

Rural Renovation in *les Landes*, South West France : A French Regional Development Experiment

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[See table of contents](#)

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Article abstract

Regional planning is an important item of government policy in France, and the rural land management of the *Landes* in the Aquitaine region offers a good example. The factors which instigated this planning operation were the constant rate of decrease in the areas under forest and of agricultural land, the decline in economic activity in an area where the natural environment is not very favourable and the exodus of the population. Numerous measures have been taken to improve the level of the economy in this region. In 1965, la Compagnie d'aménagement des Landes de Gascogne was established; its main objective is to protect the forest from destruction by creating enclaves of subsistence agriculture, which serve as fire breaks and at the same time reactivate the economy. La Compagnie d'aménagement des Landes de Gascogne aims there fore at stabilizing the region once again by setting up new activities. The arable land has been re-divided and transport, drainage and irrigation equipment, capable of attracting labour, is being installed.

The planning organization has partially attained the goals that were set. The area of forest devastated by fire has been reduced more and more, and agricultural returns are higher. On a long term basis, the application of this plan of land management in the rural areas of Aquitaine is proving a success.

RURAL RENOVATION IN *LES LANDES*, SOUTH WEST FRANCE : A FRENCH REGIONAL DEVELOPMENT EXPERIMENT ¹

by

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The relative success of post-war planning in France has attracted interest from scholars and governments in countries which have experienced less favourable planning results or which are just beginning to plan on a regional basis. Several recent publications indicate the comprehensive nature of the structure of French planning, particularly the strong emphasis on regional development as part of overall national planning.²

The scope of this paper is restricted to a discussion of a specific regional development project, crucial to the successful planning of Aquitaine. The major aim of the project is the physical protection of the extensive forest of Les Landes from fire, by creating large agricultural clearings which can act as fire-breaks. Two secondary aims are the diversification of a rural economy based on the monoculture of the maritime pine and the reversal of rural depopulation.

It is little known that Aquitaine, after Italy's Mezzogiorno, is the second major underdeveloped region in the European Economic Community.³ The returns to the region from the post-war discovery of petroleum at Parentis and natural gas at Lacq have been disappointing and have not overcome the regions' disadvantages of a *cul-de-sac* location in Europe and poor land resources. The forest of Les Landes covering 70% of an area half the size of Belgium, is the main resource of the region and has been the cause of much economic depression. Yet it is at the same time the resource upon which hopes for regional redevelopment are now based, especially for the production of pulp, corn and veal, and in tourism. All these activities require that the forest not be ravaged by fires as it has been in the past.

¹ Appreciation is expressed by the author to the British Council for granting an award under the Younger Research Workers Foreign University Interchange Scheme to spend 10 days in Bordeaux during April, 1962, and to the University of Alberta for a research grant to carry out work in the summer of 1966 in S. W. France, to the members of the Department of Geography at the University of Bordeaux and particularly to the C. A. L. G.

² An excellent recent book is HANSEN, N. M., *French Regional Planning*, Indiana University Press, 1968. Other major works are BOUDEVILLE, J., *Problems of Regional Economic Planning*, Edinburgh University Press, 1966; HACKETT, J., and A. M., *Economic Planning in France*, Cambridge, Harvard University Press, 1963; GRAVIER, J.-F., *L'aménagement du territoire et l'avenir des régions françaises*, Paris, Flammarion, 1964.

³ BARZANTI, S., *The Underdeveloped Areas Within the Common Market*, Princeton, p. 292.

The programme to clear the timber and create new farms is being directed by La Compagnie d'aménagement des landes de Gascogne (the C. A. L. G.) which was created as a *Société d'économie mixte* by a decree of August 3rd, 1965.⁴ There are eight major regional development projects in France, each managed by one of these semi-public organisations.⁵ Based on joint-stock companies which were created by a law of 1867, the *sociétés* are financed by private and public bodies including local *départements*, *communes*, Chambers of Agriculture, of Commerce, and Agricultural Credit Banks. Individuals can also buy shares. The main financing is however by the State, especially from the *Caisse des Dépôts et Consignations*, the major public credit bank in France. With a division of shares allotting 51% to the public sector, the *Société* has the outward flexibility of a private company yet has public financial guarantees as well as overall supervision. A major advantage of the *Société* is local financial investment and representation, thus securing a vested interest in the successful operation of the *Société*. They also function as organisations which cut across the numerous local and regional government departments and therefore can operate effectively from an administrative viewpoint on specific projects.⁶

The terms of reference of the C. A. L. G. are:

« La Compagnie a pour objet la réalisation d'opérations d'aménagement dans la région des Landes de Gascogne en vue de concourir à sa mise en valeur dans les domaines agricole et forestier; elle pourra également réaliser ou promouvoir toutes autres opérations en liaison avec cet objet tendant à la mise en valeur rationnelle de cette région. »⁷

The scope of the C. A. L. G.'s activities is therefore wide and includes tourism, a major economic activity not mentioned above, which the C. A. L. G. plans to develop. The main focus of its attention has been, until the present, the establishment of new farms on land cleared of forest. The aim of protecting the forest indirectly by barriers of agricultural land, to prevent fires sweeping unchecked for many kilometers, is a prerequisite for further regional development. Apart from the unique purpose of the new agricultural areas, this is one of the few post-war examples in Europe, with the exception of Finnish resettlement programmes for Karelian farmers and the use of war-scarred forestland in some areas like the Ardennes, where forest is being cleared for farms. Since the 1930's the reverse

⁴ See Statutes of *La Compagnie d'aménagement des landes de Gascogne*, for its Constitution. Available from the C. A. L. G., 2, place de la Bourse, Bordeaux. A number of unpublished and published references in French exist. See HIRIGOYEN, D., *La Compagnie d'aménagement des landes de Gascogne*, thesis for doctorate of Law, Paris, December, 1958; GRANGE, G., *La Compagnie d'aménagement des landes de Gascogne et les problèmes des landes de Gascogne*, étude pour le diplôme d'ingénieur des techniques agricoles, May, 1967. This is an excellent thesis including an analysis of the C. A. L. G. accounting estimates for the finances of the project; QUANCARD, C., *L'Aménagement des landes de Gascogne*, in *Génie rural*, No. 12, December, 1963, Pub. Horizons de France, Paris. The C. A. L. G. has published several booklets, pamphlets about its work.

⁵ See special issue of *Génie rural*, December, 1963, *Sociétés d'économie mixte* were established in France by legislation in February, 1955, during the Second National Plan.

⁶ See HANSEN, N. M., *op. cit.*, p. 80 for a discussion of regional administrative reform.

⁷ *Statuts de La Compagnie d'aménagement des landes de Gascogne*, Article 2.



Photo 1 New Farms in the Sector of Sabres-Morcenx. Source: C. A. L. G.

process has occurred with afforestation of agricultural land, principally poor grazing land, from the Scottish Cairngorms to the Spanish Meseta.

The Historical Perspective of the Rural Development of les Landes

It is ironic that past attempts to improve the land resources have created conditions which require the present renovation programme. *Les Landes*, literally a term to describe waste lands, have been created by a combination of physical factors and man-induced changes. With an average slope of 3° and an elevation over large areas not exceeding 50 metres except on the interfluves, the natural drainage pattern is poorly integrated. There is a mixture of soil types but those derived from sands of upper tertiary origin dominate and are underlain by marine clays. A major adverse feature for vegetational cover and drainage is a hardpan or *alios* which is extensive, ranging in thickness from 20 centimeters to 1,20 metres and at a depth of 30 to 40 centimetres below the surface.⁸ Above this ferruginous or humic

⁸ QUANCARD, C., *op. cit.*, a more detailed discussion of physical features is found in GRANGÉ, *op. cit.*, p. 4, and for the region in BARRÈRE, P., HEISCH, R., LERAT, S., *La Région du Sud-Ouest*, ARQUÉ, P., *Géographie du Midi aquitain*, Paris, Rieder, 1939. For further reference there is a useful bibliography by PENOUIL, M., *Bibliographie économique régionale du Sud-Ouest*, Éditions Bière, Bordeaux, 1960.

hardpan, leached horizons may be found. The hardpan produces poor drainage conditions in winter and inadequate capillary action in summer. Thus too wet and too dry conditions coupled with acidic soils, poor in organic matter and minerals, present severe problems for agriculture. Where the hardpan is not well developed, very dry conditions exist as precipitation is quickly absorbed by the permeable sandy soils. In places below the hardpan, the sands act as aquifers.

It is in this environment of maritime pine trees, heath vegetation and indeterminate drainage that the C. A. L. G. has delimited an area on a hydrographic basis which it calls *les Landes humides* (Figure 1). The boundary encloses the area of worst natural drainage, especially on the interfluvies between the stream systems. It is calculated that artificial drainage and agricultural development will have the best result in *les Landes humides*. More important, it has been in this largely inaccessible area of forest and marsh that the major forest fires of the past have been located.⁹

The forest of *les Landes* is an excellent example of ecological irresponsibility by man. By the end of the 18th century the natural woodland of oak and especially maritime pine, had been devastated by overcutting, burning, overgrazing and wars.¹⁰ An extensive sheep grazing economy with a « garden » agriculture developed. Large scale clearance of the forest cover however allowed steady encroachment inland for some 1 200 years by coastal sand dunes. They restricted drainage and caused lagoons to form. It was to stabilise the sands that the first attempts to reestablish the forest were made as early as 1752. At first it was a private battle but by 1786 public financing of reseedling and replanting of pine was guided by Brémontier, l'Ingénieur des Ponts et Chaussées. By 1808 Commissions for coastal dunes and *les Landes* had been established. By 1786 rapid planting had stopped the dunes advancing. But there remained the problem of *les Landes* where many inland dunes had appeared. The pine slowly returned to the valley of the Eyre and the low *Landes* plateau. By the law of 1857 passed by Napoléon III a major public effort began to expand the forest and at the same time to drain and promote agriculture and resin production from the maritime pine. Each commune under the new law had to drain the land and plant pines. The major objective of the law was to reduce rural migration, a theme found today in the same *départements*. The forest advanced rapidly, its extension also being encouraged by the War of American Independence which prevented resin imports from America and increased the price of domestic resin four-fold. By the 1870's it was apparent from the forest fires that further expansion of the forest was undesirable as it was becoming unmanageable. State involvement ended in 1875 but private owners continued to plant pines until 1939

⁹ Pers. Comm. with R. Rouquie, Agricultural Economist in charge of research, C. A. L. G. See also HIRIGOYEN, *op. cit.* p. 73.

¹⁰ GRANGÉ, *op. cit.*, p. 17. Discussion of historical development of *Les Landes de Gascogne*. Other publications on the economic problems of *les Landes* include PAPY, L., *Les Problèmes de la restauration de la forêt landaise*, in *Cahiers d'outre-Mer*, July, 1950, Bordeaux; SILORET, G., *Conditions de la remise en valeur des Landes de Gascogne*, in *Ann. Fac. de droit*, Bordeaux, 1954; ARQUÉ, P., *Grandeur et décadence de la forêt landaise* in *Revue géographique des Pyrénées et du Sud-Ouest*, 1952, p. 148; RENAUD, M., *L'Évolution actuelle de l'agriculture landaise*, in *Revue jurid. et écon. du Sud-Ouest*, 1956, No. 1, L. Papy, édit.; *Études d'Économie landaise*, Vol. 1, *Problèmes de la forêt landaise*, Éditions Bière, Bordeaux, 1960; see also PENOUIL, *op. cit.*

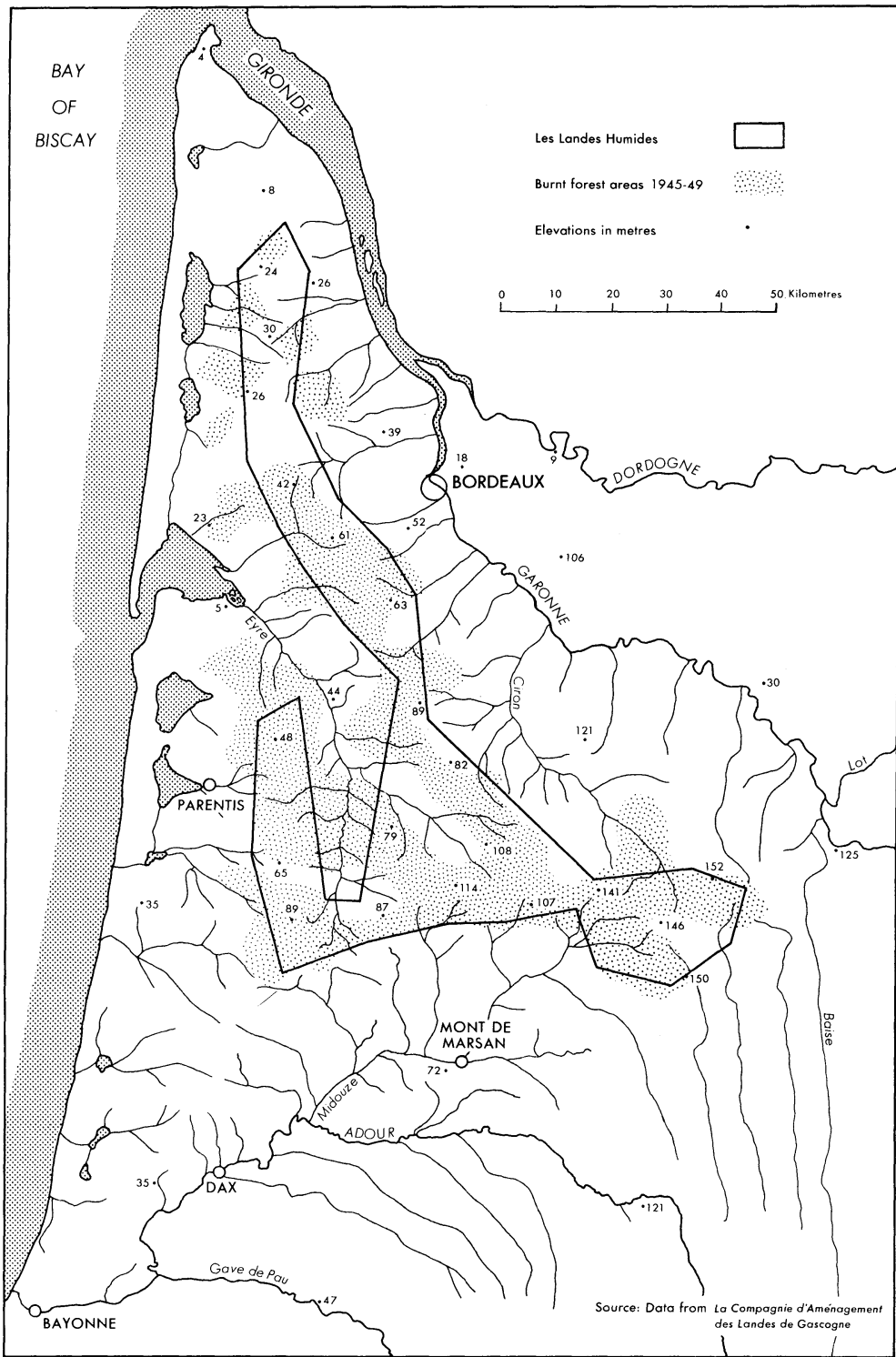


Figure 1 Les Landes humides.

Source: Data from La Compagnie d'Aménagement des Landes de Gascogne
 Department of Geography, University of Alberta

when the forest reached a maximum extent of 1 million hectares in the three *départements* of Gironde, Lande and Lot-et-Garonne. The former agro-sylvo-pastoral economy¹¹ had been transformed into a forest-dominated one with resin collection and timber products such as pit props, telegraph poles, and sawn wood being major staples.

While efforts were being made to re-establish the maritime pine, there were substantial attempts to undertake a scientific agriculture. They involved the use of Moors expelled from Spain, convicts and much later by Napoléon III, experimental farms such as the *Domaine impérial de Solférino* in 1858. Sylviculture and intensive stock raising were also practiced. Rice, tobacco, mulberry trees, peanuts, cotton, potatoes and corn were all cultivated. Few of the crops were successful while the farms had little effect on the traditional garden plot agriculture of rye and millet. Poor yields because of soil quality, the lack of fallowing and fertilisation as the sheep population declined, led to the abandonment of much cultivated land in favour of the resinous pine.

By 1939 the monoculture of the pine was the major source of rural livelihood. The economic consequences of this situation were not apparent until major forest fires devastated large tracts of timber between 1936 and 1949.¹² Fires were documented before 1936 but they were insignificant to those which destroyed approximately 566 000 hectares of forest between 1943 and 1949. In the latter year, locally called *l'année rouge*, 130 800 hectares were lost and 82 fire fighters died.

The dimensions of the problem of fire control are thus evident. The 19th and early 20th century afforestation was rapid with little systematic planning for the forest. Access routes and fire-breaks were not provided sufficiently even under the 1857 law. The subsequent mismanagement of the forest with little thinning practiced contributed to the rampant fires. It was above all else the continuous nature of the forest coverage in many communes being over 95% of the area, and the low population densities often under 10 persons per square kilometre, which made the defense of the forest so difficult.

The Renovation Programme

Although an Act of 1945¹³ caused the construction of access roads, watch towers, the formation of fire-fighting teams, drainage and rural electrification, these measures were proved inadequate by the 1949 fire for example cited above. State aid was given to replant burned-over land, also from 1950 to develop agriculture in the same areas, mainly at Labouheyre, Solférino and Morcenx. But it was the creation of the *Compagnie d'Aménagement des Landes de Gascogne* in 1956 which produced the most sophisticated plan of forest protection and rural revival. A solution lay in the systematic establishment of new farms on cleared forest lands. The advantages would be: the creation of large fire breaks more efficient than the usual

¹¹ It has been estimated that by 1850, 1 million sheep were in *les Landes* compared with 160 000 in 1920. GRANGÉ, *op. cit.*, p. 23.

¹² Discussions of the fires can be found in the following publications: PAPPY, L., *op. cit.*, QUANCARD, C., *op. cit.*; GRANGÉ, G., *op. cit.*, p. 34.

¹³ L'ordonnance, 28th April, 1945.

16-metre wide lane; the areas would be income producing and self-sustaining; the introduction of farms would increase the rural population and thus more persons would be available for fire defense; the rural economy would be diversified by a modern agriculture and thus greater insurance against the increasing economic depression, especially in the resin industry, would be obtained. Another advantage of the plan not foreseen at its outset was the provision of farms for *colons* from North Africa, especially from 1959 to 1962. At the time it was politically expedient to try to provide land for them within the existing regional development programmes.

There are three ways in which the C.A.L.G. can improve the land for agriculture and gain the above goals. They comprise three types of contract between the C.A.L.G. and the farmer.¹⁴

1. The C.A.L.G. buys fallow land, removes the timber, drains and divides the land into regular lots. A farmer can buy the land when it is ready for farming and pay for it over 33 years. Various obligations of farm management and finance are stipulated by the C.A.L.G. and payments for the land are linked to prevailing market prices of products.

2. The C.A.L.G. can take a long term lease on fallow land when the owner does not wish to sell, and improve it. The lease is then turned over to a farmer who makes a contract to continue the rent payments. Similar conditions of working the land and for payments are made.

3. The C.A.L.G. can assist an owner who does not wish to sell or lease land by entering into a contract with the owner to improve the land for agriculture as well as its timber value.

This last contract involves work similar to work of a Société d'aménagement foncier et d'établissement rural.¹⁵ In fact from January, 1963, the C.A.L.G. agreed to act as a S.A.F.E.R. in the department of Landes.

By 1968 the C.A.L.G. had acquired 13 500 hectares within *les Landes bumides*, in the coastal lagoon area and in the area of Chalosse by the river Adour in the South.¹⁶

Areas were selected on the basis of soil analysis, water table studies in relation to drainage and irrigation potential, the local economy on a communal basis and the availability of land for improvement. The timber is cleared and the land prepared for farming by private contractors. Stumping, burning of windrows, ditching and deep ploughing to break up the hardpan are undertaken. A cover crop of oats, millet or rye grass is planted for two years and ploughed under. The land is divided then into lots of 40 to 80 hectares for family farms (Photo 1). The farm size is consi-

¹⁴ *La Compagnie d'aménagement des Landes de Gascogne : ses objectifs, ses modes d'intervention* ; C.A.L.G., February, 1961. Also GRANGÉ, *op. cit.*, p. 95.

¹⁵ S.A.F.E.R.'s were established by the Loi d'orientation agricole of 1960. See CLOUT, H. D., *Planned and Unplanned Changes in French Farm Structures*, in *Geography*, Vol. 53, July, 1968.

¹⁶ Pers. Comm. C.A.L.G. September, 1968. This total is lower than previous figures published but is more accurate. In 1963, C. Quancard, Chief Agricultural Economist of the Génie rural, mentions 15 380 hectares. The first stage of the project will end in 1970 with 15 000 hectares in new farms. There is a potential area of over 50 000 hectares which could be farmed.

LA DOMAINE DU MERLE, BARP COMMUNE
Cestas Sector of C.A.L.G.

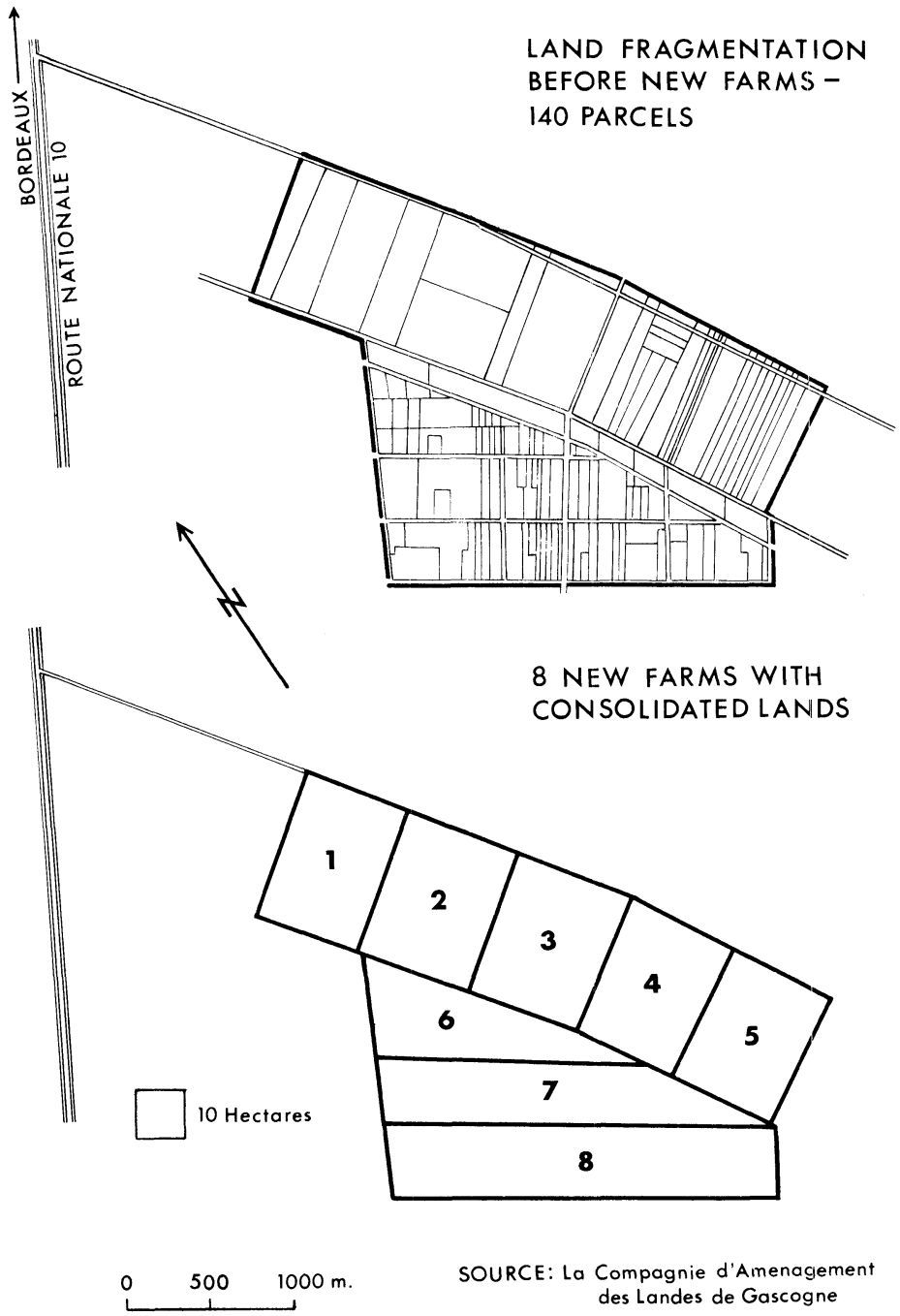


Figure 2 Land fragmentation of traditional property units and consolidation in new farms.

SOURCE: La Compagnie d'Aménagement
des Landes de Gascogne

derably larger than the holdings of traditional farmers (resin collectors) whose cultivated acreage rarely exceeds 10 hectares.¹⁷ Moreover they are compact land holdings without the fragmentation of the peasant farm (Figure 2). In addition to the preparation of the land, farm houses, barns, utilities and irrigation systems are installed. The physical planning of the farm layout is efficient with easy access to farmsteads located along a road, paralleling usually a main drainage and irrigation ditch. Regularly shaped fields, tending to be linear on many farms, and ease of mechanised cultivation indicate close attention by the agricultural economist to the problem of overcoming the costs of distance in farming. The social advantages of farmstead proximity have not been forgotten, as some of the areas are relatively isolated. In addition, the farm management plan can be determined now by the use of linear programming techniques to obtain optimum results.

By 1968 there were 141 new farms in 8 sectors, mainly in Gironde and Landes¹⁸ (Figure 3). Some 10 500 hectares were in cultivation, 2 000 were being prepared and 1 000 awaiting amalgamation of parcels before being developed for agriculture. Over 100 farmers were being assisted under Contract 3. 70% of the new farmers decided to buy the land under Contract 1 and 30% to lease it. Applicants are screened with respect to previous agricultural qualifications, especially education, or modern farming experience. They are also required to have sufficient working capital for machinery, stock, seed or to obtain credit. Although priority was given to local *Landais*, there were few applicants at the beginning of the project because of scepticism of its success.¹⁹ It was fortuitous that *colons* from North Africa were seeking land in France soon after the project began, for 81 out of the 141 farmers are from former French overseas territories — mainly Tunisia and Morocco. Thirty-two are local in origin and 28 came from other parts of France. Demand for the new farms was high. Between 1958 and 1963, 1 250 applications were made. However, at a rate of completion of 20 to 30 new farms each year, settlement is slow. Figure 4 shows in more detail the areas of new farm land in the sector, Cestas-le-Barp. The farmer's origin and year of establishment in the new farm can vary substantially by sectors and even within them. The irregular shapes of the blocks of new farmland and those awaiting completion of preparatory work to the north-west, can be seen.

The Success of the Project

The validity of agricultural development as an indirect means to protect the forest as well as the practical success of the project have been criticised severely.²⁰

¹⁷ HIRIGOYEN, D., *op. cit.*, p. 44. Also the Institut national de la statistique et des Études économiques, Bordeaux: *An Agricultural, Economic and Social Study of Selected Communes*, C. A. L. G., 1960.

¹⁸ Pers. Comm. C. A. L. G. September, 1968. Number of farms by sector: Médoc 14, Cestas-le-Barp 33, Saint-Symphorien 11, Captieux 10, Gabarret 33, Casteljalous 9, Sabres-Morcenx 29, Mont-de-Marsan 2.

¹⁹ For similar findings see THOMPSON, I. B., *Some Problems of Regional Planning in Predominantly Rural Environments: the French Experience in Corsica*, in *Scottish Geographical Magazine*, 82, No. 2, September, 1966.

²⁰ Much adverse criticism appeared in the regional press. As a result the C. A. L. G. has a substantial publicity programme. For an extended interview with M. A. Leca, Director-General of the C. A. L. G., see *Sud-Ouest*, 26 April, 1962, Bordeaux.

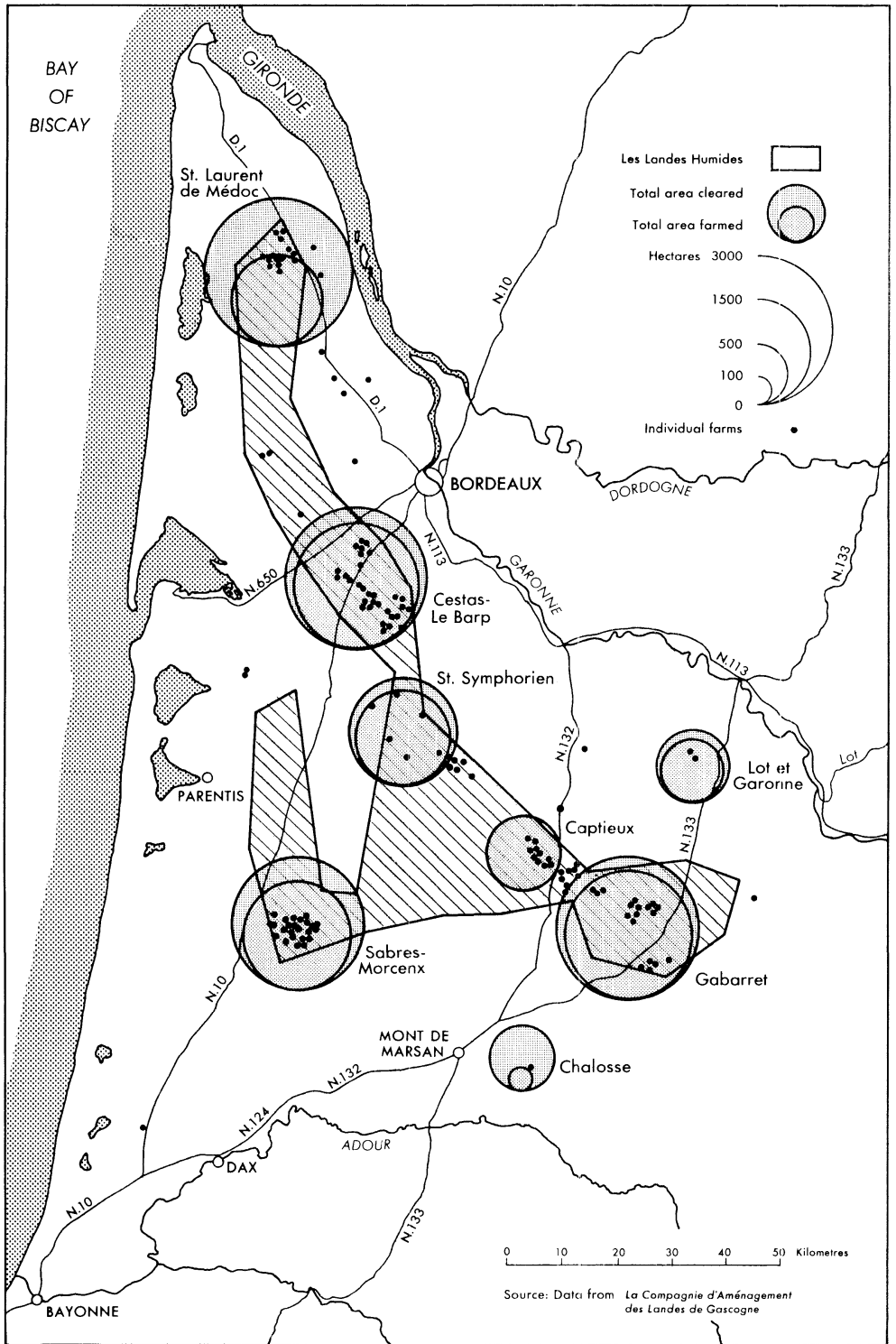
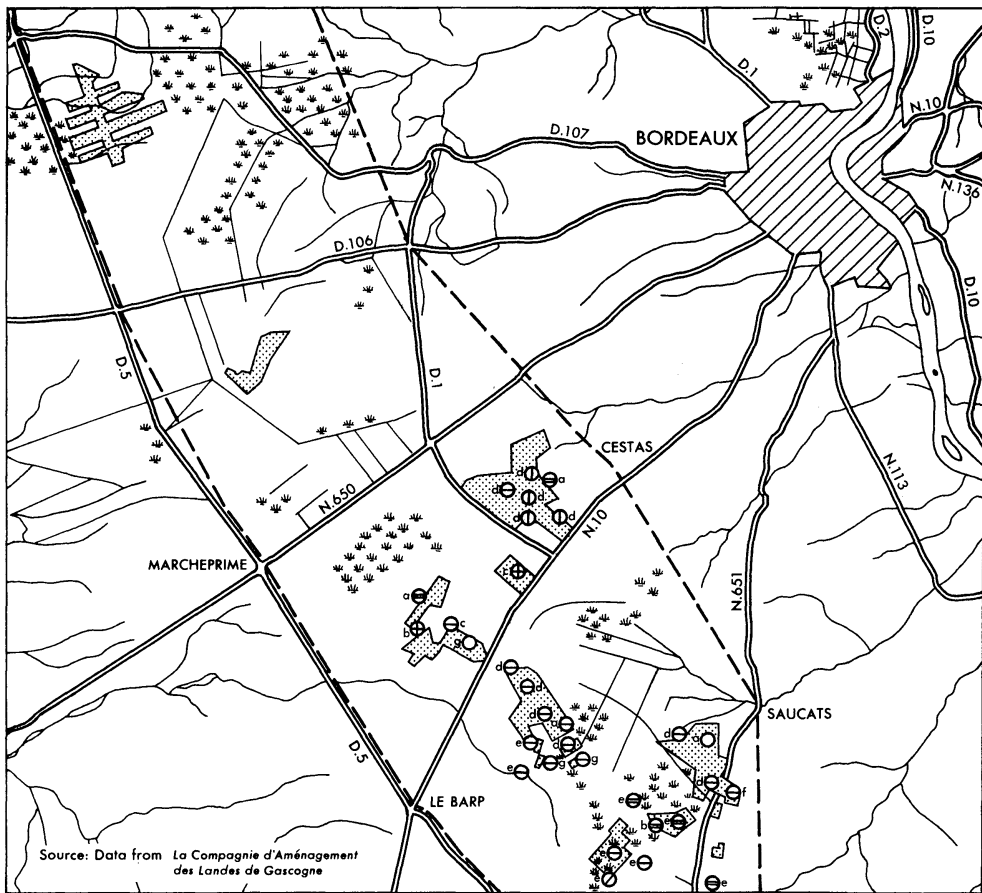
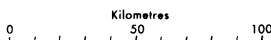


Figure 3 New Agricultural Sectors and Farm Location.



Source: Data from La Compagnie d'Aménagement des Landes de Gascogne

Department of Geography, University of Alberta



- Perimeter of Les Landes Humides -----
- New farm lands -----
- Marsh -----

Origin of new farmer:—	Year of establishment:—
Morocco ----- ⊖	1959 ----- a
Tunisia ----- ⊕	1960 ----- b
Landes de Gascogne ----- ○	1961 ----- c
Paris ----- ⊖	1962 ----- d
Others from overseas ----- ⊕	1963 ----- e
	1964 ----- f
Experimental farm ----- ⊗	1965 ----- g

Figure 4 New Farm Settlement in the Sector of Cestas — Le Barp.

One of the main objections is that the project is not required. A well-managed forest can provide adequate defense against fire as with modern equipment, fire spotting and quick response is possible. Access routes and fire breaks of 16 to 50 metres have been provided especially in areas burned in the 1940's and since reforested. It is also claimed that a modern forest economy based on pulp production and sawn wood will raise rural population densities to levels where fire defense teams of communes are stronger.

The concept of agricultural fire-breaks has been tested by a fire which was halted by one at Morcenx but has not yet been proved effective on a larger scale. Areas which are from one to five kilometres in width are however more substantial barriers to fire than the customary fire lane. With the aid of strong winds, especially in March and August, fires have travelled for 30 to 40 kilometres in one day. The agricultural clearings offer physical and psychological guarantees that past disasters will not be repeated. The future existence of the forest is basic to all rural development in the region and the costs of protecting it by these measures are small compared with the economic damage to the region if it was again destroyed.

Underlying much of the argument against the project is concern with the investment required. The long term view, as is often the case, is distorted by that of the short term. The rate of land development is slow and expensive. To create one lot takes two years. The cost of a 100 hectare unit requires an investment by the C. A. L. G. of 810 000 F. (\$180 000) of which 135 000 F. are to acquire the land, 585 000 F. for preparatory work before farming and 90 000 F. for financial costs to the C. A. L. G. on money borrowed.²¹ The farmer has to invest approximately 350 000 F. for a farm of 100 hectares without stock, or 490 000 F. with stock. The C. A. L. G. has estimated (1960) that the farmer has to have at least 1 200 F. per hectare for capital equipment and 1 000 F. per hectare for current expenses. Costs have been increased by land prices rising (partially caused by the C. A. L. G. itself), from an average of 460 F. per hectare in 1958 to 1 200 F. in 1966. From 1958 to 1965 some 76 million francs had been invested by the C. A. L. G. in the project which is about 6,5% of French regional investment in major projects.²² It is argued by opponents to the programme that such investment would bring higher returns in manufacturing industries, especially in forest products. Yet the returns have to be measured not only against the major one of forest protection but also in personal farm incomes and the multiplier effects of the new investment in the regional economy. Private heavy machinery contractors have benefited and also those employed in local service trades. The C. A. L. G. itself provides over 100 professional posts. It has been found that the returns in yield and income to new farmers are much higher than those received by traditional farmers (see Table 1).

The income from irrigated farms of 45 hectares was 15 000 F. in 1968, 30 000 F. from 70 hectares and 45 000 F. from 100 hectares.²³ Annual mortgage or rental payments of between 150 F. and 200 F. per hectare represent proportions of nearly half the annual income, yet in normal conditions of farming are within the farmer's ability to pay. It might also be mentioned that the financial burden was carefully outlined to each farmer before he signed a contract. But what is planned and what actually occurs can be two different things — the C. A. L. G. stipulated that farmers grow only corn for two years and 70% in the third and fourth years when other crops and stock were to be introduced. In retrospect this was risky as

²¹ Pers. Comm. C. A. L. G. September, 1968. See also QUANCARD, C., *op. cit.*, and GRANGÉ, *op. cit.*, p. 103-112 for a detailed discussion of the cost and estimated returns of the farms. Conversion to the Canadian dollar is at the current rate (May, 1968) of 21,75 cents per franc or approximately 4,5 francs to the dollar.

²² GRANGÉ, G., *op. cit.*, p. 74.

²³ Pers. Comm., September, 1968, C. A. L. G.

Table 1 *Returns in yield and income to new farmers.*

<i>Crop</i>	<i>C. A. L. G. Farm</i>		<i>Traditional Farm</i>	
	<i>Income (Francs)</i>	<i>Yield per Hectare</i>	<i>Income (Francs)</i>	<i>Yield per Hectare</i>
Irrigated Maize	2 500	60/90 Quintals	1 200	30 Quintals
Cereals (based on barley)	1 600	40 Quintals	1 000	30 Quintals
Rape	2 400	30 Quintals	—	—
Oats	—	30 Quintals	—	20 Quintals
Early Potatoes	6 000	30 Tons	—	—
Asparagus	8 000	4 Tons	6 500	3,5 Tons

Source: Pers. Comm., September, 1968, with C. A. L. G.

little long term experimentation with corn had been made by the C. A. L. G. on its experimental farms. Unfortunate climatic circumstances contributed to a poor harvest in 1959 because of excessive rainfall, and crop failures in 1961, 1962 and 1964, because of drought. If irrigation systems had been installed on all farms the disasters would have been much less. Today, with the advantage of hindsight, 90% of the farms are irrigated. Individual farmers have also experienced problems from incomplete deep ploughing, poor drainage work, green crop fertilization and, some say, technical advice from the C. A. L. G. Their incomes have declined and they find it difficult, in some cases impossible, to meet their financial commitments.²⁴ The result is that thirty-two farmers are now suing the C. A. L. G. for misleading them on the agricultural potential of the land and for the incomplete drainage during preparatory work. They are seeking either a reduction in the price of the farms or a cancellation of their contract with compensatory damages for capital loss.

Field work was carried out in 1966 to interview farmers under different contracts and with different degrees of success in farm operation. Traditional farmers were also included for comparison. The following selected cases give an indication of their operations.

An example of a Successful New Farm [Contract 1]. — The farmer is 43 years of age and in the fourth year on his new farm. He came from Algeria, employs two men and a son helps him. He is satisfied with C. A. L. G. policy and his income. His farm is 80 hectares, about $\frac{1}{3}$ pasture, $\frac{1}{3}$ cereal (oats and barley), $\frac{1}{2}$ corn. Potatoes cover 6 hectares. There are 50 limousin cows for veal production from 10/11 month old calves. Three tractors, a corn harvester, potato picker and two cars (Citroens) comprise his mechanical equipment. The corn is irrigated and yields over 40 quintals per hectare. His only comments indicating problems were that drainage was poor and not originally satisfactorily carried out and the fertiliser input (potassium

²⁴ Some farmers could not continue payments on their loans or mortgages. Short term (5 years) loans at too high rates of interest, from the Caisse de crédit agricole, should not have been obtained by the farmers engaged in such risky agriculture. The C. A. L. G. had to guarantee reimbursement of the Caisse when some farmers stopped repayment. Pers. Interview with M. Aymar Achille-Fould, député de la Gironde and Mayor of Saint-Laurent, June, 1966.

phosphate) had to be large — 180 kilos per hectare for corn and 130 for pasture, and thus expensive.

An example of an Unsuccessful Farm [Contract 1]. — At the opposite extreme was a farmer of 41 years with training from an agricultural college in Tunis. Keen to farm, he liked the ease of entry into farming via easy credit terms. He found he had a debt of 20 000 F. A tractor, car and other equipment were used. Criticism was directed to inadequate soil survey, drainage, high cost of fertiliser (500 F. per hectare) compared with corn yielding 40 quintals and returning 1 600 F. He was cultivating 30 of his 70 hectares (20 in corn, 10 in sunflowers). He is planning to leave the farm and work in Africa as a Technical Agricultural Adviser. This will mean breaking his contract with the C. A. L. G.

An example of a Farm under Contract 2. — Farmer pays rent in this case. He is 50 and came from Morocco. Not satisfied with income although he has farmed for five years. At first 100 hectares cultivated and obtained loans for working capital for first two years. Then he financed himself in succeeding years but is only cultivating 50 hectares now. He has pasture, pigs and corn. The rent is too high in his opinion for the quality of the soil, poor drainage and standing water on his farm. An inadequate soil survey was made because a 20 cm. thick impermeable hardpan exists. A car, tractor and other equipment were present.

An example of a Traditional Farmer with Contract 3. — He is a neighbour of some of the new farms in the Saint-Laurent sector. He is 47 years old and formerly in insurance in Bordeaux. He came to his farm on marriage. He employs one permanent worker. It is a large holding of 240 hectares, 45 of which are cultivated (20 corn, 10 oats, 1 vines, 15 pasture), 40 in pines, 20 in oak and the rest waste. A tractor, seeder and corn picker were used although the latter was shared with one of the new farmers. Fifteen friesians, pigs and poultry are kept. He needs a better electricity supply for irrigation and drainage pumps and plans to increase pasture and milk cows on the advice of the C. A. L. G.

An example of a Traditional Farmer/Forest Owner. — Locally born and a farmer for 28 years. He has 95 hectares including 1 hectare of pasture for a horse, 2 of corn for chickens and pigs and 93 in forest. Eighteen hectares of pines producing resin are included. The horse is used as it is cheap and efficient in hauling out timber cut and sold to sawmills and pulp mill. No one employed. 3 500 litres of resin are produced per annum and 2 cubic metres of timber per hectare per annum. He is building a new house alongside the old one which lacked water supply and plumbing.

Sharp contrasts exist between the successful and unsuccessful farmers and the new and traditional farms. Even the successful new farmer however found that land preparation was inadequate with respect to drainage and fertilization. It should be noted that both of the traditional farmers are substantial landowners compared with most *propriétaires forestiers*.

On the basis of farm location, nearly half of the plaintiffs live in the Gabarret sector in the highest part of the Landes plateau, while 21 of the 32 farms started

in 1959 or 1960, years when the failure of the corn crop seriously reduced their first income as they were just beginning to farm.²⁵

The basis of the C.A.L.G.'s plan to promote corn cultivation was a strong domestic demand for corn as well as in the Common Market. It was hoped that with good yields of 50 quintals or more per hectare of a new hybrid corn, that farmers would quickly establish a capital base. Later ley pasture could be introduced and veal and milk production begin. A number of other cash crops with high returns such as sunflowers, rape, asparagus and early potatoes also have been introduced to help reduce the high indebtedness of many farmers.

The major repercussion of the farmer's financial difficulties has been a growing lack of confidence by other farmers in the C.A.L.G. and to some extent, by the latter in the farmers. Field interviews elicited opinions that the C.A.L.G. was reluctant to accept the cause of climatic misfortune and its lack of installed irrigation systems on farms for the early crop failures. Accusations were made that the repatriates from North Africa were lazy and could not adjust to an intensive farm system from the more extensive one to which they were accustomed. Poor public relations produced in many cases a deteriorating relationship between the C.A.L.G. and the farmer, a serious disadvantage in such an experimental project.

It is certain that some farmers slipped past the initial screening of applications without sufficient capital, management expertise or perhaps a genuine « pioneering » spirit. It is also true that the C.A.L.G. was too impersonal in the early stages, in its relationship with the farmers. No clear fault can be found on either side. The C.A.L.G. is however aware of the lack of rapport and is endeavouring to remedy the situation.

More minor arguments opposing the project include the charge that the establishment of 150 new farm families in *les Landes* is not going to repopulate the area. Many of the communes especially in *les Landes humides*, have lost more than 50% of their population since 1900. The repopulation is certainly small but is helping to raise or maintain densities in communes which would have suffered further migration. The indirect effects in tertiary employment of local service centres and in future pulp and wood products industries cannot be estimated very accurately. More local people are also applying for new farms as results have been relatively successful for the majority of farmers. There has been then a stabilising effect on the population of the communes where new farms have been created.²⁶

Conclusions

The programme of the C.A.L.G. with respect to the development of new agricultural areas can be assessed on three bases: the need to protect the forest; the success of the new farms; the success of a *Société d'économie mixte* in rural development.

²⁵ GRANGÉ, G., *op. cit.*, p. 132.

²⁶ 1962 Census of France and Commune Study by the C.A.L.G., *op. cit.* For example, the Commune of Saucats has the following Census populations: 1881-887, 1911-798, 1946-550, 1961-560. Solférino: 1906-616, 1931-323, 1946-389, 1960-351.

It can be concluded that the logic underlying this indirect method of forest protection is sound as the forest is the major key to new economic development in Aquitaine. There are also important subsidiary physical and economic results from the project which have a wider impact in the region. Since 1950 the area destroyed each year by fire has not exceeded 5 000 hectares although the role of the new fire-breaks in this is hard to determine. What is certain however is that now the forest is much more secure.

The success of the new farms is difficult to determine on the basis of profitability when the whole project is so heavily subsidised by the Government.²⁷ The majority of farmers are obtaining good crop yields and returns from stock. Although most are heavily in debt they are operating the most advanced new farms in Aquitaine with the technical resources of the C.A.L.G. and other rural extension services to assist them. The lesson of past crop failures has been learned and safeguards are now developed. There have been suggestions that a trial period for the farmers should have been made on each new farm. The C.A.L.G. has indicated that this would have caused financial loss and other difficulties. It has also been suggested that the *Société d'économie mixte* was not the right kind of organisation to manage the programme and that it should have been a government experiment for several years.²⁸ This would also have been very costly and it is unlikely that anything comparable to the present scale of area under new farms would have developed.

The distinct advantage of the *Société d'économie mixte* is its administrative independence and potential for work on a single major project. The C.A.L.G. was accused of being dictatorial with strong government control and little local participation. Yet its strength lays in the ability to concentrate its efforts on a major regional development project. It was precisely because local resources and administrations could not undertake the task that such an organisation as the C.A.L.G. with outside financing proved to be necessary. The scale of financing requiring guarantees of the state and the low returns and high risks in agriculture, would be unacceptable to a purely private enterprise. The *Société* has proved to be a useful tool which can study, plan and implement major projects. The fifth National Plan (1966-1970) indicates the need for other major drainage and irrigation projects in Aquitaine. These will most likely be undertaken by the C.A.L.G.

On balance the experiment can be said to be successful. The long term benefits to the public interest rather than immediate economic gains should be the final gauge of its success. The scheme is typical of the bold and imaginative regional development programmes in post-war France to remedy imbalances in resource use and population distribution.

RÉSUMÉ

La planification régionale est un item important dans la politique du gouvernement français ; l'aménagement du territoire rural des Landes dans la région d'Aquitaine en est un bon exemple. La diminution constante des domaines forestier et agricole, le déclin des activités économiques dans un milieu naturel peu favorable et l'exode de la

²⁷ 60% of the project is subsidised. GRANGÉ, G., *op. cit.*, p. 152; QUANCARD, C., *op. cit.*

²⁸ Pers. interview with M. Aymar Achille-Fould, *op. cit.*

population ont été les faits qui ont incité la mise en application d'un plan d'aménagement. De nombreuses mesures ont été prises pour améliorer le niveau économique de cette région ; en 1965 fut créée la Compagnie d'aménagement des Landes de Gascogne dont l'objectif principal est de protéger la forêt de la dévastation en créant des enclaves agricoles autosuffisantes qui servent de coupe-feu tout en relançant l'économie. La Compagnie d'aménagement des Landes de Gascogne vise donc à revaloriser la région en y implantant de nouvelles activités ; la parcellisation des terres cultivables est refaite et on procède à la mise en place d'équipements de transport, de drainage ou d'irrigation qui peuvent attirer la main-d'œuvre.

L'organisme d'aménagement a partiellement atteint les buts qu'il se proposait : le territoire forestier dévasté par les feux est de plus en plus réduit et les rendements agricoles sont meilleurs. À longue échéance, l'application de ce plan d'aménagement dans le territoire rural d'Aquitaine, s'avère une réussite.

ABSTRACT

Regional planning is an important item of government policy in France, and the rural land management of the Landes in the Aquitaine region offers a good example. The factors which instigated this planning operation were the constant rate of decrease in the areas under forest and of agricultural land, the decline in economic activity in an area where the natural environment is not very favourable and the exodus of the population. Numerous measures have been taken to improve the level of the economy in this region. In 1965, la Compagnie d'aménagement des Landes de Gascogne was established; its main objective is to protect the forest from destruction by creating enclaves of subsistence agriculture, which serve as fire breaks and at the same time reactivate the economy. La Compagnie d'aménagement des Landes de Gascogne aims therefore at stabilizing the region once again by setting up new activities. The arable land has been re-divided and transport, drainage and irrigation equipment, capable of attracting labour, is being installed.

The planning organization has partially attained the goals that were set. The area of forest devastated by fire has been reduced more and more, and agricultural returns are higher. On a long term basis, the application of this plan of land management in the rural areas of Aquitaine is proving a success.
