dries up in summer).	Stable soils with good production potential. Need to work with green fertilizers to improve fertility, retain water, and irrigate for summer.	No forests. Occasional trees in paddocks.

- Actors identified who are significant for rural agroenterprise development in the zone. For example, traders, processors, transporters, and wholesalers/retailers.

To achieve a complete analysis of these networks, this activity should be conducted with key informants or focus groups from several of the identified organizations. The steps for this type of analysis are described in more detail below.

Identifying organizations related to agroenterprise development

Key informants or focus groups are asked to name all the organizations that are involved in the zone's agroenterprise development. These organizations may be within or outside the targeted zone and may be formal (e.g., cooperatives, farmer associations, NGOs, or service companies) or informal (e.g., intermediaries, lenders, or workshops), but should have some relevance to the zone. This step aims to achieve consensus on these organizations and details about each one.

In this step, it is also important to differentiate organizations involved in agroenterprise development from those established for purely social purposes. The latter category would include, for example, water boards, parent associations, religious groups, and general associations for development. To facilitate this process, it is better to include only those organizations that fulfill an agroenterprise function, including the delivery of support services, within the zone or area.

Describing the organizations

For each organization identified in the previous step, basic information is obtained on its legal structure (e.g., cooperative, formal company, informal company, individual person, NGO, or association), activities, headquarters, area of influence, and other relevant data (such as the number of members, history, and achievements). This information can be included in a simple table as shown in Table 6. After compiling this information, the name of each organization identified is written on a circular card.

Table 4. A human resources matrix for three agroecological zones in an area.

Zone	Availability of skills and knowledge			
	Schooling	Local know-how	Technical support	Health
Highlands (>1500 m)	Low level of formal schooling (<60% of inhabitants can read and write). Local processes of participatory literacy and decentralized high-school education.	Local knowledge (held by older people) on the traditional uses of biodiversity. Broad knowledge of soil management, but not applied.	Technical support offered by rural promoters and infrequent workshops of NGOs.	Local healers. Access to health posts and hospital in urban center is difficult. Problems of malnutrition in some children. High rates of infant and maternal mortality.
Hill Land (600 to 1500 m)	Better level of formal schooling (>80% of inhabitants can read and write). Primary schools exist plus some decentralized high-school education.	Broad knowledge of cash-crop production. Some experience with processing and marketing.	Permanent technical support by promoters, technicians from FEDECAFÉ, private technicians, NGOs, and the government.	Local health post. Restricted access to the hospital in urban center. High infant mortality.
Lowlands (<600 m)	Good level of formal schooling (>90% of inhabitants can read and write). Primary schools exist plus access to high schools in urban center.	Knowledge of extensive livestock raising.	Technical support from private technicians, NGOs, and the government.	Health posts and rapid access to the hospital in urban center.

Table 5. A productive resource matrix for three ecological zones in an area.

Zone	Availability of productive/financial resources			
	Roads	Markets	Credit	Aggregate value
Highlands (>1500 m)	Bridle paths impassable in rainy seasons. Transport is on foot or by beast of burden.	Produce taken to "Hill Land" zone, where it is sold to local traders. Rarely visit the local market.	Credit available through community lenders and some rural savings and loans facilities.	No added value processing in the zone.
Hill Land (600 to 1500 m)	Roads difficult during rainy seasons. Small trucks and jeeps. Daily transport to urban center, leaving in the morning and returning in the afternoon.	Produce sold on farm to local and external traders. Farmers occasionally go to urban center to sell their produce directly.	Credit offered by local lenders, traders (advanced against harvests), rural savings and loans facilities, and some NGOs.	Incipient added value processing for sugarcane, fruits (selection and packing), and cheeses in family enterprises.
Lowlands (<600 m)	Roads accessible year-round. Buses run between major urban centers several times daily. Transportation relatively easy.	Produce sold on farm to local and external traders. Farmers frequently go to urban center to sell their produce directly.	Credit offered by local lenders, large traders (advanced against harvests), rural savings and loans facilities, some NGOs, and banks (for large farmers).	Added value processing for milk and cheese products through a cooperative.

Table 6. Format to describe agroenterprise organizations by zone.

Organization's name	Brief description			
	Legal structure	Activities	Headquarters	Area of influence

Locating the organization

The following step consists of geographically locating the different organizations within or outside the zone being described. To do this, we recommend drawing on a large piece of paper, or on the floor, a circle that represents the zone, and leaving blank space around. Then, cards representing the organizations with headquarters in the zone are placed within the circle, and those that have relationships with the zone but have their headquarters outside are placed outside the circle.

Within the zone, the cards of organizations that have their headquarters in the same community are grouped together, to clarify which communities have more and which have less agroentrepreneurial organization.

With the external organizations, those that have more presence or are more permanent in the zone are placed closer to the large circle that represents the zone, while those that have less presence or permanence are placed farther away. An example is given in Figure 8.

Analyzing the relationships between actors

In this step, a key must be developed to help qualify existing relationships in at least three senses: (1) their strength or permanence; (2) power (that is, who sends who); and (3) the type of exchanges (for example, goods for money), that take place in the relationship. Other themes can also be included (such as technology transfer), if they are of interest to the analysis.

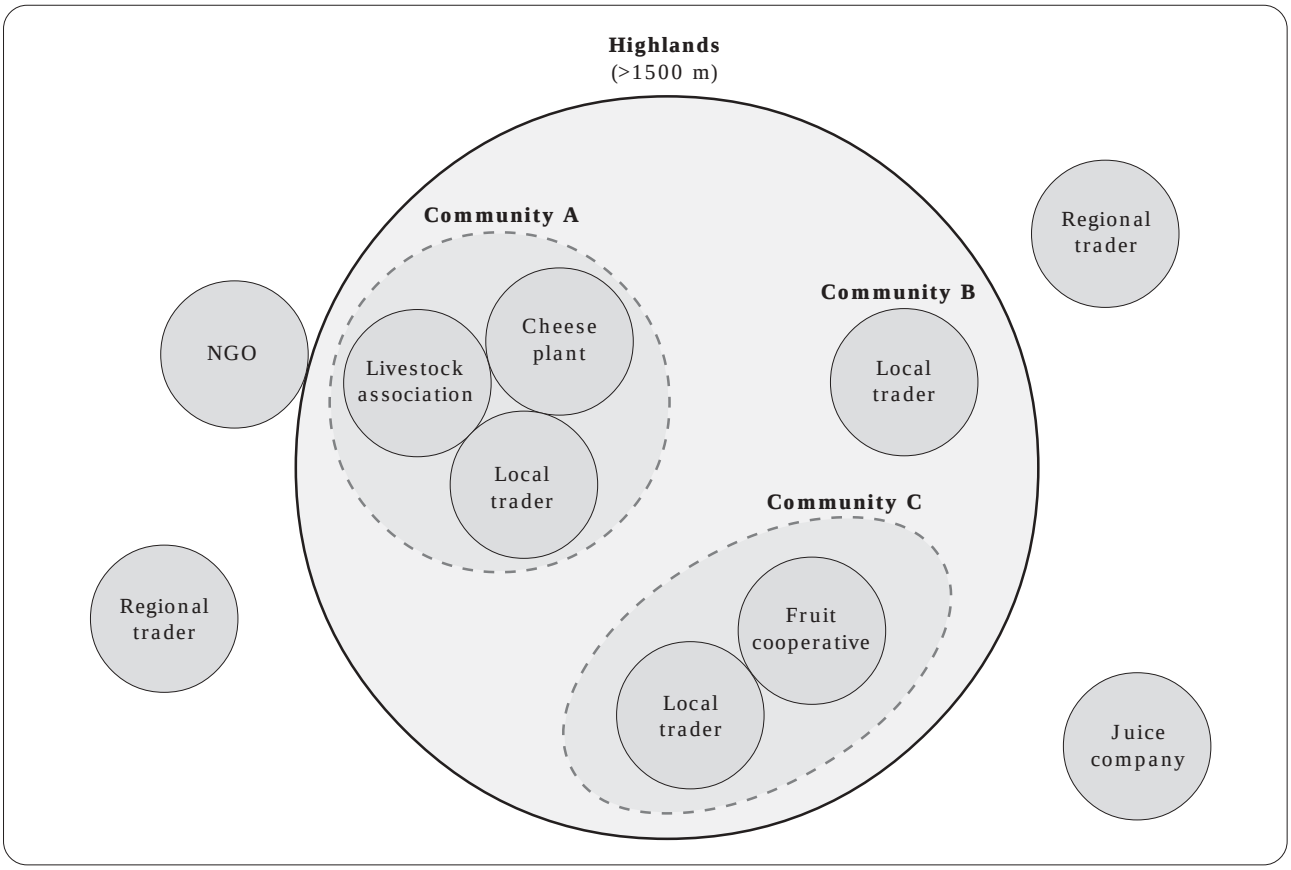


Figure 8. Example of locating agroenterprises in a given zone.

To explain the diagram a key is required that provides different types of lines, arrows, or codes that express dynamics between partners in terms of relationship strengths, power, and exchanges. Figure 9 gives an example of a key, and Figure 10 shows how it is applied.

Identifying key actors for the area's rural agroenterprise development

On finalizing this exercise for each zone, the results should be compared to see if any of the identified actors have activities, or are important, in more than one zone. Hence, identifying people or key organizations for the entire area's agroenterprise development, whether formal or informal, becomes feasible.

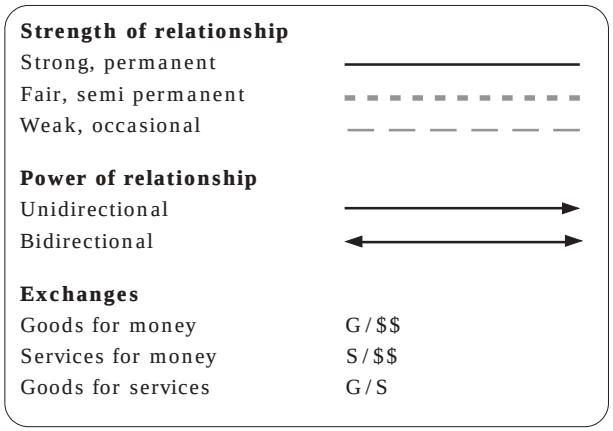


Figure 9. Key for qualifying relationships between agroenterprises in a zone.

Once the key actors are identified, they can be grouped by category of principal activity, as shown in Table 7.

Once the actors are located, the zones are reviewed one by one to identify actors with a presence in the various zones of the targeted area. Using Table 7 as an example, the key actors for rural agroenterprise development in the area—understood as the set of zones—are identified as the following people or companies:

- Fruit growers' association (in zones "highland" and "mid-altitude land").
- Coffee growers' association (in zones "highland" and "mid-altitude land").
- Local and regional intermediaries (at least the two regional ones who handle fruits, coffee, and milk derivatives).
- Juice company (in zones "highland" and "mid-altitude land").

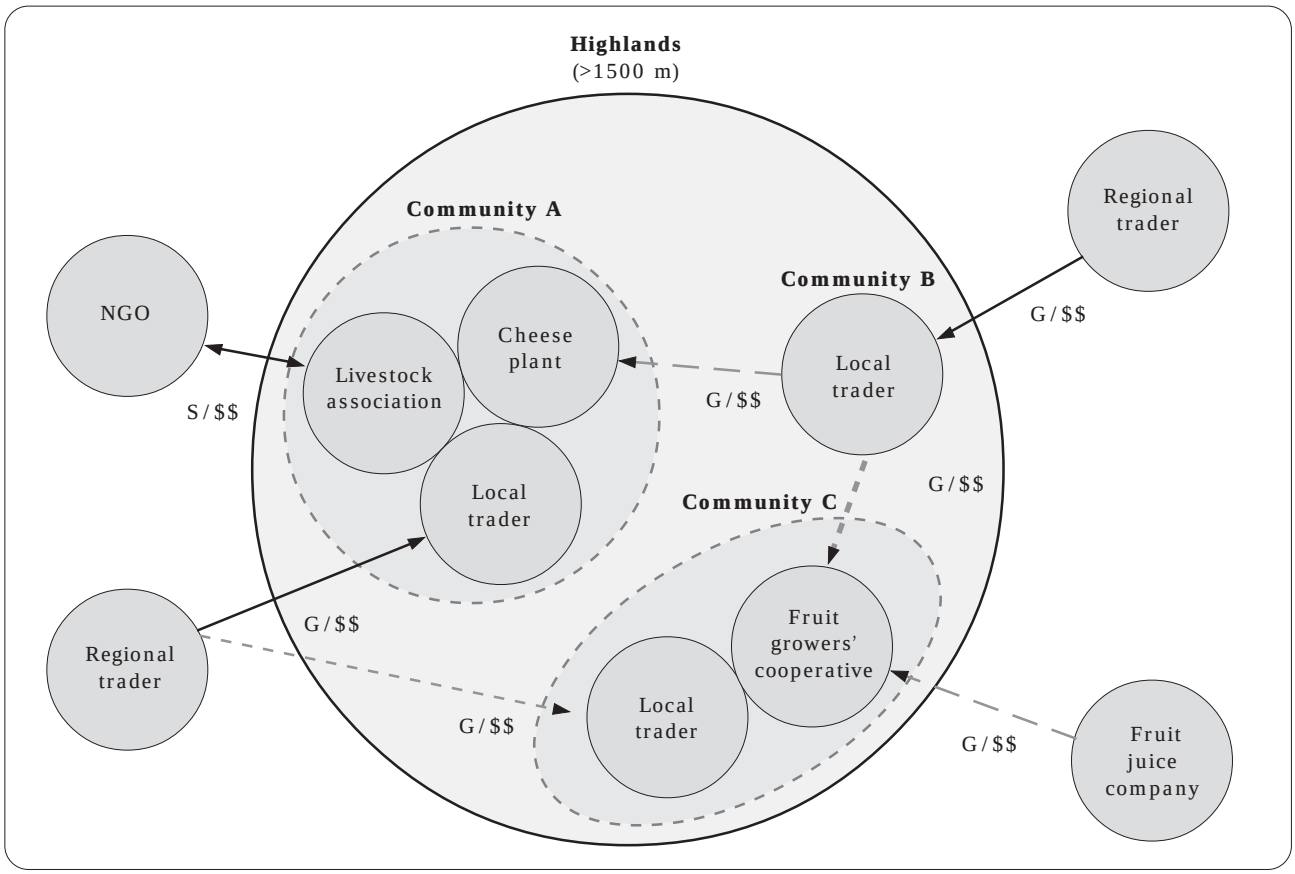


Figure 10. Highland example of qualifying relationships in a zone.

Table 7. Matrix of agroenterprise actors by agroecological zone.

Zone	Actor's principal economic activity			
	Production	Post harvest handling, processing	Marketing	Agroenterprise development services
Highlands (>1500 m)	Fruit growers' association. Municipal coffee growers' association.	Local fruit traders. Individual coffee growers. Juice company.	Local fruit and coffee traders. Three regional coffee and fruit traders. Juice company.	Fruits growers' association. Municipal coffee growers' association. Independent technicians for fruits. Village shop selling agricultural inputs.
Mid-altitude land (Hill Land) (600 to 1500 m)	Fruit growers' association. Municipal coffee growers' association.	Local fruit traders. Individual coffee growers. Juice company.	Local fruit and coffee traders. Three regional coffee and fruit traders. Juice company.	Fruit growers' association. Independent technicians for fruits. Village shop selling agricultural inputs.
Lowland (<600 m)	Milk producers' cooperative.	Three local plants for cheese and milk derivatives. Cooling plant (cooperative).	One plant and two regional traders (same as above). Multinational milk company in urban center.	Cooperative (inputs for members). Independent technicians for milk producers and processors. Shop selling inputs for cheese makers. Swiss NGO for cheese production.

- The independent technicians (present in all three zones).
- The village shop selling inputs (important for all three zones).

In zone "lowland", the actors related to milk production gain importance. Likewise, if we are interested in this product or zone, we need to include the cooperative, cheese, and milk plants, multinational company, and the Swiss NGO.

The importance of this exercise is that it gives a clear idea of who should be taken into account when considering the area's agroenterprise development options and gives an initial base on which to form a working group for a given theme. The list of related agencies does not mean that all should be represented, only the most relevant and effective organizations should be included in the working group.

Profiling Client Groups through Wealth Evaluation for Each Zone

The next step in conducting the basic diagnosis for rural agroenterprise development is to identify different social groups in the area. This complements existing secondary data, such as poverty[2] maps with more qualitative data.

This work should be developed with a focus group made up of key actors from each zone to identify possible variations in welfare between zones. By working at the zone level we can differentiate between livelihood strategies that are intensive, high value in small areas or extensive, produce of low value or no added value in large areas. An example is the difference between small-scale fruit production as opposed to extensive livestock ranching[3].

2. Secondary data such as census figures, poverty maps, and participatory poverty assessments can all be drawn on. Much of this data should already exist as it is a major criterion for targeting development funding in most parts of the world.
3. This is simplistic differentiation that leaves out a great many issues that you may confront at the field level. In Asia, for example, the inclusion of livestock in the production system may actually indicate a more intensive use of resources, not a more extensive strategy, while in Latin America ranching is rarely intensive.

Before beginning the analysis with the focus group, a short discussion about the different classes of resources (see definitions on page 7) is useful so that the participants have a clear idea of what will be analyzed.

It is best to begin with one extreme of the continuum of local welfare, either the most well-to-do or the least well-to-do, as this helps with the analysis of other groups. This process can be facilitated using the matrix (Table 8), and advancing top to bottom by columns or from right to left by well-being level. Care should be exercised in interpreting the relationships among the different well-being levels.

To carry out this analysis, a guide can be developed with the focus group to include questions such as the following:

- What access to the zone's natural resources do well-to-do families have?
- What access to the zone's natural resources do families with medium-sized incomes have?
- What access to the zone's natural resources do families who have very limited incomes have?

Similar questions are asked about human resources. The matrix in Table 8 can be adapted to note the information (it can also be prepared on a flipchart, as shown in Table 9). As this process is purely subjective, key indicators of well-being in each resource (e.g., measures of land or water for natural resources) must be identified and access of the population group to the key indicator can be discussed. Some indicators of well-being may change from zone to zone according to the life strategies that the respective population has developed while others (e.g., access to health services, formal credit, or public offices) can be kept more or less stable for the entire area.

Table 8. Well-being levels in terms of access to a zone's resources.

Well-being level	Access to the zone's resources			
	Natural	Human	Production	Social
High				
Medium				
Low				

The definition of wealth, "well-being" can vary by zone. What is moderately well off in one zone may be well-to-do in another and marginalized in yet a third. It may be more useful to distinguish only among three categories—'well-to-do', medium, and most marginalized—and not in as much detail as is shown in Figure 8. The group facilitating the analysis should make this decision. The number of well-being categories should be constant for all zones.

Zoning Livelihood Strategies by Wealth and Gender[4]

Some projects are designed to support specific groups, such as those living in extreme poverty and women. This section describes a method for understanding the different possibilities that a community's members have to generate income, using the concept of community development and social stratification.

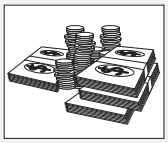
The following exercises should be developed for each zone, making use of the previous results (e.g., access to resources) to identify indicators that separate livelihood strategies. The indicators help explain why a household adopts one livelihood strategy versus another and may constitute key constraints to processes of agroenterprise development for certain segments of the population.

This exercise is carried out with key informants drawn from diverse groups in each zone. It is important to have good representation across different social groups in order to get a more complete picture of existing livelihood strategies. The steps to follow are:

1. Explain the objective of the exercise.
2. Request informant(s) to provide information on all sources of income available to community members (Table 10). Record income sources on a flip chart remove repeats and write different ideas onto cards. At the end of this process you should have a list of cards with different sources of income for households in the zone.
3. Group the sources of income, based on the ease of access to them for households in the zone; for example, can all households in the community access this activity? If not, who can? Who does <u>not</u> have access? Why not? Group the different sources of income.

4. Adapted from Gottret (2000).

Table 9. Well-being matrix from Valle del Cauca, Colombia.

Class	Criteria	No. of families at:	No. of farmers	Observations
Rich 	100 ha of well cultivated land, 120 head of cattle, 1 car, 1 house, earns 6–8 minimum wages, money at interest, businessman, access to credit and card.	Vergel = 0 Diamante = 1 Balsal = 5 Cristalina = 0 Manzano = 0 Producers Incera = 0	V = 0 B = 5 D = 1	Contracts labor No cultivation B = pastures and coffee D = lulo and Andean blackberry
Medium (rich)	50–100 ha of land, 25–50 head of cattle, 1 car, good house, 5 min. wages, businessman, has credit—easy access.	V – B = 10 C = 5 D = 5 M = 0 P.I. = 0	B = 10 C = 5 D = 5	Contracts more labor C = coffee and sugarcane D = lulo, And. blackberry, and livestock
Medium (poor)	20–30 ha of land, 10 head of cattle, 1 motor cycle, good house but unfinished, 2–3 min. wages, businessman, credit.	V = 12 B = 40 C = 0 D = 5 M = 6 P.I.= 0	V = 12 B = 40 D = 5 M = 6	Can contract labor, has cattle and crops; V = pastures, pigs, sugarcane, coffee, and granadilla; B = tomato, cucumber, and cabbage; M = coffee, pastures, and granadilla
Poor	5–10 min. wages, 1 milk cow, 1 horse, regular house, 1 min. wage, lives off farm, credit ok and restricted.	V = 6 B = 100 C = 6 D = 0 M = 4 P.I. = 11	V = 6 B = 100 C = 6 M = 4 P.I. = 11	Works on farm and sells labor, has cattle and crops; V = coffee, pastures, sugarcane, lulo; C = And. blackberry, coffee, lulo, plantains; M = And. blackberry and lulo; P.I. = coffee, pastures, and plantains
Very poor	Freeloader, house loaned, doesn't own transport, day laborer, credit is ok.	V = 2 B = 40 C = 5 D = 9 M = 3 P.I. = 0	V = 0 B = 0 C = 0 M = 0 P.I. = 0	Sells labor.

4. Once all conditions of access have been expressed rank them in order of importance, from the most important limitations to the least important, re order all cards in the form of a flow chart as shown in Figure 11.
5. Identify sources of income that are stable (=), increasing in importance (↑), or losing in importance (↓). An example is shown in Figure 12.
6. The last step is to examine the importance of the different economic activities from the point of view of gender. The key question in this step is: Who is mainly responsible for developing this activity? During the first level of analysis, this question can wait. If there is interest, there are several ways of advancing but perhaps the simplest is to define, by economic category, the specific activities carried out and by whom. An example of this second level of analysis, extracted from Figure 13 appears in Table 11.

This study can be deepened by asking who decides what to do, when and who controls income. This probes the question of who makes decisions related to economic activities and who does the work. With this knowledge, future efforts can focus on issues of equity in relation to income generating activities.

Table 10. Example of income sources for community members.

Sources of food security	Sources of income
List major products Maize Cassava Green vegetables	Production of: Basic grains Vegetables Milk Goats
Livestock Goats Chickens for eggs Cow for milk	Work in the textile factory Carpentry Handcrafts Work for wages on farms

At the end of these exercises, the enterprise team should have a clear idea of the livelihood strategies of specific segments of the population in specific zones. Some strategies maybe similar and, thus, can be generalized to the entire area. However, it is highly probable that different client types use specific income strategies and by understanding these options, agencies can tailor interventions for specific clients.
To complement this livelihood analysis, we recommend a quick review of innovation processes in the area, as described under the next heading.

Innovation Processes for Each Zone, Resource, and Social Group

By understanding innovation processes we can identify how change takes place over time and the channels thought which it flows. This can assist in the effectiveness of future intervention, whether it is hard technology (such as new varieties, production systems, machinery, or mobile phones); soft technology (such as learning new skills), and organizational technologies (such as new social structures and building links to other institutions).

Often, innovations are related to each other, e.g., improvements in production leads to improvements in organization to sell the new surplus and grouped by themes (e.g., specific products of a zone or natural resources). An exhaustive inventory of innovation is not necessary the aim is to obtain an idea of outstanding innovations in each resource, how they came about, and their impact.

To understand innovation history and flow, we revisit the zones resource tables, and the social differentiation carried out as part of the livelihood analysis. This information can be generated with a focus group made up of key informants from the zone that represents various social groups.

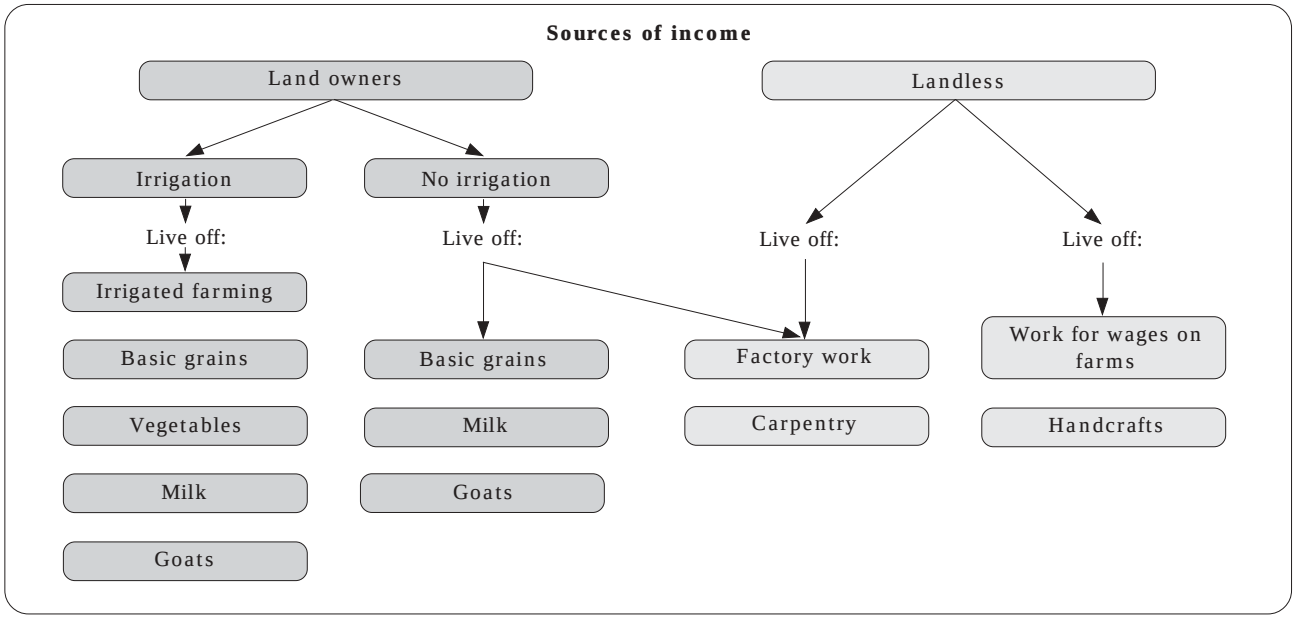


Figure 11. Example of income sources based on zoning within a project area.

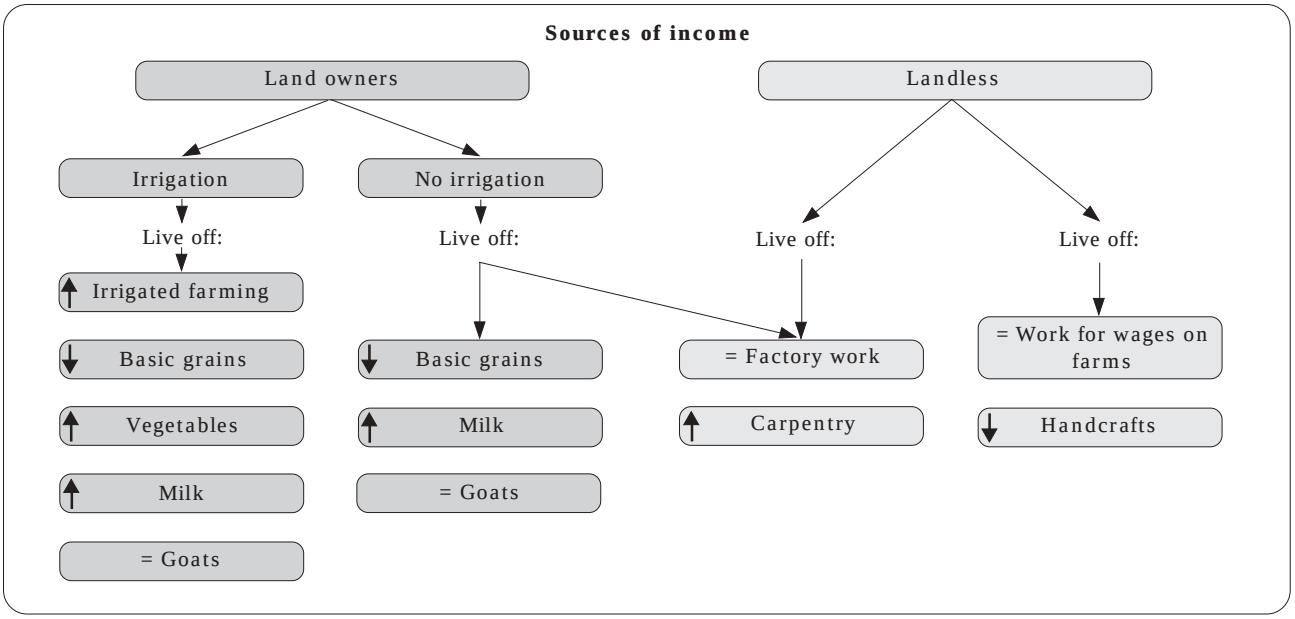


Figure 12. Example of income trends within a zone.

Table 11. Gender analysis of an economic activity in a given zone.

Category: Growing market vegetables	Importance: Average			
Activities	Responsible for the activity			
	Women	Men	Both	Children
Purchase of seed		✓		
Preparing seedbeds		✓		
Transplanting	✓			
Hilling/weeding		✓		
Irrigation	✓			
Pest management			✓	✓
Harvest	✓	✓	✓	✓
Washing, selection, and packing	✓			✓
Marketing		✓		

To facilitate this process, the following steps are suggested:

1. Remind participants of definitions used for resource analysis.
2. Ask the participants to identify important moments of change in each resource (one by one). Participants should discuss and agree on what constitutes an "important moment of change" based on their own criteria.
3. Document changes by resource and ask the participants to clearly identify the innovation (what was it and why was it needed) and who invented or adopted it for the first time. At this stage, it is important to identify the innovators by name, their geographical location, and levels of well-being. Here, profiles of each zone's innovators should be made.
4. Once the innovation and its innovator(s) are identified, ask the participants to analyze the sources of information that led to the innovation. Was it a process of trial and error carried out by one farmer only? Or was it a combination between external information (e.g., radio, television, flyers, or visits) and local ingenuity? Was it an external actor who shared his or her knowledge with the innovator(s) (e.g., training, written information, or field days)? Most likely, the innovation builds on a combination of factors. What we hope to

Table 12. Identifying innovations, innovators, dissemination, and impact in a zone.

Resources	Innovation (change)	Innovator(s)	Sources of innovation	Dissemination channels	Impact
Natural	Use of live barriers to control erosion and feed livestock, pigs.	Landowning farmers of moderate wealth.	External NGO, training, participatory trials, farmer exchanges.	Farmer to farmer exchanges between moderate and low wealth farmers.	Increased presence of barriers, extra animal feed and some additional income.
Human	Decentralized high-school education program for those without access to formal schooling.	Teachers.	External NGO, government.	Rural promoters (farmers of moderate wealth).	Better access to education.
Production	New and more efficient design for sugarcane mills.	Mill owners (moderate to wealthy farmers), skilled workers.	Visit to another part of the country, information from a specialized research center.	Skilled workers.	Six mills with improved technology in the area (belonging to moderate to wealthy farmers). Greater demand for sugar cane year round.
Social	Organization of fruit growers' association.	Farmers of moderate to low wealth.	Producers, advisory services of external NGO.	Producer to producer (invitation to become part of the association).	Better channels (contracts) for sale to fruit companies, increased volumes and income. Better organization and negotiating skills.

understand is the relative importance of the local know how versus sources of external information. This process to looks at how innovations are introduced into the zone and how such introductions can be facilitated in the future.

5. Once the innovation was made, how was it disseminated among the zone's households and communities? How did new people learn and adapt the innovation for use on their farms? Who disseminated the innovation? Was it intentional (e.g., workshops, visits, or organized field days) or spontaneous (e.g., informal talks in the village or the general store)?
6. What impact has the innovation generated? Who benefited from the innovation and what was their well-being level? An exhaustive analysis of impact is not required but merely to ask participants to evaluate the innovation's relative importance in the zone. If they have concrete data (e.g., X number of sugar mills were improved with the technology), these should be noted.

For analysis the focus group's conclusions can be noted in a matrix similar to that in Table 12.