

Production vs. Conservation – Farming on Mont Lozere. (A2 WJEC)



Discover Ltd.

“Timbers”,
Oxted Road,
Godstone,
Surrey. RH9 8AD

www.discover.ltd.uk

©Discover Ltd 2009

PRODUCTIVITY VS. CONSERVATION - FARMING ON MONT LOZÈRE

TEACHERS' NOTES

High altitude, a harsh and unreliable mountain climate and poor soil quality characterise much of the Massif Central upland region of France. The agricultural systems in the valley give a fantastic example of how extensive farming can be – all of our farmers are organic or border-line organic, and one in particular exploits this fact in his direct marketing of 'Organic Beef from Mont Lozere'.

This is an excellent opportunity for students to see a farming system which has been carried out in a similar fashion for over 300 years, with the attendant effects of this stability of usage on the surrounding environment. In this unit the problems associated with farming in this very marginal area are explored through farm visits, interviews with farmers and land capability surveys. Appendix 1 provides a framework for the visit to the farms that can be used by the students as a guide to their note taking.

Two case studies of contrasting farms in the Souteyran Valley are available to highlight different approaches to extensive farming in the valley, and the role that the farmer and other organisations play in this. Students can visit one or two farms during this half day unit. These case studies may later be contrasted with examples from farms in the UK – in the local area of the school.

The role of outside organisations in changing agriculture in the area is examined. In particular the role of the EU, with its Common Agricultural Policy (CAP) and the Parc National de Cevennes (PNC) in bringing about change is investigated.

Since the farmers receive no payment for answering questions, groups might consider bringing a small gift as thanks for any help given. Also, at times they may not be able to meet with groups and we ask staff to respect this.

KEY SYLLABUS AREAS

Unit BY5: Environment, Genetics and Evolution

5.8 Effects of human activities and sustainability

(c) Agricultural exploitation. Conflicts between production and conservation and possible means to resolve such conflicts.

Reference Texts:

Bowler (1996) *"Agricultural Change in the Developed World"* Cambridge

Burton, S & Jeanes, A. (1997) *"Central Southern France"* Hodder and Stoughton.

INSEE. (1996) *"Tableaux de l'Économie du Languedoc-Roussillon."* INSEE

Nagle and Spencer (1996) *"A Geography of the European Union"* Oxford University Press

Waugh, D. (1990) *"Geography – An Integrated Approach"* Nelson.

Introduction

General Information

The Common Agricultural Policy – Productivity vs. Conservation.

Although in existence for less than 50 years, the origins of the CAP and state intervention in farming date back to the 1920's and 1930's. At that time prices for European farm goods fell, poverty among farm populations increased and the whole industry was in a state of depression. The problem was the overall structure of farming, with small producers selling to a dispersed market. Individual producers could do little to influence prices - at times of low prices, farmers overproduced to compensate for falling income, which taken together would force prices lower. This is known in economics as a 'perverse supply response'. Individual states intervened to set up marketing boards to regulate the marketing and production of major farm produce, the Milk Marketing Board in the UK, was a classic example.

State intervention was also felt to be necessary to control the rising level of cheaper produce from outside Europe. Most states imposed tax on agricultural produce and thus offered some protection to domestic producers. France placed taxes on wheat imports in 1929 and 1931, while ensuring that a fixed proportion of home-produced wheat must be used in flour production. After WWII this policy was extended to include;

Fixed minimum prices for home producers at levels above import prices;
Import levies on cheaper imported products;
Surplus domestic production was purchased by state intervention agencies.

When the CAP was created in 1957 following the Treaty of Rome and greater European integration, it was hardly surprising that protection of agriculture would be a primary aim - this was seen to be a necessary part of reducing social inequality within the Community.

Three basic principles lay behind the formation of the CAP:

A Unity of Market: a single agricultural market in which goods would move freely.

EEC (later EC and EU) preference: products originating in the community should be purchased in preference to those from outside.

Financial Solidarity: It would be funded by the community.

The Treaty of Rome (Article 39) laid down five objectives for agriculture:

To increase agricultural productivity through promoting technical progress and by ensuring the rational development of agricultural production.

To ensure a fair standard of living for the agricultural population.

To stabilise agricultural markets.

To guarantee secure food supplies.

To ensure reasonable retail prices to consumers.

These Objectives would be achieved by:

Price Management

A system of guaranteed prices and if necessary 'intervention buying' (authorities buying up produce if the market price falls below the guaranteed price) ensured a good return for producers. Import levies and export subsidies protected European farmers from the variable world markets. This was backed by the system of community preference that ensured European markets were served first by community producers.

Direct Producer Payments

These were used to subsidise farmers by paying either a fixed rate per animal for livestock or 'deficiency payments' to make up the difference between market value and the intended level of return (olive oil and tobacco were both included in these).

Structural Payments

Funds were made available to improve farm structures and increase profitability. Community funds were available for farm amalgamation and improvements to marketing and processing.

The Successes and failures of the CAP

Successes: By the 1980's, a number of the original CAP objectives had been achieved. Price stability, a free trade in agricultural products between member states (rising from ECU 4.38 billion in 1968 to ECU 98 billion in 1990) and security in food supplies had all arrived. In 1973 the EEC was practically self-sufficient in cereals, beef, dairy products, poultry and vegetables. However it was becoming increasingly obvious that this success had not been achieved without significant costs and dissatisfaction with the system was growing.

Failures:

(1) Food mountains:

The CAP encouraged production for which there was no demand. In 20 years, milk and cereal production increased by 50% and 75%, whilst consumption remained static. By 1992 the EU was paying to store 52 days supply of butter (224,000 tonnes), 38 days supply of beef (627,000 tonnes) and 46 days supply of cereals (19,612,000 tonnes)

(2) Economics:

The CAP was a tremendous drain on resources in the community. In 1985 it consumed 70% of the budget, whilst agriculture provided only 3% of the GDP. Subsidies equalled £10,000 for every agricultural worker and £653 for every agricultural acre. Even with community preference more food was imported than exported in the EU, a deficit of some £14 billion.

(3) Social equity:

The CAP led to intensification, concentration and specialisation. Although tremendous sums of money poured into agriculture, they were linked to production. Therefore the largest, most efficient farms got the greatest rewards (80% of spending went to 20% of farmers).

(4) Global politics:

EU policy of dispensing with surplus produce on the world market through export subsidies was bringing it into conflict with a number of politically influential countries, such as the USA, Canada, Australia and New Zealand, as well as a range of developing countries. These countries also subsidised prices causing problems for developing world producers.

(5) Environment:

Increasing environmental awareness, plus animal welfare demands (brought on by a number of health scares) also brought unwanted productivity into the spotlight. In the UK the Nature Conservancy Council (NCC), estimated that between 1949 and 1990: 40% of remaining ancient broadleaf woodland, 25% of hedgerows, 30% of heath, 60% of wetlands and 30% of moor had disappeared in the intensification of agriculture. Fears were also expressed over the widespread use of chemicals necessary to increase productivity.

1992 CAP Reforms

In May 1992 the MacSharry reforms were introduced to address a number of the problems recognised within the CAP. The main changes were to reduce market support prices whilst increasing the role of direct payments. At the same time controls and incentives would be introduced to reduce production. Finally environmental concerns were addressed in response to public concerns and to further reduce productivity.

The main provisions of the act included:

A progressive reduction in cereals support price, offset with a direct area payment subsidy. All arable farmers over 20 hectares would have to set-aside land to receive this payment;

The guaranteed price of beef was reduced and ceilings set on the amount of beef purchased into intervention. Premium payments would be paid to increase quality;

Milk quotas were cut and prices frozen. Wine and olive oil quotas were increased;

A move towards Structural Payments to support rural communities rather than agriculture.

Limits placed on the numbers of sheep for which a producer would receive payments;

The implementation of 'agri-environmental measures'. These increased incentives to reduce inputs, organic farming, reduce livestock numbers, use environmentally sensitive management and increase land for public access and recreation;

Agri-Environment Measures (AEM's).

In 1992, environmental considerations were made an integral part of CAP reform. The agri-environment regulation gave emphasis to agricultural methods compatible with the protection of the environment and the maintenance of the countryside. The overall aim of the schemes introduced is to "reward and encourage those farmers who have taken action to conserve and enhance the rural environment". Participation in AEM's are voluntary. In the Cevennes it is the greater emphasis that CAP places on AEM's that offers the most financial benefit to farmers. Three types of agri-environmental policy can be identified:

Financial compensation for not developing modern agricultural systems;

Financial enticement for farming in environmentally sustainable ways (along the lines of the Countryside Stewardship Scheme in the UK);

Regulation of farming practices (along the lines of the Nitrate Sensitive Areas in the UK).

Into the 21st Century

Whilst the changes have helped to reduce surpluses, the EU still pays enormous sums into agriculture. Whilst the system of paying farmers not to produce keeps agriculture profitable, is it sustainable?. Also as part of trade agreements, particularly with the USA, tariffs and export subsidies have also been reduced,

opening up EU farmers to world competition. The long term aim is to reduce support for agriculture throughout the developed world. However if the proposed absorption of former Eastern European states into the EU takes place then yet more reform may be necessary.

Specific Information:

Farming in France.

Central Southern France is a diverse region facing a number of challenges. Physically, it consists of five broad zones.

The coastal lowlands are flanked by sand dunes and marshes extending eastwards into the Camargue delta formed by the glacial-fed River Rhône;

The Plain of Languedoc rises steeply to the garrigue or scrub covered southern slopes of the Cévennes Mountains, where rivers have cut deep gorges;

To the east lie the folded structures of the Alps Mountains, culminating in Mont Blanc at 4,808 metres;

Inland lies the inhospitable Massif Central rising to nearly 2,000 metres and averaging 1,200+mm precipitation annually. Within the Massif Central, there are 5 main agricultural zones: mixed farming, cattle rearing, rye & sheep, vine growing and the high pastures.

Farming in the Cévennes Mountains is marginal with low potential for arable farming. This is due to many factors, but the physical environment is the major “determinants”. Table 1 shows how climatic, social, relief and soil conditions combine to create this marginal farming region – in fact yields are 2/3rd of French average. Despite this, the Cévennes is strongly agricultural and contains a large rural population. This upland area appears to have all the characteristics of an “economically poor” region.

The 19th Century saw traditional peasant-based subsistence polyculture being practised in the region, but the pattern of farming seen today is significantly different. Many farmers have witnessed considerable changes in their activities in the last 40 years with the implementation of the Common Agricultural Policy (CAP), but they may need to undertake further modifications to secure a more permanent future. In the later 19th Century the construction of road and rail networks reduced the isolation of this region and partially integrated it into the national economy. The effect of this was to highlight the inefficiencies of the agricultural sector, which increased its rate of decline. Out-migration made the situation worse as the more ambitious sought opportunities elsewhere.

The rural problems of the Massif have been tackled in three ways, although little was done before the Second World War. The emergence of a complex planning system in the 1940's and 1950's and a series of national and regional plans implemented in the 60's, 70's and 80's has seen some attempts to overcome the social and economic difficulties of the countryside. Not all of these, however, have been successful. One major problem has been the fact that the Massif is not treated as one planning unit. Four planning divisions operate in the area and this has led to a lack of integrated planning, incomplete spatial coverage, fragmental research and limited planning proposals.

One important policy has been the encouragement of co-operatives. This has enabled those farmers remaining on the land to join with their neighbours and pool their knowledge and expertise. Holdings can then be run more efficiently; costs may be reduced in the bulk purchase of seeds, fertilisers and equipment while sales may benefit from the careful marketing of produce. France has currently one of the most developed networks of co-operatives in the EU. In 1990, 78% of pigmeat, 75% of cereals, 50% of milk, 35% of vegetables and 30% of beef was sold through co-operatives. However, the introduction of co-operatives has not been all that successful in the Cevennes. The fierce independence of many farmers has resulted in resistance to the co-operatives; in many cases all co-operatives have been able to do is formalise existing arrangements between families. Some co-operatives for marketing, storing and processing of farm products have made considerable progress. The work of the Roquefort dairies in the Limestone Causses is a good example.

Another approach has been land consolidation. The aim was the reduction of fragmentation by collecting scattered plots and re-grouping them into compact units. In the more favourable areas of the Massif, this has worked well, with much of the land being re-organised and new roads, irrigation and drainage installed. In the higher parts of the Massif (Lozère) consolidation has been much more difficult and little has been carried out. This is possibly due to the history of religious strife in the area and as such a deep association with the land. The future of farming and the increasing "competition" from forestry and recreation are important considerations and have influenced the allocation of finance by planners.

The tasks of farm enlargement and consolidation have been entrusted to the SAFER Organisation (Societe d'Amenagement Fancier et d'Etablissement Rural) set up in the 1960's. Eight SAFERs are responsible for the Massif Central. They have considerable powers. All sales of farmland, for example, require the approval of the local SAFER. The SAFERs are charged with enlarging existing farms to create 'viable units' (i.e. large enough to employ 2 people full time per year) and safeguarding the family character of French farming. The SAFERs can then sell this land to younger farmers wishing to enlarge their holdings. Forty per cent of farms enlarged or created by the SAFERs were returned to farmers under the age of 35. The SAFERs have been relatively successful in the Massif where the low cost of land has reduced overall operating costs.

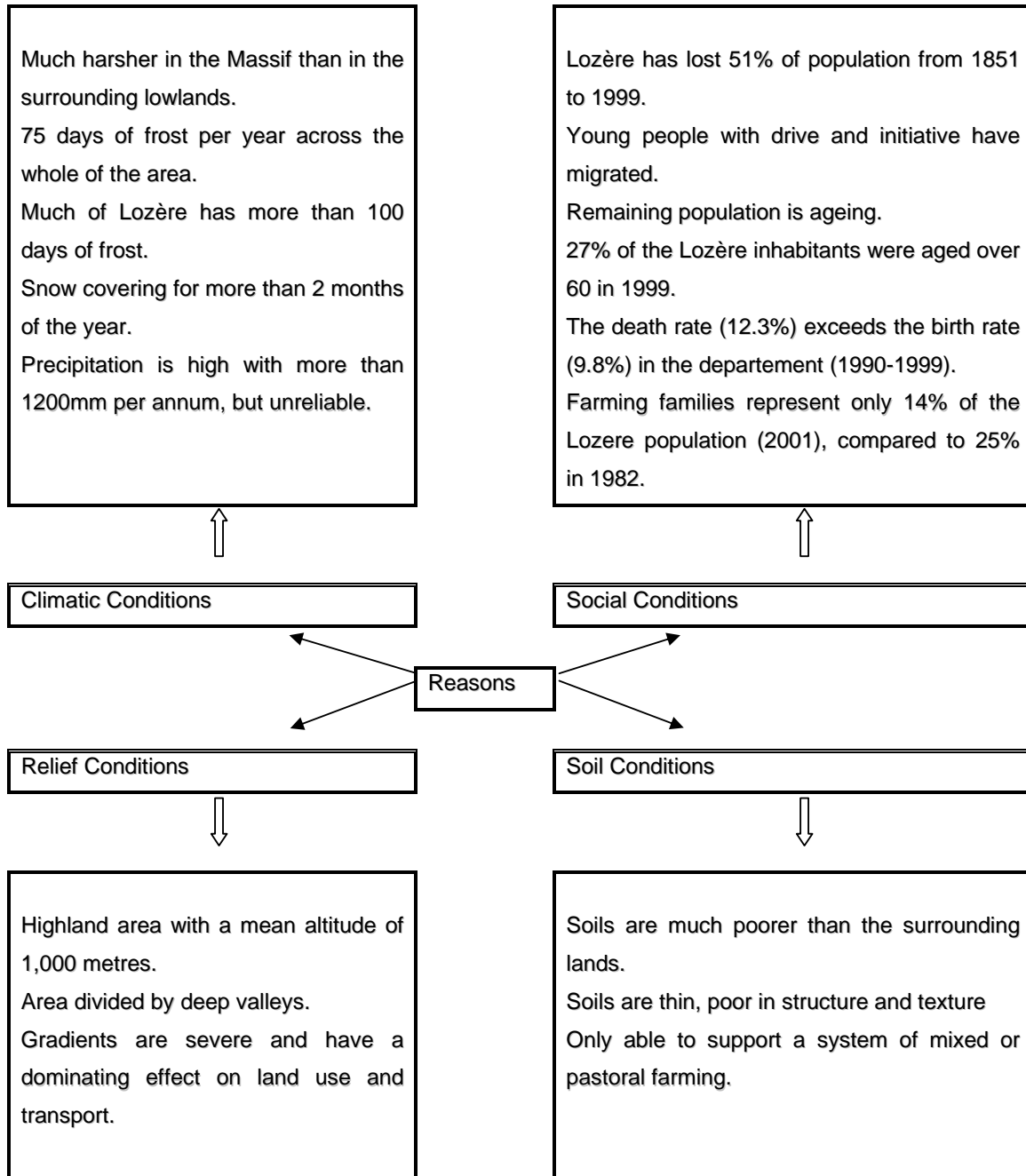
The final approach has been an attempt at integrated planning by SOMIVAL (Societe pour la Mise en Valuer de l'Auverge-Limaisin). This planning corporation was founded at Clermont-Ferrand in the 1960's to undertake research and to propose and implement integrated schemes for rural management. The aim here is to encourage co-operation and joint ventures with other organisations operating in the Massif. Agricultural improvements have come in two ways:

Firstly, SOMIVAL has set up pilot farms that have experimented with new methods of crop production, animal rearing and irrigation;

Secondly, management plans have been prepared for individual villages as well as for entire agricultural regions. In these plans, land use is zoned so that rational use can be achieved in the future. The problem of communal lands (land owned collectively by hamlets and villages in the mountains and used for grazing) that have been under-grazed and replaced by scrub and moorland has particularly benefited from this approach.

SOMIVAL has introduced other policies that have an important impact on the rural landscape. Afforestation has been encouraged with SOMIVAL seeking out the best areas in the Massif for growing timber and also giving grants to landowners wishing to plant trees. In other areas SOMIVAL has worked hard at developing recreational potential. The Massif offers a number of attractions for tourism: heritage architecture, thermal springs, lakes and rivers.

Table 1: Why Is Farming Marginal In The Lozère Region?



The Souteyran Valley suffers, as does the whole of France, from the legacy of the Napoleonic laws relating to land inheritance. Small farm size and high level of land fragmentation characterise the farms in the valley.

The terms “morcellement” and “parcellement” describe this sub-division of land into small farms and the scattering of plots within individual farms respectively.

Farm Size Comparison:

	Under 5 ha	5-20 ha	20-50 ha	Over 50 ha
Massif Central	13%	40%	34%	13%
France	27%	34%	28%	11%

The modern commercial farming era came about largely as a result of infrastructure improvements. There is an easily observable pattern of varying land use within the valley – on the flatter land around the settlements (in the base of the valley) the land has been improved to create lush meadows and this gives way to cleared grazing land with scrubland on the higher slopes. Ancient terraces can be found throughout the sides of the valley, some still supporting beech woodlands. Further information can be found in the tables below:

Land Use Breakdown - 1995

Land Use (hectares)	Lozère	Languedoc-Roussillon	France
Agricultural Land (utilised)	281,015	1,091,191	30,058,858
Agricultural Land (uncultivated)	15,429	560,278	3,001,786
Woodland	202,000	815,000	14,809,590
Inland Lakes	-	18,950	138,847
Non-Agricultural Land	19,200	287,760	6,668,392
Total	517,644	2,774,079	54,677,473

Agricultural Land Use Breakdown - 1995

(all hectares)	Part-Breakdown	Lozère	Languedoc-Roussillon
Agricultural Land		281,015	1,091,191
Total Arable Land		40,700	286,238
	non-permanent prairies	25,300	51,735
	cereals	13,900	114,418
	other	1,500	120,085
Total Cultivated		240,315	804,953
	grassland	240,000	463,200

	other	315	341753
--	-------	-----	--------

Price Of Agricultural Land –1995

Franc per hectare	Lozère	Languedoc-Roussillon	France
Ploughable Land	11,400	23,800	20,100
Unimprovable Land e.g. prairies	12,900	12,600	14,500

Livestock - 1995

Millions of head	Lozère	Languedoc-Roussillon	France
Cows/Bulls	115.0	163.5	20,660.8
Pigs	10.6	54.4	13,795.9
Sheep	226.2	463.6	10,556.1

Pont de Montvert Commune (2000)

No of Farmers (2000)	No of Farmers (1988)	Agricultural Land (ha)	Ploughable Land (ha)	Total number of cows
22	34	3091	54	434

Aims

- To examine the impact of agriculture on the environment within the Souteyran Valley.
- To determine the importance of limiting factors on farming operations in the Souteyran valley:
- Physical factors (inc. Land Capability Exercise)
- Economic factors
- Social factors
- Political factors
- To debate future scenarios for farming in the Souteyran Valley.

Hypotheses

Land use in the Souteyran valley is severely limited by physical factors.

Economic objectives are not the major motivational factor for farmers in the Souteyran Valley.

Agriculture has a negative impact on the Souteyran Valley.

Method and Organisation of Study

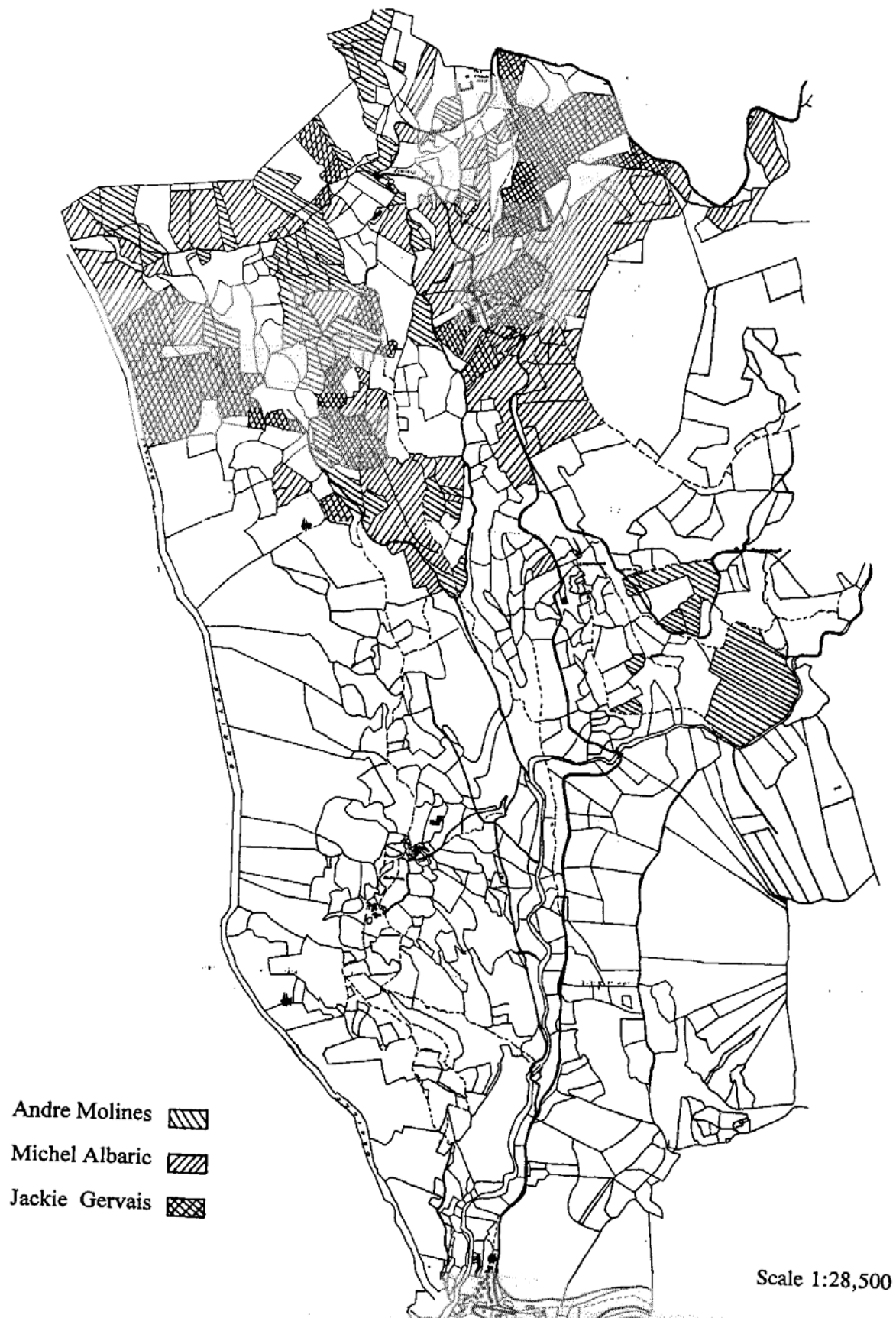
Task One: To determine the importance of Limiting factors on farming operations in the Souteyran valley.

Carry out the Land Capability Exercise in a number of contrasting fields. See Recording Sheet 1.

Task Two: To examine the impact of agriculture on the environment within the Souteyran Valley.

As you walk around & between the farms, complete the farm recording sheets (Appendix 1). These are laid out to help you to structure your thinking about the issues.

Figure 1: Field patterns in the Souteyran Valley



Recording Sheet 1
Land Capability Assessment

Field Location	GRADE
SOIL FACTORS	
a).Soil Texture
b).Soil pH
c).Stoniness
d).Soil Depth
e).Soil Moisture Evidence of gleying	None
	Moderate
	Severe
f).Soil Droughtiness Crop wilting in summer	None
	Moderate
	Severe
g).Soil Erosion Erosion by wind or water	None
	Moderate
	Severe
SITE FACTORS	
h).Gradient
i).Microrelief Restrictions on machinery use.	None
	Moderate
	Severe
j).Flood Risk Frequency	Rare
	Occasional
	Frequent
CLIMATIC FACTORS	
k).Annual Average Rainfall (AAR)
l).Aspect
m).Wind Exposure	Negligible
	Moderate
	Severe
n).Frost Risk (No of Days)

Land Capability Assessment Results

GRADE

Soil Factors

a).Soil Texture	Sandy loam, Silty loam, Silty clay loam	1
	Sand, Clay loam, Clay	2
b).Soil pH	5.5 – 7.5	1
	> 7.5	2
	< 5.5	3b
c).Stoniness	0 - 5%	1
	6 – 10%	2
	11 – 35%	3
	36 – 50%	4
	> 50%	5
d).Soil Depth	> 60 cm	1
	45 – 60 cm	2
	30 – 44 cm	3a
	20 – 29 cm	3b
	15 – 19 cm	4
	< 14 cm	5
e).Soil Moisture	No gleying	1
	Moderate gleying	3a
	Severe gleying	5
f).Soil Droughtiness	No evidence of wilting	1
	Moderate crop wilting	3b
	Severe crop wilting	5
g).Soil Erosion	None	1
	Moderate	3b
	Severe	5

Site Factors

h).Gradient	< 7o	1
	8 – 11o	3b
	12 – 18o	4
	>18o	5
i).Microrelief	No restrictions	1
	Moderate restrictions	3b
	Severe restrictions	5
j).Flood Risk	Rarely floods	1
	Occasionally floods	2
	Frequently floods	4

Climatic Factors			
k).Annual Average Rainfall	Less than 500mm		3
(AAR)	500 to 750mm		2
	750 to 1000mm	1	
	1000 to 1250mm		2
	1250 to 1500mm		3
	Over 1500mm		4
l).Aspect	SE, S, SW		1
	NE, E, W, NW		2
	N		3a
m).Wind Exposure	Negligible		1
	Moderate		2
	Severe		4
n).Frost Risk	Negligible (less than 5 days)		1
	Moderate (5 to 50 days)		2
	Severe (more than 50 days)		4

Land Capability Assessment.

Agricultural Land classification grades:

Grade 1

Land with only minor climatic and no physical limitations to use. Will usually be farmed intensively for high value crops. (e.g. Market gardening)

Grade 2

Land with minor limitations, which will reduce the choice of crops or crop variety, and limitations which may interfere with cultivation, eg. Shallow soil.

Grade 3a

Land with moderate limitations that will restrict the choice of crops and crop variety. Cereals may be grown but careful management, and variety selection is required.

Grade 3b

Land with more restrictions than 3a. Similar crops may be grown - yields will be lower.

Grade 4

Land with severe limitations - will restrict its use to pasture and hay/silage production.

Grade 5

Land with very severe limitations, which greatly limits its use. Without intensive management, only suitable for rough grazing or forestry.

Data Processing And Analysis

Task One: To determine the importance of the limiting factors on farming operations in the Souteyran valley.

Using the Land Capability Exercise calculate the value of the land.

What factors are the most limiting to the farmer and to what extent could these be modified? What factors have not been considered? Points to consider are listed below:

Physical factors:

Although precipitation amount is high, it occurs in heavy bursts. This introduces danger of erosion on cultivated areas. There is also an effective drought for much of the summer. What evidence did you observe to overcome this problem?

Temperatures are often sub-zero in winter requiring livestock to be kept inside for several months (at high costs).

The relief of the land (often boulder-strewn) limits the use of machinery so less efficient methods are employed. What influence does this have of the breed of cattle stocked?

Economic factors:

The farmers are being 'squeezed' to some extent by the widening gap between the costs of industrial inputs (machinery etc.) and the value of agricultural outputs, despite the influence of interventions. It is therefore more expensive to introduce and maintain technology now than previously.

The introduction of the Euro in 2002 will, in theory, open up markets further in EU states. Will this be an advantage or disadvantage to farmers of the Souteyran Valley?

Social factors:

Until a few years ago, the average age of farmers was much older than elsewhere in France. Efforts have been made to retire these older, less-qualified farmers off early (the Mansholt plan) which has been partly successful.

Should the experience of these older farmers be discarded in favour of younger farmers whose experience comes from their time at agricultural college?

The fragmentation issue is difficult to solve since valley is of very variable quality, the desire to hold onto land is very strong and the value of land is very low (hence there is little incentive to get rid of it). Should SAFER attempt to consolidate uplands region like the Souteyran Valley, or should it concentrate on more economically viable agricultural regions?

Political factors:

In effect, the farms in the area are so marginal that they are on the limits of profitability; some might argue that they are maintained through subsidies. These might be EU (for improving marginal land, rearing cattle on marginal land, afforesting marginal land etc.), from the PNC (for buying stock, renovating gîtes, building new barns, compensation for damage from boar etc.) or from the French Government (e.g. land consolidation).

Is this money well spent? If farming activities stopped in the Souteyran Valley, rough scrubland would soon dominate the landscape. Should the farmers therefore be kept on the land as they currently carry out the role of “landscape managers”?

Task Two: To examine the impact of agriculture on the environment within the Souteyran Valley.

Compile your observations on the positive and negative impacts of farming practices on the environment. Complete the farm recording sheet for each case study.

Consider the following factors:

The PNC wishes to maintain the farmers on the land in order to retain the present level of bio-diversity and landscape diversity. Without the farmers and their grazing animals, the pastureland would disappear along with many of the flowering plants, insects etc. and eventually the area would revert to woodland (already, about 1% of the area of the park disappears each year to woodland regeneration). Would this affect the amenity value (i.e. fewer viewpoints/vistas, no open heathland/moor)?

On the other hand, the farmers do have negative environmental impacts. Although they are organic farmers, they do have an impact on the environment; for example the release of cattle slurry can have adverse effects on freshwater ecosystems unless it is used properly.

Evaluate the impact that farming has on the landscape and decide as a group whether farming has a negative impact on the Souteyran Valley.

Task Three: To debate future scenarios for farming in the Souteyran Valley.

Use the table below to debate whether the continued prosperity of the Souteyran Valley depends on the continued existence of agriculture.

Scenario	Effects On Farming	Effects On Ecosystems
Maintain present state of farming	Land prices stay reasonable; aids to agriculture the same; markets stay the same. Better quality stock. Increase in use of farms. Decline in farm population.	Hay meadows become summer pastures; some land goes into forestry. Some herbaceous grasslands degenerates into birch scrub.
Block on land transactions	No land available for farm expansion; but possibility of renting; eventually leads to decrease in population.	Little change in grasslands; increase in wooded areas, mainly at expense of moorland.
Intensification of agricultural system	Intensification of forage population; all possible land is used for mechanised hay production.	Herbaceous grasslands are expanded at the expense of broom scrub and a little pine forest, but some herbaceous grassland (difficult to "mechanise") reverts to broom scrub.
Development of extensive agricultural system	Based on an increase in demand for meat. Maximum use of summer pastures. Assumes that land will be available for expansion.	Moorland converted to grassland at all levels on Mont Lozère. A possible decline in variety of fauna.
Tourist development and farm diversification	Farms wish to divert some of their time and effort to providing for tourists. Sell direct to tourists, renovate farm buildings for use as gîtes, organise leisure pursuits for tourists.	Decrease in use of hay meadows. Effects somewhere between Scenario 1 and 4.
Abandonment of agricultural system	Could follow on from Scenario 2. Could result from falling farm prices. Decline in rural services.	The area is likely to revert to woodland; decline in faunal varieties because of loss of grasslands and moorlands.

Case Study 1

Andre Moline's Farm in Finiels

Background

The family is one of the oldest in the valley, tracing its history back over 200 years. This long history ensures that the family will do nothing to threaten the farm's survival. Any change will be progressive rather than dramatic. All the family is involved in the farm.

The Farm

The farm has grown in size over the past 15 years. In 1990 it consisted of 113 hectares divided into 126 separate parcels of land, some up to 12 km away.

The farm is now 132 hectares, but more importantly is now in only 50 units. Another 60 hectares is also rented (50 from the PNC that can only be used for grazing). Land on the farm is still being improved, mainly from rough to improved pasture (approximately 1 hectare per annum).

The main product is beef production in the form of a herd of 40 female cows, each of which will have one and occasionally two calves each year, and two bulls. Although this has increased over the year it still falls well below the EU size that is considered economically viable (150 – 200 head of cattle). The breed is the Aubrac, a local breed, hardy and well able to stand the harsh environment, but small and low yielding. The value is around 4 Euro per kilo – the abattoir is in Marvejols.

Many features of 'subsistence' still persist on the farm in spite of increased specialisation. Pigs, chickens, rabbits and milking cows (personal use) are kept, as well as a vegetable garden, raspberry plot and wood-cutting for fuel.

Increased stock size called for a larger barn, which was constructed in 1987. This was financed through grants totalling 50% and a low interest loan. Constructed on traditional lines it has required modernisation due to greater mechanical handling of hay.

The farm has become increasingly mechanised and boasts a full range of farm machinery.

Economics

Production has had to increase as the farm is increasingly 'squeezed' by the widening gap between the costs of inputs and the value of outputs. The Molines have become involved in the PNC's "les boeufs de Paques" (Easter beef) scheme. This sells local cattle through local butchers for a limited period over Easter at a premium price.

Traditionally the market has been for 3 year old cattle, but younger cows (8 to 11 months old) are now being sold to produce a quicker turn over. At one time Italy provided a strong market for cattle in the area but currency fluctuations made this less profitable, so the domestic market is now the most important. A few calves still get sent to Italy for fattening. The creation of the Euro zone in 2002 may again open up the overseas market.

Diversification has been limited, although a Gite was improved under the 'Gites de France' scheme and is on long term rental to 'The Eagles Nest'.

Hay production is a vital aspect of the farm economy. Since the cattle must be indoors for the winter period, hay is stored for feeding through this period. Artificial irrigation is used in a number of fields to ensure that

two cuts can be taken during the summer. However a poor summer or long winter will create the need to buy in hay. Since most other local farmers will be affected then prices will be high. Similarly a good year for hay production is unlikely to reap much reward since prices will be low.

Lifestyle

The lifestyle for the Molines is still much like a traditional farming family, everyone works long days, has few (if any) holidays and for little economic return.

Paperwork has increased considerably especially with regard to health. All cattle must now be 'traceable' and each has a 10 digit code and associated record book (although the Molines still name cattle).

Income is heavily dependant upon subsidies. It is estimated that something like 40% of the farm income comes in the form of subsidies. Grants are still available for capital projects and beef support subsidies are still paid. These come from both the EU and PNC, although EU aid is moving towards 'cultural subsidies' for maintaining traditional ways of life. The PNC gives farmers an intervention payment for stocking the traditional Aubrac cattle.

The Future

Future plans are now based mainly upon improving quality over quantity and thus ensuring continued subsidy payments. Herd size however will probably continue to increase.

Andre's son Daniel is increasingly running the farm which it is felt is giving it a more modern approach. It could be that this was also prompted by the CAP reforms which promoted early-retirement schemes for farmers and assistance for younger farmers.

Daniel sees potential future problems coming from the USA, with moves to reduce support for farmers and from any expansion of the EU into Eastern Europe which will require support and increase competition.

The new barn which began construction in the winter of 2004 is designed along new lines. The cross barn at the far end is for storing hay and some machinery, whilst the mid section is for cattle. There is a central aisle, down which a tractor can be driven to feed the cattle which stay in long byres along each side of the barn. This shift to greater mechanisation may be a reflection of Andre's advancing years, as he has no wish to increase the size of his herd at this stage.

Case Study 2

Jacky Gervais' Farm in Prat Souteyran

Background

Jacky's farm is only in its third generation and so does not have the same traditional ties as others in the area. The farm's future in the family could have finished when an accident in 1986 left Jacky disabled. However since he felt that farming was in his blood then he would continue farming but adapt his farming system to suit his changed circumstances.

The Farm

With only 44 hectares of land available in the Souteyran valley it was necessary to expand to increase productivity. Another 100 hectares of land are now rented although some of this is at Gouduze some 20km away.

With the old style farm buildings unsuitable for his needs new barns and cattle sheds have been built. These are designed for bulk moving of materials especially hay and manure. The cow shed is fitted with a CCTV system so that they can be monitored from home.

Beef is again the farm product but in this case a stock of 33 Charolais females, each of which will have one calf and occasionally two each year, and two Charolais bulls. These produce better quality beef and are higher yielding than the traditional Aubrac. However they are less hardy and therefore require more time in the barn over winter. They also are less able to put on bulk on poor grazing land.

Most of the land has been improved to support the more demanding Charolais cattle.

The farm is heavily mechanised and makes use of the available technology. Jacky was the first farmer in the valley to use large bales (no longer moveable without machinery) and now produces haylage as well as hay. This involves wrapping the grass in plastic, which allows it to be stored with a higher moisture content and retains more nutrients. It can also be stored outside saving valuable barn space.

Economics

Production concentrates on quality and Jacky is dismissive of 'industrial farming'. Cattle are sold at less than 1 year old (veau) and command a premium price of around 8 to 9 Euro per kilo. Cattle are taken to Langogne (1 hour away) rather than Pont de Montvert as it does not possess an organic licence.

A system of 'Vente Direct' is used which involves selling meat directly to the customer. This gives a higher income to Jacky but involves more work. Customers are distributed regionally and nationally and are interested in a high quality product (such as restaurants).

Jacky used to market his product as 'organic', but had to pay almost 1500 Euros per annum for a licence. Since some other countries allow free registration and have less strict legislation, he felt this was reducing his competitiveness. Once his reputation was established he felt that "Veau de Mont Lozere" with its association with the National Park was a stronger selling point.

The farm incurs far higher production costs than others in the area. Also the numerous changes necessary had to be financed partially through loans from the bank for which the farm was put up as security. This put

his farm at risk for if it had not been a success (a policy which the Molines would never risk) all would be lost. However by 2006 most of the loans will be repaid and the farm will again be Jacky's.

The farm still receives subsidies although at a lower level than others in the area. These are estimated at around 20% of the income.

The farm has concentrated on specialisation and made little attempt (or seen the need) to diversify. A gite is rented to a local teacher and Cindy (Jacky's daughter) breeds horses to help support her at university.

Lifestyle

The Gervais family lives in a purpose built modern house and with a partner to look after the business are able to take annual holidays. Jacky's daughter Cindy is currently away at university studying to be a vet.

The Future

After taking a high risk in getting the farm profitable Jacky's future seems as secure as any can be in a marginal farming area. However any expansion would be difficult and as costs of inputs continue to rise the farm could be squeezed.

Although involved in working on the farm during the holidays, Cindy sees her future as a vet and may not wish to take over the farm in the future.

The PNC is increasingly seeing farmers as landscape managers and would probably be happy to support them as such. However most farmers prefer to be independent and Jacky's approach to farming is in some ways incompatible with the aims of the Park.

Appendix 1: Notes on Farm Visit

As you go round the farms, you will hear a great deal of information. Use the guidelines below to aid your note taking.

Background Information
Limitations of the Physical Environment
Effects on Biodiversity / Environment
Advantages / Disadvantages of Extensive (and Organic) Farming Methods
Other Information

Questions for local Farmers

Rather than ask all these questions it is suggested that a particular area is concentrated on or a number taken from each section.

Background

Why do you farm in the Souteyran Valley?

Pourquoi êtes – vous agriculteur dans la Vallée du Souteyran?

What problems are presented by farming in this area?

Quels sont les problèmes que vous recontez dans cette région?

Would you consider doing anything else other than farming?

Pourriez-vous faire autre chose que l'agriculture?

What are the best and worst things about farming here?

Quels sont les avantages et les inconvénients de l'agriculture dans cette région?

What is your main goal in farming?

Quel est votre but dans l'agriculture?

Changes in Farming

What changes have you seen in farming here over the last 10 years?

Quels changements avez-vous remarqués dans l'agriculture pendant ces dix dernières années?

Do you think the creation of the National Park in 1970 was good or bad for farming and why?

Croyez-vous que la création du Parc National en 1970 a été eu effet positif ou négatif pour l'agriculture et pourquoi?

What sort of support do you get from the EU? Has this changed in the last 10 years?

Recevez- vous des aides financier de l'Union Européene? Ce soutien a-t-il changé pendant ces dix derniers années?

What changes have you made to the farm while you have been here?

Quels changements avez-vous fait à la ferme depuis votre installation?

Should farmers get subsidies from the EU or government?

Préférez-vous recevoir des aides financières de l'Union Européenne ou du gouvernement?

Is your farm good for the environment in the valley?

Qu'avez vous fait pour que votre ferme s'intègre dans l'environnement de la vallée?

Has the increased tourism in the area had any effect?

Le développement du tourisme dans la région a-t-il eu des effets sur l'agriculture?

To what extent do farmers co-operate in the valley?

Quels sont les points communs des agriculteurs dans la vallée?

How has machinery changed your farm in the last 20 years?

Quelle a été l'importance de la mécanisation dans votre ferme pendant les vingt dernières années?

Many farmers complain that costs are rising but the value of their products does not. Is this the case with you and what examples could you give?

Beaucoup d'agriculteurs se plaignent que les coûts de l'agriculture augmentent tandis que la valeur de leur produits reste stable. C'est le cas chez vous? Quels exemples pouvez- vous donner?

The Future

How do you see your farm changing in the next 10 years?

Quelles sont vos perspectives pendant les dix prochaines années?

Is there a future for farming in the Souteyran valley?

Existe t - il un avenir pour l'agriculture dans la Vallée du Souteyran?

What threats do you see for farming in the future?

Quels peuvent être les menaces pour l'agriculture dans l'avenir?

Would you consider giving up farming and simply being paid to manage the land?

Pourriez-vous laisser tomber l'élevage des vaches pour vous occuper que de vos terres?

Have you carried out a Contrat Territorial d' Environment (CTE) and what do you think about it?

Avez vous passé un Contrat Territorial d'Environnement (CTE) et qu'en pensez vous?

Have you any plans to change your farm, e.g. expand, diversify, new products?

Avez-vous des projets de changer votre ferme, par exemple développer, diversifier, nouveaux produits?