

Working Paper WP95-3

April 1995

**Fourth Minnesota Padova Conference on
Food, Agriculture, and the Environment**

Proceedings of a Conference Sponsored by
University of Minnesota
Center for International Food and Agricultural Policy

Universita degli Studi di Padova
Dipartimento Territorio e Sistemi Agro-forestali

Regione Veneto

Ente di Sviluppo Agricolo

SESSION II: LAND MARKETS IN THE U.S. AND E.U.

**PAPER 2: RECENT DEVELOPMENTS OF THE EU FARMLAND
MARKETS: NATIONAL VARIABLES AND COMPARATIVE
EFFECTS OF THE CAP REFORM IN SELECTED COUNTRIES**

*Guido M. Bazzani, Maurizio Canavari,
Maurizio Grillenzoni, and Alessandro Ragazzoni*

Center for International Food and Agricultural Policy

University of Minnesota
1994 Buford Avenue, 332 C. O.B.
St. Paul, Minnesota 55108-6040 U.S.A.
Phone: (612) 625-8713
FAX: (612) 625-6245

**Fourth Minnesota/Padova Conference on
Food, Agriculture, and the Environment**

Proceedings of a Conference Sponsored by

University of Minnesota
Center for International Food and Agricultural Policy

Università degli Studi di Padova
Dipartimento Territorio e Sistemi Agro-forestali

Regione Veneto
Ente di Sviluppo Agricolo

Spring Hill Conference Center, Wayzata, Minnesota
September 4-10, 1994

Working Papers are published without a formal review within or the endorsement of the Center for International Food and Agricultural Policy or Department of Agricultural and Applied Economics.

The University of Minnesota is committed to the policy that all persons shall have equal access to its programs, facilities, and employment without regard to race, color, creed, religion, national origin, sex, age, marital status, disability, public assistance status, veteran status, or sexual orientation.

CONSIGLIO NAZIONALE DELLE RICERCHE

UNIVERSITÀ DEGLI STUDI DI BOLOGNA

CENTRO DI STUDIO SULLA GESTIONE DEI
SISTEMI AGRICOLI E TERRITORIALI
(Ge.S.T.A.)

ISTITUTO DI ESTIMO RURALE E
CONTABILITÀ
(I.E.R.Co.)

**RECENT DEVELOPMENT OF THE EU FARMLAND MARKETS:
NATIONAL VARIABLES AND COMPARATIVE EFFECTS OF THE CAP
REFORM IN SELECTED COUNTRIES ^(a)**

by
Guido M. Bazzani, Maurizio Canavari (*)
and
Maurizio Grillenzoni, Alessandro Ragazzoni ()**

Fourth Minnesota/Padova Conference
on
FOOD, AGRICULTURE AND THE ENVIRONMENT
Spring Hill Center, MN, 4 – 10 September 1994

- (*) Respectively, Researcher of National Council for Research (CNR), and Post-graduate degree research fellow in "Appraisal and Land Economics" at the University of Padua. Authors of parts 1 and 2 (Bazzani 1 and 2.3; Canavari 2.1 and 2.2).
- (**) Respectively, Professor of Rural Appraisal and director of Ge.S.T.A. – C.N.R., and Post-graduate degree research fellow in "Economics and Management on Rural Land" at the University of Padua. Authors of part 3 (Grillenzoni 3.1 and 3.3; Ragazzoni 3.2).

(a) Research supported by MURST 60% funds. The Authors gratefully acknowledge Professor M. Merlo for helpful suggestions and D. Levorato for diagrams implementation.

CONTENTS

1. INTRODUCTION

2. LAND MARKET INFORMATION

2.1. Sources of Data

2.2. Land Mobility

2.3. Land Values

3. FACTORS INFLUENCING FARMLAND DYNAMICS

3.1. The Complexity of Land Price Formation

3.2. Effects of the CAP Reform

3.3. Influence of National Variables

4. FINAL REMARKS

REFERENCES

STATISTICAL SOURCES

APPENDIX

1. INTRODUCTION

The present paper consists of two main parts.

The first one gives a picture of the more recent development of the farmland market in selected EC countries since 1985/86. Two main indicators are used to make relatively comparable the observed trends concerning:

- i) land mobility,
- ii) farmland values.

The second one tries to evaluate the effects of the CAP reform and the influence of national variables overtime, taking into account the following indicators:

- i) mobility (on land transfers; on tenancy),
- ii) income (for agricultural or forest uses),
- iii) farmland values (in the plain; in the hill/mountain areas).

Considerations on land market complexity and segmentation are finally included, with justification of the empirical approach adopted in the paper.

2. LAND MARKET INFORMATION

The analysis focuses on the land market in six European countries: The Netherlands (NL), Germany (D), Belgium (B), France (F), Spain (E), and Italy (I).

In the first part the statistical sources will be considered; later on land mobility and trends in farmland values will be examined for the second half of the '80s, up to the last available year in the official statistics.

2.1. Sources of Data

In the six European countries under consideration, data availability is guaranteed by public offices, adopting two different approaches for data collection. According to this criterion two groups can be identified: countries with market values (D-NL-B) and countries with estimated values (E-F-I).

In the Netherlands farmland values are published by the Agricultural Land Management Bureau ("Ministerie van Landbouw, Natuurbeheer en Visserij" and by the "Centraal Bureau voor de Statistiek" (CBS)), which collect data from Land Property Register and from other public official sources, such as the applications to obtain fiscal advantages in land transfer. The average values are classified in three categories: farms larger than one hectare, arable land, grassland, distinguished between rented and not. Since

1986 data on surface exchange are not available. Values are average of real transactions ⁽¹⁾ and include quota related to milk, sugar and manure when present.

For Germany the statistical data about land market are reported by the "Statistisches Bundesamt" of Wiesbaden, which starting from 1974 collects the official data from the register of deeds ⁽²⁾. The annual report provides details for the *Länder* of the former Federal Republic of Germany about the number of transactions, the surface involved (total and SAU) and the total value of transactions. Such data are stratified according to the presence of buildings and inventory (cattle, machinery, equipment, etc.). Since 1990 are also reported the same figures regarding the new *Länder* of the Federation (formerly GDR).

Tables reporting data stratified in extension classes and concerning an important factor related with the farm land price (Doll et al., 1993), called *Ertragsmeßzahl* (EMZ) representing the land productivity, are also available. The type of land use of soil is not considered.

In Belgium ⁽³⁾ real estate exchange is carried on mostly through private contracts and, to a lesser extent, with public auction, being the latter normally reserved to rented or public property, which normally reach lower prices. Data are yearly published by the "Institut National de Statistique". Exchange values resulting from notarial acts are reported distinctly for public auctions and private contracts, and classified according to the real estate types. The classification of agricultural real estate includes sales of arable land, grassland, gardens, orchards, and farms. The report gives the number of sales, the exchanged surface and the total national value, detailed for districts, provinces and regions.

In France official data about farmland sales are not available, but the "Sociétés d'Aménagement Foncier et d'Etablissement Rural" (SAFER) give information about farmland market. This is a holding of private regional companies, that are able to exert the pre-emption if someone aims to sell agricultural land to non-farmers, and to correct the declared price ⁽⁴⁾. Data surveyed from the SAFER (representing most of the farmland market) are collected by the "Société Centrale d'Aménagement Foncier Rural" (SCAFR) and integrated with estimates of experts for the "Service Centrale des Enquêtes et Etudes Statistiques" (SCEES). This Service reports, therefore, the average estimated values,

(1) For statistical purposes at least 15 data for parcels and 40 for farms are requested. Otherwise value is not determined, as well as when variability is very high.

(2) Purchasing of land greater than 1 hectare is under permission of local authorities, which are able to exert the pre-emption in suburban areas and in territories subject to environmental constraints.

(3) The relatively high mobility can be explained because of fact that is not pointed out the final destination of purchased land. The possibility that agricultural land could be used for urban purposes can positively affect data in the nearby of urban areas.

(4) For this characteristics the SAFER can also positively influence the farmland market.

without details about sales and marketed surface, by administrative subdivision (department and agricultural regions).

In Spain the first national research on farmland market was held in 1979 by the "Secretaria General Técnica del Ministerio de Agricultura Pesca y Alimentación" (M.A.P.A). The first data for the period 1979–82 have been presented in the "Boletín de Información de Precios de la Tierra". Since 1984 data have been published by land destination and water availability, both at a national and a regional level (Comunidad Autónoma) ⁽⁵⁾. Values are estimated on the base of real transactions or preliminary contracts.

In Italy farmland market data collection is carried out by "Istituto Nazionale di Economia Agraria" (INEA). Data are yearly published according to two geographic criteria (altimetric zones and agrarian regions), which recall the land classification adopted by ISTAT ⁽⁶⁾. INEA presents furthermore levels of values for the main destinations of agricultural land in the country, based on estimates by experts. This information, not supported by exchange surface data, is followed by considerations on the annual development.

2.2. Land Mobility

In the second half of the '80s land mobility has been very low.

In the Netherlands land mobility was about 1.7% (1987); not very different from 1.6% registered in 1980. On average, sales regard 2.6–3.3 hectares for parcels, 12–15 hectares for farms. A recent study (Veeneklaas & Slothouwer, 1993) showed that buyers are mostly farmers (84%), while generally sellers are not from the agricultural sector. Environmental Associations play an important role as buyer for naturalistic purposes.

In Germany the land mobility is normally really low (about 0.4% as average of the last decade) because of the succession law aiming to maintain the integrity of farm structure. The average exchanged surface for each sale of agricultural land in 1991 was 1.5 hectares in the former West Germany and 4.65 hectares in the former GDR ⁽⁷⁾. In case of

(5) The research intended to assess the value of land, not rented and for agricultural destination only; public properties and urbanization areas were not included. From a methodological point of view a sample approach was adopted; land unit was identified in the *comarca*, inside which surfaces for investigation (*parajes*) were selected. A *paraje* is a representative surface of the different cultivations and is characterized by an average land quality. The original *parajes* are still in use. Values are always referred to november and in case of orchards at the production period.

(6) Since 1988 INEA adopted as total surface the one determined by ISTAT in 1982, modifying old data. In 1989 new values were published but only for agrarian region and not for altimetric zones. Differences are considerable, new values are on average about 15% higher, but strong differences exist among the regions.

(7) Purchasing of parcels between 0.1 and 1 ha during 1991 was about 63% of the total number of sales in the western *Länder*, corresponding to 17% of the purchased agricultural land. On the

sales regarding farms, the average surface is reduced from 14–15 hectares (12% of total exchanged surface) of the early '70s to the 8 hectares of the '80s (8%).

The land mobility rate registered in Belgium for 1990 was 2.44% of total SAU. This figure shows that the market is fairly dynamic. The evolution registers a higher incidence of private contracts with respect to public auctions, lowered from 20% to 10% of the total sales during the period 1975–1990. The average surface sale is 1.8 hectares; sales are mainly represented by arable land and grassland (83%).

In France over 500,000 hectares were marketed in 1990, with a land mobility rate of about 1.8%; in 1991 exchanges reduced to 450,000 hectares, fallen to 426,000 in 1992. According to SCAFR, during 1991 farmers purchased the 68% and the same category sold 24% of total surface, which must be added to a 25% of sales of undivided inheritances; non farmers purchased 32% and sold 51%. In the same year a positive balance between purchases and sales was registered by foreign investors.

For Spain land mobility index has never been published at a national level. Studies show that regional mobility vary in accordance with the intensity of farmland uses.

In Italy land transfers mainly regard small plots of land; only about 20% of the transferred land is part of farms. Surface data are not available at a national level. Studies in Emilia–Romagna ⁽⁸⁾ show that land mobility is about 5–6% (Grillenzoni et al. 1993 and 1994); specific surveys regarding the formation or the enlargement of the owner–occupiers farms reveal a land mobility about 1.5% (Bertazzoli and Grillenzoni, 1989). Land mobility is higher in the plains than in the hills or mountains. The supply is supported by extra–agricultural categories, the demand by farmers; it can be pointed out the increasing role, as land buyer, played by machinery contractors enterprises.

2.3. Land Values

Farmland values present a downward trend during the 1985–92 period in real terms almost everywhere, with important differences among the six countries; land values were, as expected, strongly influenced by the decrease of the agricultural revenues. Land as long–term investment has lost most of its importance. Values are presented in real terms ⁽⁹⁾, so they exclude an important cause of diversity among the countries such as inflation (see the appendix Table A 1). In these conditions figures reproduced in the appendix give "indicators" of land values trend, while national specifications of value are presented in the following tables in real terms.

contrary, purchases of parcels in the eastern *Länder* was mainly represented by parcels larger than 5 hectares (35%), corresponding to 83% of the purchased agricultural land.

(8) A Region in the North, in the Po valley, characterized for an important and modern agriculture.

(9) The EEC GDP deflator as been adopted because of its homogeneity among all the countries under consideration.

In the Netherlands farms values have increased about 24% in the period 1985–92 and grassland raised about 18% in the same period, while arable land decreased about 5% (Table 1). Figure A 1 shows that values reached a local maximum in 1986, followed by a 3-year period of decreasing trend (1987–89). An up and down development then occurred in the last three years. Studies have shown that milk quota determine higher land values, being the quota capitalized into the land. According to types of soils others differences in values might be identified. On average the values of rented land are 40% lower.

Table 1 Farmland Values in the Netherlands (1,000 Gld/ha at 1985 prices)

	1985	1986	1987	1988	1989	1990	1991	1992
<i>Farms > 1 ha</i>	46.4	52.2	50.2	46.3	47.8	55.8	53.0	57.7
<i>Arable land</i>	37.4	39.6	36.9	33.1	33.2	38.0	34.9	35.5
<i>Grassland</i>	37.0	46.2	45.5	44.5	42.4	46.9	39.8	43.6

Source: LEI-DLO

In Germany, farmland prices show a downward trend in the period 1985–92 (Table 2), that follows a period of high level prices just ended in 1984. The fall of arable land prices is fairly regular and leads to a loss of 33.3% in real terms (–5.6% per year between 1985 and 1992). The price of farms has shown a waving pattern that has brought to a loss of 18.6% in real terms.

Table 2 Farmland Values in the former West Germany (DM/ha at 1985 prices)

	1985	1986	1987	1988	1989	1990	1991	1992
<i>Parcels</i>	36,864	33,778	31,064	29,522	28,265	29,736	27,594	24,593
<i>Farms</i>	56,873	47,504	40,558	48,736	42,532	52,088	43,666	46,287
<i>General</i>	38,629	35,003	31,907	31,168	29,612	31,581	28,961	26,255

Source: Statistisches Bundesamt

Time series of farmland prices in Belgium point out a different behaviour of the real estate typologies. Values of arable land and grassland (that represent the main part of the sold surface) have basically maintained in real terms almost the same level over time (–9% from 1985 to 1992). Orchards and gardens have had a significant upward trend in real terms (+32.7%); a more regular and even more rising trend was registered for the price of farms, which increased by 43.8% in the same period (Table 3).

Table 3 Farmland Values in Belgium (1,000 BF/ha at 1985 prices)

	1985	1986	1987	1988	1989	1990	1991	1992
<i>Arable & grassland</i>	408.2	393.1	394.0	388.3	391.0	393.8	383.2	371.6
<i>Orchards & gardens</i>	664.5	630.3	713.6	756.2	1,015.8	775.4	N.A.	881.9
<i>Farms</i>	701.2	713.5	686.2	837.6	893.8	868.4	N.A.	1,008.6
<i>General</i>	449.7	442.2	444.9	451.2	469.6	467.5	N.A.	459.9

Source: Institut National de Statistique

The French farmland market (Table 4) is characterized by the really high prices of qualified vineyards in the A.O.C. (Appellation d'Origine Contrôlée) areas, having a range from 3 to 10 times respect of arable land. At constant prices the value of arable land, of grassland and of orchards is regularly downward bound (respectively - 22.6%, - 30.4%, and - 17.9% between 1985 and 1990). In the same period values of A.O.C. and other vineyards increased respectively by 46% and by 55.8%.

Table 4 Farmland Values in France (FF/ha at 1985 prices)

	1985	1986	1987	1988	1989	1990	1991	1992
Arable land	22,200	21,033	20,220	19,548	19,373	18,821	18,096	17,174
Grassland	17,700	16,252	15,328	14,469	14,091	13,764	13,055	12,313
Orchards	57,175	52,677	51,622	50,653	49,747	49,933	48,462	46,945
Qualified vineyards	145,000	158,509	163,437	170,468	190,399	204,427	214,836	211,676
Other vineyards	41,400	39,699	39,648	42,504	45,671	59,578	64,947	64,483

Source: SCEES

In Spain farmland values are highly differentiated according to land destination; for example, in 1992 given an average land value of 315 thousands pesetas/hectare, the irrigated land ranked nearly three times higher, while dry land was about 78% of the average (Table 5). Farmland values presented a downward trend (-23.7 in the period 1985-92) more severe for irrigated land (-35.1). It can be pointed out that this decline started in 1988 when irrigated land was at the top values. Only dry grassland and bananas plantations significantly increased their values (respectively of 11.2% and 5.8%). On the other hand, arable land decreased by about 29.3 and orchards by 26.4.

Table 5 Farmland Values in Spain (1,000 Ptas/ha at 1985 prices)

	1985	1986	1987	1988	1989	1990	1991	1992
<i>Not irrigated</i>	306.8	305.8	322.6	357.3	358.6	325.7	291.5	248.5
<i>Irrigated</i>	1,473.9	1,481.5	1,607.1	1,587.9	1,549.4	1,395.4	1,211.6	956.6
<i>General</i>	412.9	416.1	443.4	472.8	470.4	426.0	377.9	314.9

Source: MAPA

In Italy farmland values suffered a strong decline in the first half of the '80s until 1986: in this year they lost 5% with respect to the previous one (Table 6). The period 1986–91 presents little variations; only in the insular part of the country values decline in 1990 falling down to 86% of 1985 value. In 1992 farmland in the North suffered a new strong decline; on the contrary farmland values in Central Italy rose again recovering part of the previous decline. In the period 1985–92 land values declined about 10% on average in real terms; more in the insular part –14.5%; less in the central –4.3%; about –10% in the other regions. Farmland values are highly differentiated among altimetric zones: in 1992 plains values rank five times higher than the internal mountains ones and nearly twice of the hilly ones.

Table 6 Farmland Values in Italy (1.000 Lit/ha at 1985 prices)

<i>Agrarian regions</i>	<i>1985</i>	<i>1986</i>	<i>1987</i>	<i>1988</i>	<i>1989</i>	<i>1990</i>	<i>1991</i>	<i>1992</i>
<i>North-west</i>	7,428	6,996	7,063	7,004	7,201	7,126	7,124	6,705
<i>North-east</i>	7,561	7,013	7,083	7,075	7,306	7,322	7,322	6,692
<i>Centrum</i>	4,142	3,846	3,796	3,718	3,823	3,788	3,789	3,964
<i>South</i>	4,340	4,087	4,086	4,046	4,002	3,923	3,923	3,936
<i>Islands</i>	3,695	3,424	3,399	3,369	3,337	3,184	3,184	3,158
<i>General</i>	5,316	4,965	4,976	4,934	5,019	4,953	4,953	4,791

Source: INEA

3. FACTORS INFLUENCING FARMLAND DYNAMICS

3.1. The Complexity of Land Price Formation

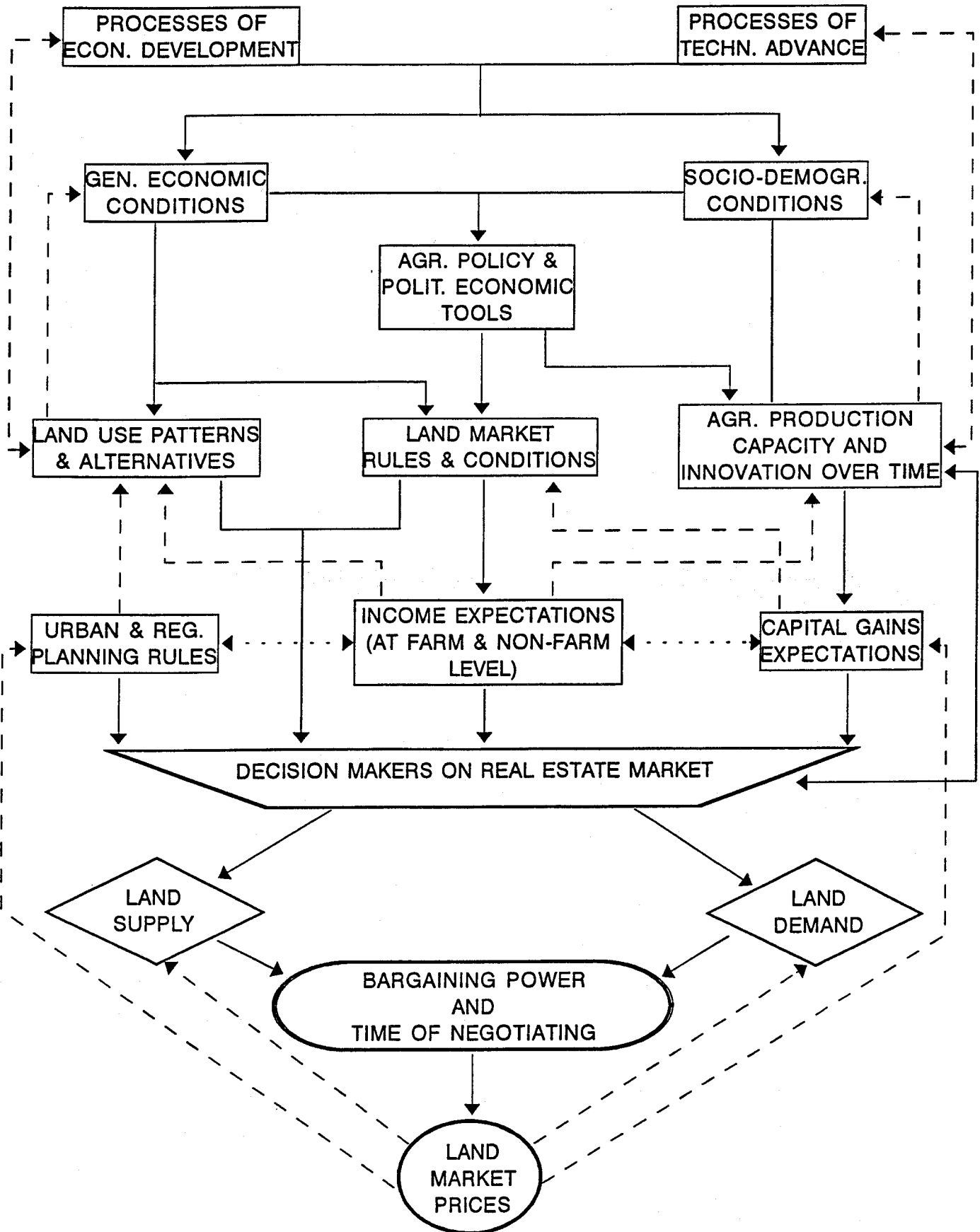
Instead of attempting an interpretation, country by country, of farmland values during the observed period of time, it seems more useful to offer an overall view of price formation in the land market and of its determinants over time (Grillenzoni, 1986).

The economic model shown in Diagram 1 would appear fairly clear to anyone who is involved in real estate market and investment, as well as real estate operators or analysts. This might be an economic approach to a simultaneous equations system, which the staff of I.E.R.Co. – Ge.S.T.A. have tried to set up in the search for new feasible solutions to many models presented in the U.S.A. and in Europe during recent years with the purpose of explaining land price variations through operations research, using different quantitative models.

In the context of the present paper, the economic model has mainly the purpose to give a synoptic representation of the complexity of land price formation, involving several variables, most of which are difficult to be quantified. From a macroeconomic point of view, we may firstly notice the influence that the greater or smaller availability of land

Diagram 1

PRICE FORMATION IN THE LAND MARKET AND DETERMINANTS OVER TIME



resources, in relation to the resident population, has on the relative levels of land values (see appendix tables A2 and A3).

When demographic pressure is registered in limited areas of a country, land used for agriculture does not suffer very much from the land demand for other uses in the national context (for example, in the U.S.A. situation and, to a lesser extent, that of France and Spain). On the contrary, this phenomenon plays an important role in Belgium, in some parts of Italy, in the Netherlands as well as in West Germany, where the high level of land values seems to be more influenced by the limited availability of land than by the declining level of agricultural employment within the economy.

Because of the decline of public investments occurred in some EC countries during the second half of the '80s, mid-term movements of farmland values seem to be connected more to farm income expectations and to agricultural production capacity in terms of technological innovation and management abilities to react to the CAP reform than to capital gains expectations associated with changes in land use patterns.

Nevertheless the importance of land as a "consumption good" for recreation, protected areas, etc. may continue and even increase, somewhere, because of the land use diversification and of the positive externalities performed by agriculture and forestry in terms of countryside stewardship (Ferro et al., 1994). Real estate development for touristic activity is also expanding in relation to the demand for new residential or second homes, new resort villages and commercial services. Specialized reviews (Int. Real Estate Journal, Land Economics, etc.) offer several examples of such demand worldwide as effect of general economic development and capital accumulation.

These considerations bring to a better understanding of the land market complexity and segmentation, as we shall point out at the end of this paper.

3.2. Effects of the CAP Reform

We keep well in mind the general considerations about the American experience with set-aside and those specifically about the initial EC set-aside program made, respectively, by Ford Runge and by Harald von Witzke (1989). Many of their considerations are still actual at the present time, as well as those offered within the Ce.S.E.T. (1991) and the S.I.D.E.A. (1992) conferences.

Really, the CAP reform, known as "Mac Sharry reform", has been developed in recent years, adjusting the basic objective of reducing the excess productions by several and diversified measures (see appendix prospect A4), which may have produced different effects on farmland dynamics. Since the time application of such measures is fairly short, international literature is scarce of specific references about.

Diagram 2

MAIN FACTORS OF THE CAP REFORM INFLUENCING FARMLAND DYNAMICS

MAIN FACTORS (a)	MOBILITY		INCOME		VALUES IN	
	PROPERTY	TENANCY	AGRIC.	FOREST	PLAIN	HILL/ /MOUNT.
MILK QUOTA APPLICATION	-		+		+	+
FARM INCOME SUPPORT TO EXTENSIVATION (SET-ASIDE)	-		=/+		-	=/+
INCENTIVE SCHEME OF AFFORESTATION	-/+	(+)		+	+	+

(a) According to the Mac Sharry Reform

Therefore, limiting the argumentations to the following main indicators: i) milk quota application; ii) farm income support to extensivisation (set-aside); iii) incentive scheme of afforestation, we may observe (Diagram 2):

- i) a decreasing land supply associated to a slight increase of farm incomes and values for the milk quota holders, who very often own the land too. Data for Dutch and French meadows and grassland, and for the "Parmigiano-Reggiano" area in Italy confirm this assumption. The only differentiation might be related to the Dutch experience, where the demand for land to expand the farm size has determined a jump for grassland quotations, overpassing the arable land values (Bazzani, 1994);
- ii) a trend to a decreasing land mobility from the supply side also is taking place, as far as the income support to extensivisation has produced a fairly stable (or even increasing) profitability for many types of farmers. The set-aside programs (see appendix Table A 5), moving from a voluntary to a compulsory basis, have certainly produced benefits, as far as farmers have adopted less intensive agritechniques (Grillenzoni and Sarti, 1994).
The response of land values to this de-intensification process has been, according to our personal experience, fairly diversified at zonal level: i.e. a decreasing trend for productive land in many plain regions, but surprisingly stable or even increasing values in the hill and in the mountain areas, where agriculture is still active, by extensive uses;
- iii) the decreasing trend to land transfers may be compensated by an increasing demand of long-term tenancy contracts, because of the incentive scheme of afforestation (20 years period). Even if the time prospects are very long, farm incomes might increase according to credit facilities and direct transfers to farmers over time. Land values are, therefore, expected to go up and, somewhere, to re-evaluate in real terms, as far as the environmental policy becomes consistent within protected areas (Tempesta, 1994). A combination of complementary actions, like wood production improvement, guided accessibility to areas of touristic interest, recreation facilities, skilled (= controlled) urbanization in few surrounding planned sites might offer a set of opportunities of environment-oriented appreciation for natural and human resources (Casini, 1993).

3.3. Influence of National Variables

Obviously, the ongoing measures acting under the CAP reform might be very diversified in the EU countries, since many variables differently influence farmland dynamics at a national level.

Behind the main indicators concerning the economy, peculiar variables may affect land mobility and values in each member State.

Limiting the analysis to those, which may prevail in the short-medium term with respect to the Italian situation, we have selected the following: i) credit and finance; ii) parallel/alternative markets; iii) dismissions and investments. In more detail, let's try to explain our personal opinion as follows (Diagram 3):

Diagram 3

MAIN NATIONAL FACTORS INFLUENCING FARMLAND DYNAMICS

FACTORS AND VARIABLES	MOBILITY		INCOME		VALUES IN	
	PROPERTY	TENANCY	AGRIC.	FOREST	PLAIN	HILL/ /MOUNT.
CREDIT AND FINANCE						
Financial support to owner-occupiers farmers (↓)	-	+			-	..
Fiscality on property (↑)	-	..	-		-	..
PARALLEL/ALTERNATIVE MARKETS						
Liberalization of the letting system (↑)	-	+	+	..	=	=
Stock exchange market (↕)	-/(+)				-/(+)	..
Urban real estate market (↕)	-/(+)				-/(+)	..
DISMISSIONS AND INVESTMENTS						
State and local Auth. properties (↑)	+	+	-	-
New public works (↑)	+	..	=	=	+	+

(..) Unpredictable Effects

- i) the decreasing financial support to owner-occupiers farmers, associated to an increasing fiscality on real estate property would determine a diminishing demand for land transfers, favouring tenancy contracts for those "direct" farmers who want to expand their farm size according to the labour force they own. In so far, farmland values are expected to continue the decreasing trend for the former variable.

The increasing fiscality would have a negative impact on farm incomes and values in the plain areas, while unpredictable effects may be supposed for hill and mountain areas, most of which are included in the "less-favoured" ones;

- ii) the liberalization of the letting system, which has been taking place during the '90s (Casadei and Germanò, 1992, Ministère de l'Agriculture, 1993), would increase the tenancy contracts (as said before) and the rent of land-owners. No specific effects are expected for farmland values. The stock exchange market, as well as the urban real estate activity usually work in the opposite direction of the farmland market. The more recent years experience has confirmed this general rule. Potential investors are presently focused on alternative opportunities outside agriculture;

- iii) recent government decisions towards a privatisation of land properties owned by the State and by Local Authorities and Public Administrations would have a medium term effect to increase land mobility, but to slope down the values. This phenomenon is not peculiar to Italy, since Great Britain, France, etc. have already moved in the same direction (Dossier Genio Rurale, 1994).

A hypothetical increase of land mobility and values might, finally, be induced by "new" public works (high-speed railways, doubling highways system, etc.) according to employment goals and transparency targets, which are presently under governmental consideration.

Of course, the previous analysis did not consider the rate of inflation, nor unpredictable changes in the economy of the selected countries, even if we are conscious that the economic growth and the net wealth of each country will run by a diversified speed.

4. FINAL REMARKS

The concise style of this paper makes clearer the aim of the economic analysis of farmland markets, with specific considerations about the possible effects produced by the recent CAP reform and some national variables operating in different directions and diversified intensity within the selected EU countries.

The complexity and segmentation of farmland market have suggested, for a moment, to set up a comprehensive model based on a multi-criteria procedure.

The empirical result of this tentative evaluation has been fairly unsatisfactory for several reasons. First of all, because the initial conversion of the variables from an ordinal

scale to a cardinal one would require a wider survey, not only limited to the selected "opinion leaders". Secondly, because the progressive aggregation of conventional data into a matrix, even using reasonable "magnitudo", would have lost that kind of "specificity", which was – after all – the main purpose of the analysis.

The flattening result was, therefore, inconclusive. Certainly, methodological improvements are needed, starting from well defined objectives and selected variables consistent with acceptable hypotheses from a statistical point of view. Our personal opinion, in this context, is that we need more time and deeper assumptions to form a set of quantitative models, capable of offering feasible solutions associated with a certain degree of flexibility over time.

Nevertheless, within these limitations, we do think we have offered an economic analysis, with an acceptable insight into the recent development of farmland market, characterised by higher complexity and segmentation. That's why, it remains a stimulating matter of investigation.

REFERENCES

- AA.VV. (1991), *Sviluppo sostenibile nel territorio. Valutazione di scenari e di possibilità*, Atti del XXI Incontro Ce.S.E.T., Perugia.
- AA.VV. (1994), *I beni immobili pubblici e privati: tendenze evolutive e criteri di valutazione*, Dossier di Genio Rurale, n.5 e 6.
- BAZZANI G.M. (1994), *Agricoltura, mercato fondiario e uso dei suoli in Olanda*, Genio Rurale, n.12.
- BAZZANI G.M., CANAVARI M. (1994), *Dinamica dei valori fondiari in alcuni paesi dell'Europa continentale*, Aestimium (in printing).
- BAZZANI G.M., GRILLENZONI M. (1994), *Politica agro-ambientale e riflessi sul settore primario: normativa CE e riferimento nazionale*, (in printing).
- BERTAZZOLI A., GRILLENZONI M. (1989), *Farmland mobility and values by types of land use: a case study in a Province of Emilia-Romagna*, Proceedings of the First Conference on "Agricultural Policy and the Environment", Motta di Livenza, June.
- CARLE P., REY B. (1992), *Du prix des terres dans l'espace rural européen à l'émergence de nouvelles valeurs*, PURPAN, 163.
- CASADEI E., GERMANÒ A. (ed. 1992), *Gli accordi collettivi*, Giuffrè Ed., Milano.
- CASINI L. (1993), *La valutazione economica degli effetti dell'istituzione di un parco: l'analisi dell'impatto sull'economia locale*, Rivista di Economia Agraria, n.1.
- DE MEO G. (ed., 1994), *L'agricoltura italiana di fronte ai nuovi vincoli di mercato*, Atti del XXIX Convegno S.I.D.E.A. – Perugia 1992, Il Mulino, Bologna.

- DOLL H., GÜNTHER H.J., KLARE K. (1993, draft), *Kaufpreise für landwirtschaftlich genutzten Boden in den neuen Bundesländern*, Institut für Strukturforschung der Bundesforschungsanstalt für Landwirtschaft, Braunschweig.
- ERTL J. (1992), *La politica agraria della C.E.E. nel quadro dell'agricoltura mondiale*, Atti della Accademia Nazionale di Agricoltura, Bologna.
- FERRO O., MERLO M., POVELLATO A. (1994), *Valuation and Remuneration of Countryside Stewardship Performed by Agriculture and Forestry*, XII IAAE Conference, Harare, August.
- GRILLENZONI M. (1986), *Appraising Land Values in the '80s Scenario*, Int. Real Estate Journ., vol. 12, n.1, (see bibliography for previous years).
- GRILLENZONI M., PIRAZZOLI C., RINALDI I. (1993 and 1994), *Il mercato fondiario in Emilia Romagna*, Ed. Calderini, Bologna.
- GRILLENZONI M., SARTI D. (1994), *Agricultural Practice Changes in Emilia-Romagna: An Economic Analysis*, Proceedings of the Conference "Agricultural Policy and Environment" (Rosato P. ed.), Unipress, Padua.
- MAC LELLAN WILSSON E. (1992), *L'attuale politica agricola negli USA e le sue implicazioni nelle relazioni con la CEE*, Accademia Nazionale di Agricoltura, Bologna.
- MERLO M., ROSATO P. (1990), *An Analysis of the Land Market in the Veneto Region: Factors Affecting Agricultural Land Prices*, Proceedings of the First Conference on "Agricultural Policy and the Environment, Motta di Livenza 1989, June, Staff Paper P90-20 - vol. III, DAAE, University of Minnesota.
- MINISTÈRE DE L'AGRICULTURE, *Loi sur le bail à ferme*, (as revised 7/11/1988), Summary and translation presented by M. Tracy at the 3rd EAAE Seminar "Capital and Finance in West and East European Agriculture", Wageningen, March 1993.
- RODRIGUEZ P.S. (1986), *La encuesta de precios de la tierra del MAPA.*, Agricultura y Sociedad, n.41.
- ROSATO P. (1991), *Un'analisi del mercato fondiario veneto: i fattori che influiscono sul prezzo dei terreni agricoli*, Genio Rurale, n.2.
- RUNGE FORD C. (1989), *The American Experience with Set-Aside and its Implications for the European Community*, Paper presented at the Fiera of Padova, May.
- SCHRÖRS M. (1990), *Analyse und Prognose von Bodenpreisen mit Zeitreihenmodellen*, Wissenschaftsverlag Vauk, Kiel.
- SOTTE F., BUONCOMPAGNI G. (1994), *An Overview on Public Transfers in the Italian Agricultural Policy*, Dip. di Economia, n.48, Ancona.
- SUMPISI V.J.M. (1986), *El mercado de la tierra y la reforma de las estructuras agraria*, Agricultura y Sociedad, n.41.
- TEMPESTA T. (1994), *Environmental Constraints and the Land Market: The Case of Colli Euganei Regional Park*, Paper prepared for the Fourth Conference on "Food, Agriculture and the Environment", Spring Hill Center, MN, September.
- VEENEKLAAS F., SLOTHOUWER D. (1993), *Grondprijzen*, DLO Staring Centrum. Interne mededeling 238. Wageningen.

- VON WITZKE H. (1989), *The EC Set-Aside Program: Can it Work?*, Paper presented at the Fiera of Padova, May.

STATISTICAL SOURCES

- LEI-DLO (1992). *"Landbouw-Economisch-Bericht"*. Den Haag.
- Institut National de Statistique (various years). *"Statistiques financieres - Ventes de biens immobiliers"*. Bruxelles.
- *"Le prix de la terre en France"*. Regards sur le foncier - La revue des SAFER nn. 27, 31, 35, 39, edited by S.C.A.F.R..
- Données chiffrées - Agriculture (1993), *"Le prix des terres agricoles en 1992"*, Service Centrale des Enquêtes et Etudes Statistiques (SCEES).
- M.A.P.A. (various years). *"Boletin de informacion de precios de la tierra"*.
- Statistisches Bundesamt (various years). *"Kaufwerte für landwirtschaftlichen Grundbesitz"*, Metzler Poeschel, Stuttgart.
- INEA (various years). *"Annuario dell'Agricoltura Italiana"*. Il Mulino, Bologna.

APPENDIX

TABLES AND FIGURES

Table A 1 Inflation Rate in the Selected EU Countries (1985-92)

	1985	1986	1987	1988	1989	1990	1991	1992
<i>Belgium</i>	+5.3%	+4.8%	+1.8%	+1.5%	+3.4%	+3.1%	+3.1%	+2.4%
<i>France</i>	+5.7%	+4.6%	+2.6%	+3.2%	+3.0%	+2.7%	+3.3%	+2.0%
<i>Germany (West)</i>	+2.2%	+3.1%	+2.1%	+1.4%	+2.5%	+3.4%	+4.6%	+3.7%
<i>Italy</i>	+8.8%	+8.0%	+5.6%	+6.8%	+6.3%	+7.5%	+7.3%	+4.7%
<i>Netherlands</i>	+2.1%	+0.2%	-1.0%	+1.8%	+1.1%	+3.3%	+3.2%	+2.6%
<i>Spain</i>	+9.1%	+11.3%	+5.7%	+5.7%	+6.9%	+7.3%	+6.8%	+5.4%

Source: Report on the Agriculture in the EEC, Relation 1986-1992 - T20

Table A 2 Economic Indexes in the Selected EU Countries (1990)

	Tot. Surface		Population		GDP/capite	Inflation rate	Unemployment rate
	km2	%	000 units	%	spb (1)	%	%
<i>Belgium</i>	30,519	1.8	9,948	4.1	19,089	3.1	10.0
<i>France</i>	549,088	32.8	56,304	23.4	20,207	2.7	10.6
<i>Germany (West)</i>	248,619	14.8	62,700	26.1	21,074	3.4	6.4
<i>Italy</i>	301,277	18.0	57,576	24.0	19,184	7.5	17.4
<i>Netherlands</i>	41,480	2.5	14,892	6.2	19,093	3.3	5.3
<i>Spain</i>	504,765	30.1	38,925	16.2	14,557	7.3	15.6
Total	1,675,748	100.0	240,345	100.0	21,074		

(1) Standard Purchasing Index

Source: Report on the Agriculture in the EEC, Relation 1992 - T20

Table A 3 Agricultural Indexes in the Selected EU Countries

	SAU (1)	Farms	Average Farm Size	Employment in Agriculture	Employment Agr./Tot.	GDP Agr./Tot.
	(1990)	(1987)	(1987)	(1990)	(1990)	(1990)
	.000 ha	.000 units	ha	.000 units	%	%
<i>Belgium</i>	1,363	93	14.8	101	2.8	2.4
<i>France</i>	30,581	982	28.6	1,325	6.1	3.3
<i>Germany (West)</i>	11,868	705	16.8	961	3.4	1.7
<i>Italy</i>	17,210	2,784	5.6	1,895	9.0	4.0
<i>Netherlands</i>	2,019	132	15.3	289	4.6	4.6
<i>Spain</i>	27,110	1,792	13.8	1,486	11.8	4.7
Total	90,151	6,488		6,057		

(1) Agricultural Utilized Surface

Source: Report on the Agriculture in the EEC, Relation 1992 - T20

Prospect A 4 Main EU Legislation Concerning Agriculture and the Environment

LEGISLATION	YEAR	SECTOR	MAIN OBJECTIVES
<i>Green book</i>	1985	Agriculture	Prospective of CAP for the environment
Reg. 797	1985	Agriculture	Improvement of farm structures; environmental restraints are firstly introduced
Dir. 337	1985	Environment	EIA Procedure concerning private and public projects of investment
Reg. 1760	1987	Agriculture	Agricultural production conversion and extensivisation
E.C. Act (Atto Unico)	1987	Environment	European policy for the environment: <i>who produces pollution, he must pay</i>
Reg. 1094 - 1137 - 1272 - 1273	1988	Agriculture	Adjustment of Reg. 85/797: reduction of excess agricultural supply; set-aside within rotation
Reg. 768 - 1688	1989	Agriculture	Set - aside and income support measures
Reg. 2092	1991	Agriculture	Regulation of "Organic agriculture"
Reg. 2328	1991	Agriculture	Revision of Reg. 85/797, completed by the following Reg. 92/1765
Reg. 2071/2/3	1992	Agriculture	Regulation of milk quota and price
Reg. 1765	1992	Agriculture	Income support measures concerning arable land; compulsory set-aside
Reg. 1766	1992	Agriculture	Introduces methods of eco-agricultural production with respect to environment protection
Reg. 2078	1992	Agriculture	Support programme to extensivisation and eco-compatible agriculture
Reg. 2080	1992	Agriculture	Support programme to forestation and natural resources

Table A 5 The Set-Aside Application Within EC Countries (000 Hectares, First 3-Year Period)

Countries	1988/89	1989/90	1990/91	Total	Percent
Belgium	0.3	0.1	0.2	0.6	0.0
Denmark	-	-	5.5	5.5	0.2
France	14.2	39.7	112.6	166.5	7.3
Great Britain	52.0	48.8	28.9	129.7	5.7
Italy	93.8	328.7	571.5	994.0	43.4
Netherlands	2.6	6.1	5.9	14.6	0.6
Spain	34.2	13.9	36.0	84.1	3.7
W. Germany	165.1	57.3	71.0	293.4	12.8
Germany (ex DDR) (*)	-	-	599.2	599.2	26.2
Other Countries (**)	1.1	0.7	0.2	2.0	0.1
Total	363.3	495.3	1,431.0	2,289.6	100.0

(*) Nat. programme

(**) Luxembourg, Ireland, Greece

Source: EUROSTAT

Figure A 1 Farmland Value Indexes in the Netherlands (1985=100)

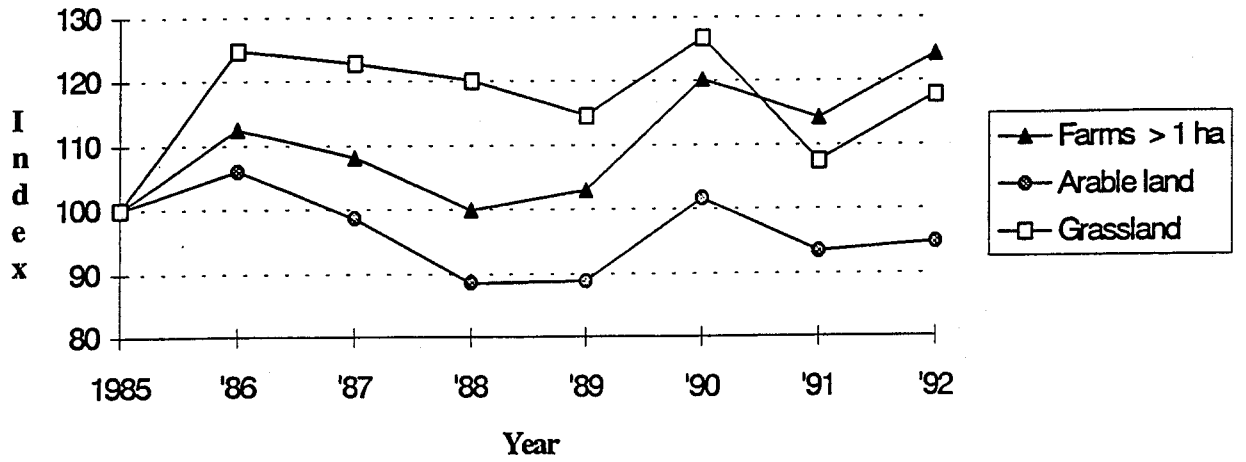


Figure A 2 Farmland Value Indexes in the former West Germany (1985=100)

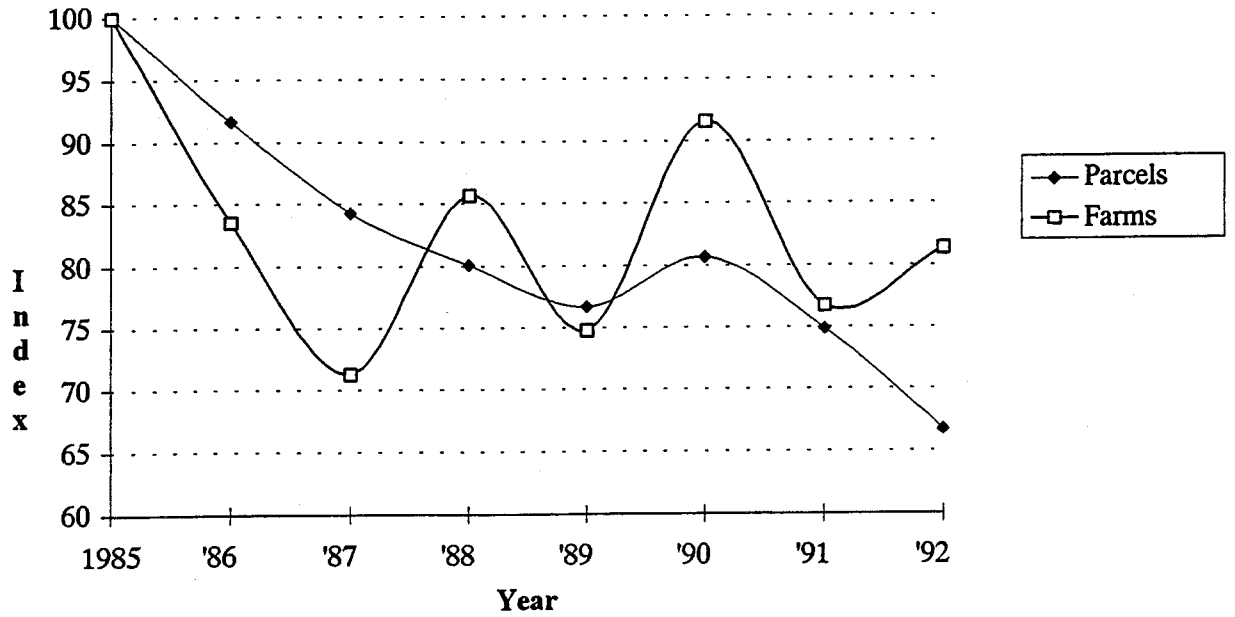


Figure A 3 Farmland Value Indexes in Belgium (1985=100)

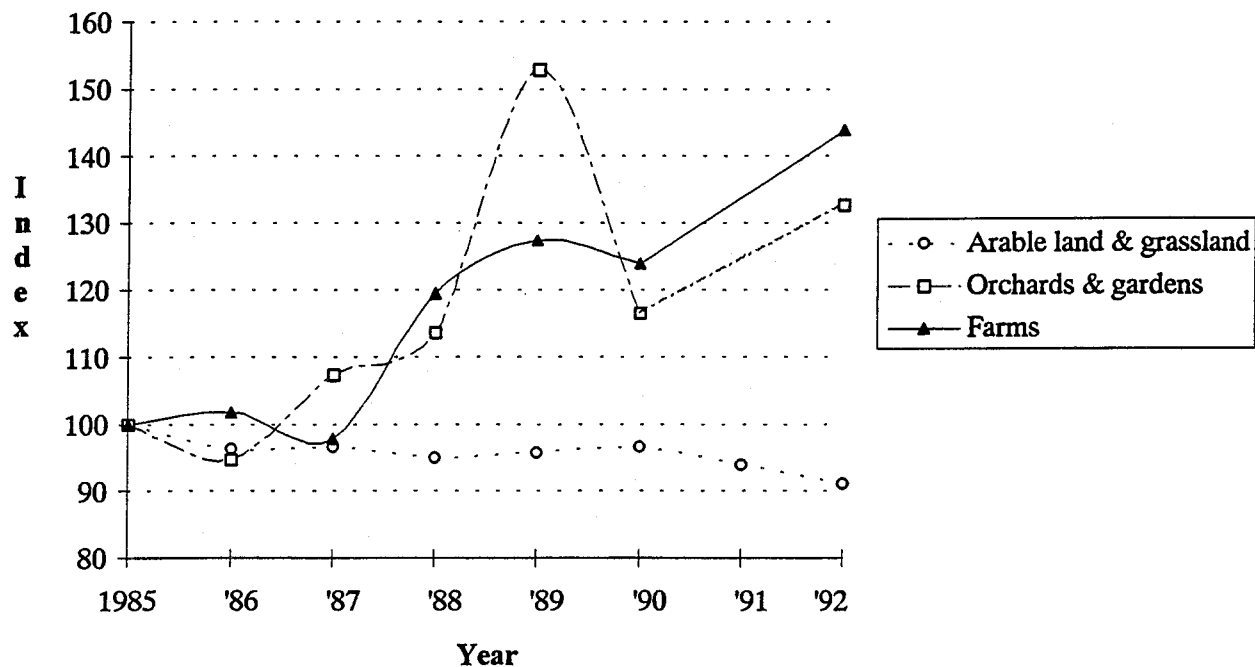


Figure A 4 Farmland Value Indexes in France (1985=100)

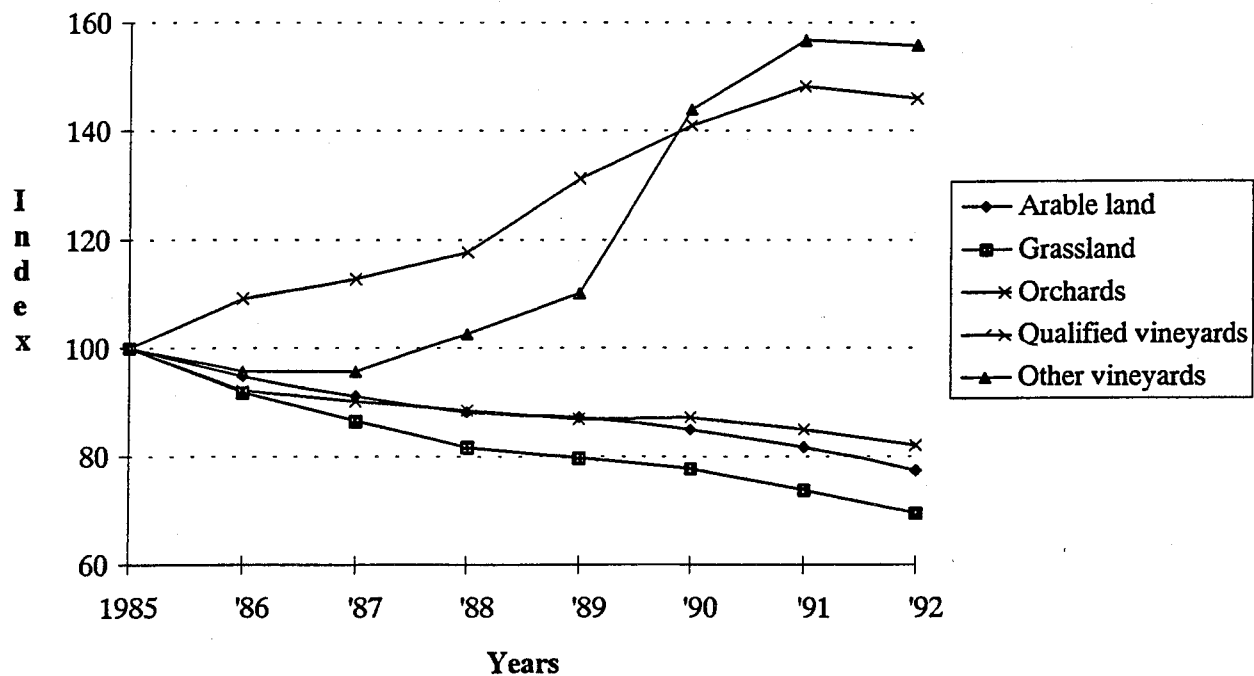


Figure A 5 Farmland Value Indexes in Spain (1985=100)

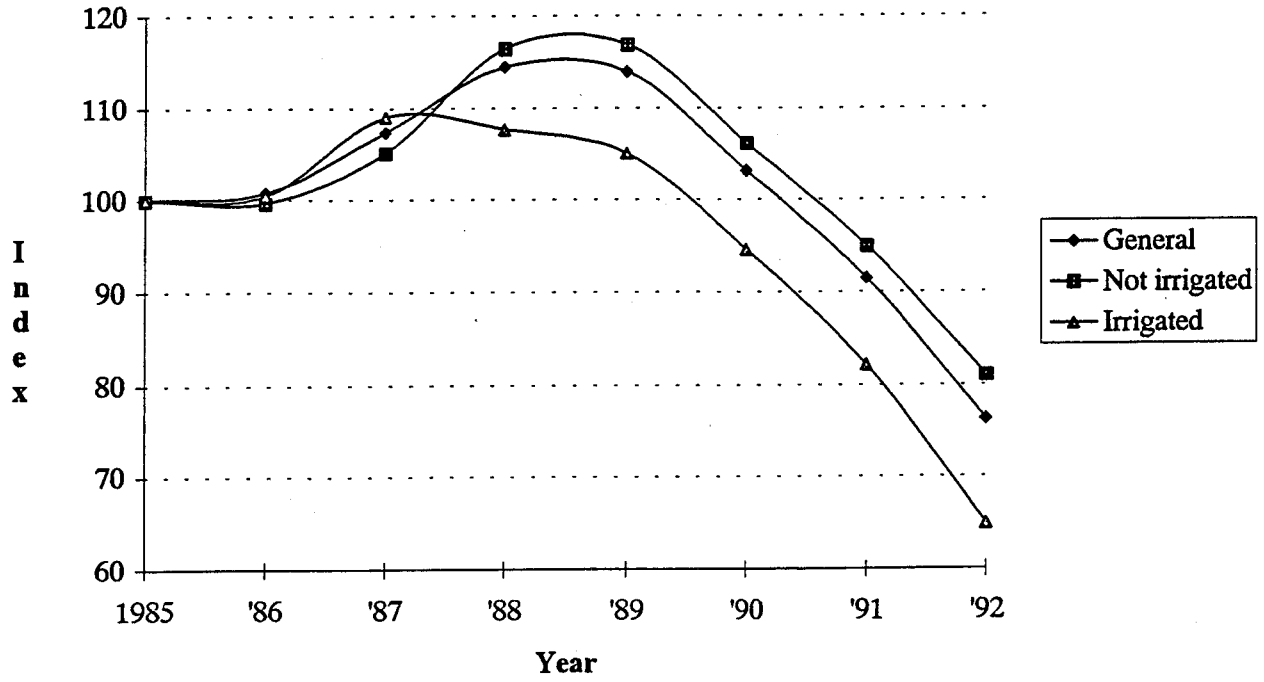


Figure A 6 Farmland Value Indexes in Italy (1985=100)

