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Volume I

First Annual Conference on
AGRICULTURAL POLICY AND THE ENVIRONMENT

Proceedings of a Conference Sponsored by

University of Minnesota
Center for International Food and Agricultural Policy

Agricultural Development Regional Agency (ESAV)

University of Padova

Motta di Livenza, Italy
June 19-23, 1989



Department of Agricultural and Applied Economics

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St. Paul, Minnesota 55108

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PROCEEDINGS OF THE FIRST ANNUAL CONFERENCE ON
AGRICULTURAL POLICY AND THE ENVIRONMENT

University of Minnesota
Agricultural Development Regional Agency
University of Padova

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FORWARD

The papers in this volume are the result of the First Annual Conference on Agricultural Policy and the Environment, held at Motta Di Livenza, Italy, June 19-23, 1989. This conference resulted from the collaboration of the University of Padova, University of Minnesota and the Ente di Sviluppo Agricolo (the Veneto Regional Development Authority) which provided the lovely setting for the conference. The University of Minnesota Center for International Food and Agricultural Policy has entered into a long-term agreement with these Italian counterpart institutions to study problems of land use, land values, agricultural production and their impact on environmental quality. In both countries, the agriculture/environment linkage is of growing importance.

The conference proceedings are divided into four volumes, according to the sessions presented.

In the fall of 1990, the Second Annual Conference on Agricultural Policy and the Environment will be held in Minnesota. We look forward to repaying the warmth and hospitality of our Italian counterparts. We would especially like to thank Danilo Agostini, Guiseppe Stellin, Cesare Dosi and the entire staff of the ESAV research station in Molta di Livenza, Veneto, and Judy Berdahl for her typing and editorial assistance.

C. Ford Runge, Director
Center for International Food and
Agricultural Policy

AGRICULTURAL POLICY AND THE ENVIRONMENT

by

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The theme of this first Conference held in the context of scientific cooperation between the University of Minnesota and the University of Padova is undoubtedly complex. However, the more than merely academic interest of the subjects to be discussed over the next few days will certainly provide a stimulus to our work. Though the discussion will concentrate on the methodological aspects connected with the study of the inter-relations between public intervention, agriculture and the environment, we should not ignore the fact that politicians and economic operators are showing growing interest in these problems, and more generally, there is a demand in society as a whole for a review of traditional agricultural policy instruments that are basically obsolete, inefficient and ineffective. Such interest certainly burdens us with responsibility, but it also provides us with the stimulus to link the concerns of the scientific investigator with the supply of proposals that may contribute to satisfying this demand.

A further motive of interest derives from the opportunity provided by this meeting to compare approaches and analyses

referring to contexts that are in many ways different from one another. However, despite the diversities existing at institutional level, in the structural characteristics of the agricultural sector, in the availability of resources and in the environmental problems faced in Europe and the US, our societies share a common problem which can be summarised by the need to define a new rationale for public intervention in agriculture in a context characterised, on the one hand, by an excess in the supply of agricultural commodities and, on the other hand, by an excess in the demand for environmental quality.

Achievement of the fundamental objective of providing adequate production levels makes traditional policy initiatives basically obsolete. The reform of agricultural policy, however, should not only be guided by the aim of reducing the excessive burden of financial support for producing goods which are no longer required, but should also stimulate agriculture to contribute to reducing the general gap experienced in our societies between the supply and demand for environmental quality.

The increasing importance attributed to environmental issues cannot be regarded as a transitory or emotional phenomenon. Rather, it represents an inevitable evolution in the mix of needs that accompanies economic growth and involves new responsibilities and opportunities for the agricultural sector and public policy-makers. Agriculture in fact directly or indirectly manages a large proportion of natural resources and this inevitably gives agricultural policy an important role to play in reallocating resources, taking account of the changes in priorities in our societies, particularly the greater importance attributed to environmental quality and conservation.

In this regard, it must inevitably be recognised that, like other productive sectors, agriculture may be prejudicial to the quality of the environment. Resistance to this idea may in some ways derive from an image of the agriculture-environment relationship which is certainly no longer realistic in the light of the developments that have taken

place in productive processes. In traditional farming, environmental conservation was a necessary condition for the farm's very survival. The result was conservationist action which it would in some ways be inappropriate to define in terms of environmental externalities in the sense that, on the one hand, such environmental effects were hardly appreciated by a community which was still faced with the problem of satisfying primary needs and was yet to experience the problem of environmental quality scarcity, and on the other hand, such action represented a productive 'input' for the farm itself. However, as technological evolution meant that productive performances were less dependent on environmental constraints -a phenomenon which nevertheless had positive implications which should not be forgotten nor underestimated- the automatic supply of environmental benefits was significantly reduced. In many cases not only was it no longer worthwhile to maintain a balanced relationship between agriculture and the natural environment, but overexploitation of the environment was actually in the interest of farmers. In an age in which society would certainly be more appreciative of positive environmental externalities deriving from agricultural activity, the opportunity costs of conservation are rising and farmers have even been encouraged to provide "environmental bads".

On the other hand, even if recognition of the negative externalities arising from agricultural activities will no longer allow farmers to enjoy privileged exemptions from pollution control policies, the agricultural sector's prerogative -with respect to other sectors- to transform itself from a generator of diseconomies to a generator of positive externalities may represent a new important opportunity for development in a context characterised by a growing willingness on society's behalf to pay for environmental goods and services and by substantial saturation, at least in the more developed economies, of the demand for agricultural commodities.

However, the possibility of achieving reallocation of resources in order to reduce the production of negative

environmental externalities and to encourage the supply of environmental goods by the agricultural sector, is subordinate to a fundamental reorientation of agricultural policy, namely, as far as the EEC is concerned, a reform of the Common Agricultural Policy. Such reorientation should start from explicit recognition of the fact that, although most of the changes in rural land use occurring during the last thirty years are unintentional by-products of policy initiatives designed to achieve other objectives, the CAP has significantly affected the changes in the amount, intensity and location of land used for the various agricultural activities. Since most of the environmental problems faced by the Community are related to such changes, it is legitimate to state that, rather than promoting more efficient use of natural resources, public intervention has often encouraged resource misallocation.

On the other hand, it should be pointed out that the importance of environmental issues has been formally recognised at Community level only very recently. In this respect, it could be claimed that policy-makers have not been quick enough to respond to the structural transformations in the mix of needs, and particularly to society's willingness to devote a larger share of resources to environmental goods and services. At the time when the CAP's objectives were established, great priority was given to the achievement of food security and to reducing the gap between agricultural and non-agricultural income. Both before and after achievement of at least the first objective, essentially uniform policy instruments -namely indiscriminate price-support- were used to pursue these goals. Apart from the intrasectorial distribution problems related to policy instruments which in fact have subsidised production rather than income, this uniform approach has also had negative environmental implications.

Many of the environmental problems related to intensification and specialisation of agricultural activities would probably be faced by the Community even with a lower price-support system. However, price distortions, both on the

input and the output side, have encouraged land use patterns that have tended to disregard the inherent environmental diversities existing among and within the member countries, and have hence encouraged inefficient use of natural resources within the Community.

It is unquestionable that a necessary condition for CAP reform is a rearrangement of public intervention taking account of the diversities existing within the Community. Apart from other advantages, particularly on the level of the effectiveness of public intervention in distributional terms, from the environmental point of view there is a lot to be gained from abandoning a uniform policy approach. The environmental problems faced by the Community vary from one country to another, and between different areas within each country, an effective and efficient discouragement of negative externalities along with encouragement of the provision of environmental goods will not be possible until such differences are explicitly recognised when designing policy initiatives.

As far as Veneto, and in some respects other Italian regions are concerned, it is important to take account of the mixed settlement patterns characterising the region's rural areas. The development model in the region is in many ways characterised, in terms of income, by a relatively widespread diffusion of part-time and mixed-income family farms, and in terms of settlements, by a co-presence of agricultural and industrial activities and residential areas.

While economic integration among different productive activities and the mix of different income sources in farm family units allows for a certain amount of flexibility and adaptation, this model of development nevertheless poses particular problems as far as agricultural and environmental issues are concerned.

In recent years particular emphasis was placed on phenomena of competition for land use, deriving from the fact that a plurality of demands were directed towards a scarce resource. From the point of view of the agricultural sector, this pattern of development involved subtraction of land that was

often highly productive as well as pressure on agricultural land prices which, in turn, placed financial pressure on farmers to use their land as intensively as possible, further discouraging the retention of 'unproductive' features that provided intangible environmental benefits.

Although the problem of competition for land use and the consequences of this in contributing to high land prices and production costs are still important issues for policy planning, in recent years there has been growing attention towards other forms of competition in the use of natural resources. In particular, alongside competition deriving from "direct" use of land resources, account is more often being taken of "indirect" land uses connected with the deliberate or undeliberate disposal of by-products and waste from productive activities and residential areas. Such disposal, which especially affects the quality of underground and surface water bodies, sees agriculture both in the role of receiver of negative externalities -for example, in the use of polluted water for irrigation or for watering animals- and as a creator of pollution, particularly with regard to organic and inorganic nutrient run-off and the release of chemicals.

The difficulties connected with agricultural pollution control are well-known. The point we wish to make here is that the costs of environmental regulation policies are likely to rise in a context like the Veneto region with its particular patterns of settlements and land use. Not only may the co-presence of different activities justify a raising of environmental standards, but the modality of achieving these standards may also be more costly with respect to contexts with different territorial uses.

However, if it is true that land use patterns such as those characterising the Veneto region often require stricter environmental regulations and consequent increases in agricultural production costs, they also provide opportunities for agriculture. In a context like this, there is likely to be greater willingness to pay for the supply of unmarketed environmental goods. To the extent that public

intervention may succeed in stimulating the agricultural sector's intrinsic capacity to transform itself from being a generator of negative externalities to being a generator of positive externalities, agriculture may benefit from settlement patterns which would otherwise merely contribute to raising the costs faced by agriculture in contributing to reduce the pressure exercised on the environment by patterns of territorial use which increase pollution control costs.

A REVIEW OF
AGRICULTURAL POLICY IN THE UNITED STATES
1989-90

by

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Livenza, June 1989.

American agricultural policy in the current and coming year will be dominated by these related considerations:

- (1) slow movement in the direction of "decoupling" price support from specific crops, known as "flexible base" adjustments;
- (2) questions over how to integrate domestic farm policy with the evolving GATT talks in the Uruguay Round;
- (3) the growing role of environmental policy considerations.

1. Movement Toward Decoupling - "Flexible Base"

While dramatic and total decoupling of support to farmers from specific crop bases is still a distant objective, important movements in this direction are occurring, largely due to a desire to eliminate distortions that have made corn (maize) production very attractive compared with soybean production, which has fallen steadily since 1979. The essential idea is a "flexible base", or "triple base" proposal, developed by House Agricultural Committee Member Charles Stegholm (D-Texas).¹

Before discussing the "flexible base", let me provide a brief overview of current agricultural policy program features in the U.S. There are currently 2.2 million farms in the U.S., although the bulk of U.S. production is accounted for by about 500,000-750,000 of them. 1989 farm program enrollment (which is voluntary for individual farmers) is shown in Table 1 by crop. Acreage signed into farm program in 1989 accounts for about 75% of the 220 million eligible base acres, which in

¹For a review of base acreage concepts see C. Ford Runge, "The American Experience with Set-Aside and Its Implications for the European Community". Fiera di Padova, May 1989.

turn accounts for about half of total U.S. cropland acres (roughly 450 million). Total U.S. farmland is roughly 1 billion acres.

In the Upper Midwest, the situation is shown in Table 2. In general, the amount of land set-aside has dropped considerably compared with 1988, in part because only 29.2 million acres (of wheat, corn, barley, oats, sorghum, rice, and cotton base) are signed up under price supports, compared with 34.2 million acres last year. In Minnesota, the drop has been from 82% of 3.5 million wheat acres in 1988 to 78% in 1989. Required wheat set-asides in 1989 have been reduced administratively by the Secretary of Agriculture to 5%.

Despite the general trend to less set-aside and more production, the real issue is over the cropping mix. It is generally held that the U.S. should increase the overall production of soybeans, in relation to corn, which has had a higher level of support. Soybean acres have fallen from a peak of 70.3 million acres in 1979 to 58.9 million in 1988. The "flexible base" proposal is intended to accomplish this shift from acres of heavily price-supported corn to soybeans.

Table 3 shows how the idea would work. Essentially, the proposal would give farmers the choice of planting any crop on 10-20 percent of their acreage. This is estimated to be equivalent to an effective 5% cut in target prices, on average, and would thus help meet budget and deficit reduction targets while moving incrementally toward decoupling.

Perhaps more important, the proposal would allow low-cost producers, especially in the Midwest, the greatest advantages, increasing the global competitive position of the U.S. This effect, together with the

environmental consequences of the change, are the second and third major development in American policy.

(2) Integrating Domestic Policy with GATT Talks

Following a temporary crisis in the GATT talks in Montreal in December 1988, the April meetings salvaged the talks, allowing them to move forward. Papers are to be tabled by December 1989, in the areas of aggregate measures of support, special and differential treatment for developing countries, tariffication, and sanitary and phytosanitary regulations. In the U.S. the basic policy question is how the 1990 Farm Bill will be interdigitated with the GATT talks final outcome, also scheduled for late 1990. The "flexible base" proposal fits into the negotiation strategy, insofar as it moves to reduce trade distorting subsidies by encouraging farmers to market rather than government encouragement to produce particular crops.

However, differences of opinion remain over how to relate the domestic and international negotiating strategy. Republican Minnesota congressman Arlon Stangeland, for example, is one of the members of the House Agriculture Committee who feels that the 1985 Farm Bill should be renewed until the GATT talks are settled in late 1990 or early 1991. This is after a 1990 Farm Bill would ordinarily be signed. Others such House Agricultural Committee chairman Kika de la Garza (D-Tex), have repeatedly said that they do not want to delay consideration of the bill, and that it should be completed on schedule. Secretary of Agriculture Yeutter wants to use the Farm Bill debate to push the GATT talks forward, while using GATT talks to reduce levels of U.S. price support. A notable example is the likely impact of a GATT panel ruling expected to go against US sugar

(and also dairy) programs which have been heavily protected. The interplay of trade talks and domestic U.S. farm policy is thus the second major policy theme, related to and consistent with more flexible US base acreage and reduced set-asides requirements.

(3) The Rise of Environmental Issues in US Agriculture

The 1985 Farm Bill, especially to Conservation title of the act providing for the Conservation Reserve Program, marks the entry of "green" interest groups into US agricultural policy. Since 1985, this influence has become stronger and stronger, as concerns over erosion, groundwater protection, and pesticide and herbicide use has increased. It is, in my view, one of the most important trends in agricultural policy, both in the US and in Europe. The "flexible base" proposal, for example, is defended in part on environmental grounds, since a more diversified crop mix is expected to be environmentally improving, because soybean fix nitrogen, requiring less fertilizer. In GATT, support to farmers that is "decoupled" from production of particular crops is defended on environmental, as well as trade grounds.

In a recent article², Phipps and Reichalderfer argue that "... current domestic commodity programs have tended to create agricultural production patterns that have led to environmental problems involving soil erosion, agricultural chemical use, and loss of wildlife habitat. Elimination, phase-out, or other modifications of current farm programs could reduce environmental problems enough to reduce the need for separate environmental legislation" (p. 14). The justification for less price

²"Farm Support and Environmental Quality at Odds?"; Resources, 95. Spring, 1989.

support, and set-asides targeted to environmentally vulnerable land, rather than for supply control, thus has strong environmental reasoning behind it.

The movement toward restricting agricultural practices in the name of environmental quality is operating at the state, as well as the national level. In Minnesota, a major groundwater protection bill passed the state legislature in May. The bill will impose increased fees on farmers to pay for groundwater cleanup. Those national and state trends are likely to become even stronger in the future, as the environmental issue continues to gain strength.

Conclusions

In general, the three trends I have described in American policy are mutually consistent and reinforcing: more flexible base requirements will improve trade competitiveness and environmental quality. That consistency suggests to me that these trends are not temporary, but part of a longer cycle of changes leading to reduced levels of price support, trade liberalization, and growing consciousness of environmental quality in the United States.

It will be interesting to see how these trends will affect, and be affected by, similar developments in Europe.

Table 1

1989 farm program enrollment

(acres in millions)

(Idled acreage includes ACR, 0/92 and 50/92)

	Total base acres	Farms	Percent	Enrolled Base acres	Percent	Idled acres
Corn.....	82.8	705,000	47%	66.1	79.8%	10.0
Wheat	82.5	435,000	38%	63.5	77.0%	9.47
Sorghum.....	16.3	228,000	53%	12.3	75.7%	2.82
Barley	12.4	82,000	33%	8.32	67.1%	2.10
Oats.....	7.6	44,000	7%	1.75	22.9%	0.266

Farmers will set aside nearly 18 percent of the 170 million grain, cotton and rice acres enrolled in the farm program this year. The acreage that's been signed up for farm programs in 1989 represents about 75 percent of the 220 million total eligible base acres. Enrollment last year averaged better than 90 percent of base acres.

Many more producers opted not to enroll this year, according to USDA, with only 47 percent of the 1.5 million eligible corn and 38 percent of the 1.13 million wheat farms enrolling their acres in the program.

About 77 percent of the 201 million-acre wheat and feed grain base is enrolled this year. Of that, the largest share, or 66 million acres, is corn, with wheat a close second at 63.5 million acres.

Nearly 25 million of the enrolled wheat and feed acres have been idled this year, down from last year's total of close to 50 million and 1987's 52 million acres. The total wheat and feed grain base this year is about 5 million acres less than the base last year.

For a look at program participation in Montana, Minnesota and the Dakotas, see page 40.

Source: AgWeek, Vol. IV, No. 44, May 29, 1989, p. 7.

Table 2

1989 farm program enrollment

(acres in thousands)

(Idled acreage includes ACR, 0/92 and 50/92)

	MINNESOTA	MONTANA	N. DAKOTA	S. DAKOTA
WHEAT				
Total base.....	3,451	6,436	12,282	4,710
Total enrolled.....	2,696	5,481	11,160	4,090
Set aside.....	255	538	1,080	389
Idled 0/92.....	21.7	216	116	151
Total idled.....	276	754	1,196	540
CORN				
Total base.....	7,138	81.4	1,114	4,059
Total enrolled.....	6,264	35.8	1,001	3,633
Set aside.....	596	3.28	96.4	349
Idled 0/92.....	166	6.19	69.5	120
Total idled.....	762	9.47	166	469
OATS				
Total base.....	839	155	915	1,485
Total enrolled.....	77.9	189	760	483
Set aside.....	3.62	8.15	31.5	20.4
Idled 0/92.....	1.9	24.5	40	39.1
Total idled.....	5.52	32.7	71.5	59.5
BARLEY				
Total base.....	1,052	2,456	3,443	960
Total enrolled.....	692	1,926	2,858	623
Set aside.....	62.8	185	281	58.8
Idled 0/92.....	8.33	389	132	33.2
Total idled.....	71.2	574	413	92
SORGHUM				
Total base.....	.88	n/a	7.65	383
Total enrolled.....	.543	n/a	6.28	340
Set aside.....	.49	n/a	.446	28.9
Idled 0/92.....	.53	n/a	1.24	56.4
Total idled.....	.102	n/a	1.68	85.2

Source: USDA

Source: AgWeek, Vol. IV, No. 44, May 29, 1989, p. 40.

Table 3

How flexible base might work

The following examples show how the new "flexible base" proposal in Congress, which is also called "triple base, would affect a farmer's 300 base acres and his subsidies under the farm program.

TRIPLE BASE:	FIRST BASE		SECOND BASE			THIRD BASE
Crop	Base Acreage	Set-aside	Permitted Acres	"Payment Reduction"	Flexible Acres*	Acres eligible for subsidies
Wheat ----- How numbers are figured:	300 acres ----- Base used for this example	10 percent ----- Set by USDA	270 acres ----- 300 base acres minus 10% setaside	10 percent ----- Set by USDA within range set by Congress	27 acres ----- 10 percent of permitted acres	243 acres ----- Permitted acres minus flexible acres
Corn ----- How numbers are figured:	300 acres ----- Base used for this example	15 percent ----- Set by USDA	255 acres ----- 300 base acres minus 15% setaside	20 percent ----- Set by USDA within range set by Congress	51 acres ----- 20 percent of permitted acres	204 acres ----- Permitted acres minus flexible acres
* Flexible acres may be planted to any crop — program or nonprogram — without losing base history, but subsidies will not be paid on program crops.						

Source: AgWeek, Vol. IV, No. 44, May 29, 1989, p. 25.

ITALIAN AGRICULTURE, CAP AND THE ENVIRONMENT

by

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Abstract

Section 1 of the present paper describes the main policy instruments characterising the Common Agricultural Policy (CAP) and Italy's position within the EEC as far as the agricultural sector is concerned. The figures presented show an overall and substantial weakness in Italian agriculture.

Italy's chances of reducing its foreign trade deficit in agricultural commodities are certainly weakened by concern at Community level about discouraging agricultural production in order to deal with increasing surpluses and the growing pressure of agricultural expenses on the Community budget. Such concern is reflected in the policy initiatives with which policy makers have attempted to restore a certain degree of inelasticity in the agricultural product demand function as well as in the recently introduced set-aside programme.

As far as the relationship between CAP and the environment is concerned (section 2), it is emphasised that at the time when CAP goals were established environmental issues were extremely marginal, and it is only very recently that this view has begun to change. The emphasis recently placed in official statements on the need for reorienting agricultural policy in order to improve the allocation of natural resources within the sector is to be welcomed. However, there is a risk that the emphasis placed on environmental issues is merely a 'cosmetic' for covering over other objectives, and in any case one can justifiably wonder whether European policy-makers have yet learned from past experience about the risks of ineffectiveness and inefficiency inherent in an approach which applies a limited number of policy instruments in order to deal with a plurality of objectives.

In revising the CAP, agricultural policy-makers should be aware that they face a number of 'second-best theorem' problems. Caution in designing new policy instruments is called for by the simultaneous presence of different types of distortions, suggesting that there is no single panacea for improving resource allocation within European agriculture, and that there is a need for articulated policy revision, taking account of the differences in agricultural structures and environmental conditions in Europe.

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1. Italian Agriculture and CAP

According to the political philosophy prevailing at the time the six founding members of the European Economic Community¹ (EEC) signed the Treaty of Rome in 1957, economic integration was to be achieved under the banner of free competition through a gradual dismantling of customs barriers between Member States. With minimal external customs duties, the EEC was not intended to be a closed world but rather a natural bridge between East and West opened onto international markets.

In the light of these ideas, it seemed also possible to reconcile the different, often contradictory objectives laid down for the Common Agricultural Policy (CAP) in art. 39 of the Treaty, such as guaranteeing "... a fair *standard of living for the agricultural community, in particular by increasing individual earnings of persons engaged in agriculture*", and ensuring that "...*supplies reach consumers at reasonable prices*". Only afterwards was it realised that wide differences existed between the productive structures of the Member Countries and that economic policies as well as legal and fiscal regulations were necessarily affected by these different national situations. Moreover, because of consecutive economic crises, the original free trade ideology began to clash with the increasingly felt need for an economic planning policy. Such policy, though decided and agreed upon at Community level, is greatly influenced by the different political and economic 'weights' and negotiating abilities of those who take part in devising it.

Having said this, the basic principles which have guided the CAP up to now are as follows:

- a) market unity, i.e. free movement of goods within the Community at basically similar prices in all the

Member Countries (the only differences being produced by transportation costs from surpluses to deficit areas);

- b) financial solidarity, i.e. expenses incurred in the CAP should be financed by the Community which is also endowed with its own resources; the Community budget consists of customs levies and duties on goods imported from non-Member Countries and a share of the Value Added Tax paid to the EEC by each Member Country;
- c) Community preference, i.e., in conditions of equal quality, Community products should be preferred to products from non-Member Countries. As there were great differences in the productive situations of the Member Countries, in order to achieve the objective of market unity without penalising the agricultures of countries with higher production costs, common prices tended to be fixed close to the higher levels, thus encouraging production in those countries which had lower prices before Community integration.

The prices of agricultural products are held at a level called the target or guide price. In order to cover the differences between higher internal prices and lower international prices, making it possible to export agricultural goods, the Community grants export subsidies. Furthermore, the Community grants production subsidies or introduces an intervention mechanism based on variable levies, in order to support the competitiveness of European food industries which have to buy raw materials at prices that are higher than international market prices.

The costs of agricultural price support are basically articulated as follows:

- a) costs charged to the consumer who buys food at a higher price than he would pay if he were to buy at international market prices;

- b) costs charged to the national budget of Member Countries. In this respect, article 92 of the Treaty of Rome states that national aids distorting or threatening to distort free competition between Member Countries are incompatible with the Common Market. National expenditure largely concerns social security schemes for farmers and research and financing of infrastructures (roads, dams, irrigation systems, etc.);
- c) costs charged to the Community budget.

Community budgetary expenditure on the CAP have risen in an astonishing manner, reaching 28 billion ECU in 1988. In 1988 over 68% of the Community's total budgetary resources were absorbed by expenditure on the CAP; more than 94% of the resources devoted to agricultural policy were devoted to price policy under the FEOGA guarantee section². In other words, on the one hand, the resources absorbed by the CAP leave limited funds for regional development, research and industrial promotion and, on the other hand, the agricultural price support policy leaves few resources for a structural agricultural policy which is particularly needed by countries like Italy where the agricultural sector shows many signs of structural weakness.

The Italian agricultural sector, whose contribution to the net national product amounts to 4.2% and whose labour force represents 10.5% of total employment (see table 1 for comparison with other Member Countries) is characterised, with respect to other Member Countries, by high production costs which are partly attributable to geographical characteristics (most of the land is hilly or mountainous and the best farmland, located in the Po valley and some restricted flat and coastal areas in central and southern Italy, are often subject to shortages or overabundance of water) and are partly related to structural problems. One of the most

significant aspects of the structure of Italian agriculture is the 'pulverization' of the farms: the average Italian farm has a utilized agricultural area of less than 6 ha, as compared to 15 ha in the Netherlands, 16 ha in West Germany, 27 ha in France and 65 ha in the United Kingdom; only Greece and Portugal show lower figures.

Table 2 shows the values regarding agricultural income over the period 1983-87 in the different Member Countries in relation to the Community average; a notable gap can be noted between the Italian levels and those of the other countries (with the exceptions of Greece and Ireland).

Although the EEC as a whole firstly became self-sufficient in most agricultural products and then developed surpluses, Italy is only able to export surpluses of rice, fresh fruits and vegetables, citrus fruits and wine, while a large proportion of staple products (wheat, meat, dairy products and sugar) are still imported; table 3 shows a very telling picture of self-supply levels in 1980/81 and 1985/86 in Italy and the EEC, respectively. As far as food and agricultural commodities is concerned, not only does the Italian foreign trade balance show a notable deficit (in 1986 it exceeded 12.583 billion lire, see table 4), but the difference between the Italian agricultural food trade balance and the EEC one is growing wider.

TABLE 1
Percentage of net agricultural added value at factor cost with respect to the total net internal product at factor cost(1) and percentage of the agricultural labour force with respect to total employment(2)-1987

	(1)	(2)
Belgium	2.0	2.8
Denmark	3.4	6.5
West Germany	1.1	5.2
Greece	16.7	27.0
Spain	5.0	15.1
France	3.3	7.1
Ireland	9.4	15.4
Italy	4.2	10.7
Luxembourg	2.2	3.7
Netherlands	3.9	4.7
Portugal	-	22.2
United Kingdom	1.5	2.4
EUR 11	2.9	-
EUR 12	-	8.0

source: [1, p.76]

TABLE 2
Real net added value at factor cost per annual labour unit.
Average 1983-87. EUR 11 = 100, base ECU

Belgium	229.2
Denmark	204.7
West Germany	102.5
Greece	63.4
Spain	86.7
France	124.2
Ireland	60.2
Italy	74.8
Luxembourg	137.0
Netherlands	246.6
Portugal	-
United Kingdom	147.4

source: [1, p.64]

TABLE 3

Degree of self-supply of some agricultural products
Self-sufficiency=100

	Italy			EUR10		EUR12 ¹	
	1980/81	1985/6	1980/81	1985/6	1980/81	1985/86	
Wheat	81	80	118	132	123 *	126	
Maize	65	90	62	94	61 *	82	
Rice	212	225	76	72	76 *	79	
Sugar	93	90	125	135	135 *	129	
Fresh vegetables	120	124	99	101	102	107	
Potatoes	100	92	101	103	100 *	102	
Fresh fruits	128	127	83	83	87	87	
Citrus fruits	114	113	44	47	72	75	
Wine	137	121	105	102	104	105	
Butter	62 **	59***	119**	133***	-	-	
Eggs	95	91	102	107	-	-	
Meat	76 **	74	100***	102***	-	102***	
Oils and fats	55 **	52***	53***	59***	57	63***	

(1) Spain and Portugal included

*	1981/82	**	1980
***	1984	***	1982
*****	1986	*****	1985
*****	1983		

Source: [2, p.165]

TABLE 4
Italian foreign trade balance - 1986
(in billions of lire)

AGRICULTURAL-FOOD PRODUCTS	(-)12,583
- Cereals	(-) 2,068
- Fruit and vegetables	1,506
- Livestock and meat	(-) 7,306
- Sugar	(-) 245
- Wine	985
- Other	(-) 5,455
NON FOOD PRODUCTS	8,861
- Oil	(-)12,438
- Others	21,299
TOTAL	(-) 3,722

source [3]

On the whole, Italian agriculture benefits from a lower level of protectionism than other Member Countries. The EEC has boosted productions like cereals, dairy products and sugar for which price-supporting measures are easier to apply and which are typical products of Central Europe. Conversely, fruit and vegetables -typically Mediterranean products- benefit from lower levels of protection. Intervention prices (called "purchase prices" in the case of fruit and vegetables) are fixed between 40% and 70% of the basic price (i.e. the indicative market price), whereas the intervention price for cereals, meat and dairy products is fixed at 90-95% of the basic price. In addition, it is harder to respect the Community preference clause in the fruit and vegetable sector, since quality here is of great importance and the

demand for these products has a high level of substitution elasticity. Furthermore, the EEC's policy of bilateral agreements with Mediterranean countries based on preferential customs duties, rather than the Common customs tariffs, has weakened Italy's privileged position laid down by the Treaty of Rome. A trade policy tending towards 'free trade' for some products while strictly protecting others leads to a natural shift of resources towards protected production and a progressive economic decline of non-protected products. Thus the gap between the development rates of the different agricultural areas widens to the detriment of the southern Italian regions whose agricultural products are confronted with far tougher competition than the cereal and meat produce typical of the northern and central EEC countries as well as, to some extent, the agricultural areas of northern Italy, particularly in the Po valley.

Because of the structural weakness of Italian agriculture as a whole, Italy has always upheld the need for integrating price policy with structural policy. The structural policy introduced in the Community in 1972 has achieved far from satisfactory results, basically due to bureaucratic and administrative problems and insufficient budgetary resources which are mainly used for market and price intervention. With regard to Italy in particular, it should be noted that the 1972 Community Directive was only applied in 1975, when inflation and unfavourable economic trends made it somewhat ineffective; the belated application of the Directive and its limited effectiveness were due to bureaucratic problems which, unlike in other EEC countries, made it difficult to benefit from the proposed measures. With regard to this, it should be pointed out that, in general terms, the effectiveness of any structural policy decided at Community level in any case depends on the capacity of the Member States to put it into practice and in this respect, the state of the public administration puts

Italy in a position of relative weakness with respect to the majority of Community countries.

Italy's possibilities of reducing its foreign trade deficit in agricultural products and of developing agricultural production are certainly complicated by the concern at Community level about discouraging its agricultural production in order to deal with increasing surpluses and the growing pressure of agricultural expenses on the Community budget. In recent years the EEC was concerned above all with keeping agricultural expenditure within the budgetary limits. In order to make farmers more aware of the saturation in the markets and to reduce the uncertainties concerning the Community's budgetary requirements due to variations in agricultural production, the concept of budget stabilizers was introduced for surplus products and for those products for which notable increases in production are predicted. In other words, a specific threshold is allotted to each product, corresponding to the maximum production level for which the Community ensures a guaranteed price. The guarantee limit system, first introduced for sugar, has been extended to other agricultural products (see table 5)³.

The measures applied in order to encourage producers to respect the quotas indicated by the Community vary according to the product. For many products the so-called co-responsibility levy is applied; in the case of milk, for example, if the producer exceeds the assigned production quotas, he is obliged to pay a co-responsibility level equal to 100% of the indicative price if the product is delivered to dairies, and 75% of the indicative price if it is sold directly to the public. Price reductions are applied for some other products, rather than the co-responsibility levy; with oil seeds, for example, for each percentage unit exceeding the maximum guaranteed quota, the guarantee price for products sold during the year following the excessive

production, will be reduced by 0.45% ⁴. In the case of cereals, price reduction by means of the co-responsibility levy is brought forward to the production year, but is not proportional to the product in excess of the established threshold.

TABLE 5
Guarantee thresholds in 1988-89
(mill. tons)

Milk	95.340
Cereals	160.000
Colza and rape	
- EUR 10	4.500
- Spain	0.129
- Portugal	0.013
Sunflowers	
- EUR 10	2.000
- Spain	1.411
- Portugal	0.063
Soya	1.300
Olive oil	1.350
Peas, broad beans and haricot beans	3.500
Cotton	0.752
Processed tomatoes	
- France, Italy, Greece, Spain, Portugal	6.061
Sugar	12.828
Tobacco	0.385

source: [4, p.30-32]

Another measure for reorientating agricultural production to market requirements is the 'set-aside programme' recently introduced by Community Regulation 1094/88. The programme provides incentives for non-farming of arable land and for the reconversion of cultivated land producing crop surpluses to non-surplus productions and afforestation. In particular, the concession of aid is subordinated to use of the land for the following purposes: afforestation, use for non-

agricultural purposes (such as on-farm tourism), fallow land with the possibility of rotation, creation of pastures for extensive rearing, cultivation of lentils, chick peas and vetch. The premium provided for farmers who do not cultivate at least 20% of their land normally sown with various crops varies from a minimum of 100 ECU to a maximum of 600 ECU per ha, according to the location of the land and the purposes for which the fields included in the programme are used.

As far as Italy is concerned, the following annual premiums have been laid down per hectare:

- in the plains of the Po valley	550 ECU
- in other plains	440
- in not disadvantaged hills	400
- in disadvantaged hills and mountains	380

These sums are reduced by 40% if the land is used for pastures or for growing leguminous plants. According to data supplied by the Ministry of Agriculture, 11,530 applications were presented regarding a total of approx. 190,000 hectares, of which 160,000 were admissible for contributions. In tables 6 and 7 the applications for set-aside are presented, according to the location of the land and the purpose for which it is to be used. These data show, on the one hand, that there were few applications in areas characterised by highly productive land, particularly in the Po valley, and on the other hand, there was a prevalence of applications for leaving the land entirely fallow and a small number of applications for reafforestation, non-agricultural uses and cultivation of alternative crops, namely leguminous plants.

TABLE 6**Location of the land to be set-aside (applications)**

Po valley plain	5,384 ha
Other plains	22,554
Non-disadvantaged hills	39,553
Disadvantaged hills	65,384
Mountain areas	32,331
National total	166,101

source: Ministry of Agriculture and Forestry,
National Agricultural Information Service

TABLE 7**Percentages of proposed land uses**

Afforestation	3.38
Non-agricultural purposes	0.86
Fallow land	45.73
Fallow land with rotation	26.62
Pastures	22.20
Lentils, chick peas and vetch	1.21

source: Ministry of Agriculture and Forestry,
National Agricultural Information Service

2. CAP and the Environment

On examining the Treaty of Rome and particularly the section dealing with the CAP goals, an environmental objective is noticeable by its absence. At the time when the objectives of the CAP were drawn up, agricultural expansion - and expansion of production in general - were automatically accepted as desirable goals, while environmental issues were considered to be extremely marginal.

It is only very recently that this view has begun to change. For instance, the general need for environmental policy was only formally recognised at the 1972 summit in Paris, and the following year the Council of Ministers established a number of objectives and general principles for Community activity. The gradual process whereby the importance of environmental issues was recognised culminated with the inclusion of a number of fundamental guidelines for the formulation of Community policies in the Single European Act, the most important amendment to the Treaty of Rome since it was signed thirty years ago. Of particular interest is the statement included in art. 25 that *"...environmental protection requirements shall be a component of the Community's other policies"* [5].

European agricultural policy-makers have been quick to respond [6, 7, 8], but since one can legitimately imagine that they have not all become ardent environmentalists, there is a justifiable fear that they have seen environmental issues as a vehicle for contributing to the solution of other problems. We shall return later in the paper to the question of some of the possible risks connected with the combination of environmental goals with other types of objectives (such as alleviation of surpluses and budgetary problems, and income support issues). The important point to make here is the relative novelty of including environmental concerns in the

formulation of Community policies and of agricultural policies in particular.

The extent to which the CAP has affected the course of agricultural development and the most important structural changes from the environmental point of view, such as intensification and specialisation (at both regional and farm levels) is difficult to assess, as this can only be evaluated in relation to alternative scenarios, like, say, the 'free market', but we have no way of knowing what free-market prices, and hence structural patterns, would be like if the EEC as a whole decided to abandon its support mechanism. In this respect, it would not be appropriate to refer to current world market prices as free-market indicators, as they are affected by the general tendency in industrialised countries to maintain artificially high agricultural prices.

Even in a complete laissez-faire scenario, farmers would certainly be affected by technical changes and the European Community would experience 'overuse of the environment', due to the basic failure of market mechanisms to create efficient use of natural resources. However, one can legitimately claim that overuse of natural resources has been influenced by price policies which have had a critical influence on the pace and extent of technological changes adopted by farmers. In other words, rather than promoting a more efficient use of natural resources, public intervention has often added further distortions, by so doing worsening resource misallocation.

Most of the currently experienced environmental problems concerning agriculture are related to the intensification and specialisation of agricultural activities. One of the consequences of intensification and specialisation, encouraged by distortions in output-input, output-output and input-input price relationships, has been *"... the breaking up of the self-supporting*

resource cycle within individual farms which had characterised European agriculture well into the 1950's" [9, p.34]. An example of this "breaking up" and the related implications for environmental quality is livestock rearing. In traditional mixed farming, the manure produced is part of a self-sustaining cycle; in intensive livestock farms which may operate as isolated activities, the organic manure produced is excessive with respect to the amount of land at the farm's disposal, hence manure which would normally be useful becomes refuse to be eliminated, while other farms use large quantities of chemical fertilizers. The view of manure as a waste to be disposed of somehow is due to the transportation costs related to the regional concentration of agricultural activities, and also to the output-input price ratios which encourage the use of chemical fertilizers and disincentivate at least partial integration of chemical nutrients with organic material. As far as farming is concerned, the disposal of livestock excreta, together with the use of chemical inputs, is one of the main areas of environmental concern in Europe, with regard to their impact on the quality of surface and underground water. In many European countries there is growing alarm concerning nutrient-enrichment and the spread of algae in rivers, lakes and coastal waters, as well as excessive nitrate contents in groundwater. Nitrates, along with other forms of contamination of groundwaters (due in particular to the widespread use of pesticides), are of particular concern, as they effect important sources of drinking water in Europe⁵ .

The environmental implications arising from the break up of the self-supporting resource cycle within farms would not justify a policy approach leading back to the 'golden age' of traditional farming; this would not only be impractical, but would also be undesirable for society as a whole. Rather, these implications suggest that the emergence of structural transformations should have

called for policy measures to deal with associated negative environmental externalities. In this respect, with a very exceptions, there have not been serious attempts to deal with these problems at either national or Community level, and only very recently proposals have been made at EC level. However, there is a risk that such proposals -see for example the recent Commission's proposal regarding Directive on control of nitrate pollution [11]- would lose their effectiveness due to the intention of adopting a complex regulatory framework - which would be difficult to apply from the administrative point of view- in order to obtain short-term solutions to problems that have accumulated over the years.

A further implication of the CAP which has involved environmental consequences is the regional concentration of agricultural activities. Again in this respect, livestock rearing can be taken as an example of the implications of price policy on the pattern of agricultural development. "... As high prices have been guaranteed for domestic feed grain, there is an incentive to utilise much cheaper imported substitutes [...]. This has further encouraged a tendency towards concentration of poultry, pig and also increasingly, milk production in factory farms which tend to be situated in coastal regions" [9, p.37] ⁶ .

As von Meyer notes, "... structural change did not occur in a uniform way in all the locations. On the contrary, it has led to an increasingly pronounced accentuation of interregional differences...Whereas in less favoured areas farmland has been abandoned and areas left fallow, in other areas production has been intensified and increased to such an extent that the limits which can be tolerated by environmental policy have been exceeded" [9, p.34]. In other words, while in many geographical contexts the CAP has not provided incentives or has even discouraged good environmental practices and the provision of positive environmental

externalities, in other regions it has encouraged the adoption of practices leading to increases in negative environmental externalities.

Apart from the environmental implications of regional concentration, it should be noted that the CAP has largely failed to achieve the goal of reducing interregional differences within the Community. More generally, since price support policies effectively subsidise production rather than farm incomes per se, there has been a widening of the gap between the income of large farmers, particularly those operating in the wealthier agricultural regions, and the earnings of small farmers. There has thus been a worsening of intrasectorial income distribution, a result which contrasts with some of the explicit objectives assigned to the CAP. In fact, the objective of reducing the gap between average agricultural and non-agricultural income has been pursued by means of policy instruments that are costly not only in terms of budgetary resources but also in terms of intrasectorial equity.

Having said this, what can be added about the future prospects for the CAP? As far as the environment is concerned, a reading of the official Community documents regarding proposals for CAP reform allow one to be reasonably optimistic, although some statements and decisions suggest that European policy-makers have yet to learn from past experience regarding the risks of inefficiency and ineffectiveness inherent in an approach which attempts to deal with a plurality of objectives through a limited number of policy instruments.

On the one hand, one has to recognise that there has been growing awareness of the need to take environmental conservation into account when designing agricultural policy. This awareness is reflected in many statements included in official documents prepared by the Commission of European Communities.

First of all, the Commission has explicitly recognised that "... agriculture should be considered to be an economic sector which, like other sectors that are potentially damaging to the environment, should be subjected to restraints and public controls in order to avoid environmental deterioration. In general, the principle that 'the polluter pays' should be applied, and it would not be right for farmers to claim compensation from public authorities if legislation of this kind were enforced" [6, p.50]. In other words, farmers should no longer enjoy privileged exemptions from pollution control policies.

Secondly, there is recognition of the need to subordinate support for agriculture to new social objectives, and in particular to environmental conservation. As the Commission stated, "... subsidies to agriculture are usually justified by objectives of social policy,... by the unstable nature of the agricultural markets and by the application of article 39 of the Treaty of Rome. They are also justified however by environmental considerations" [5, p.12]. "... To the extent to which [agriculture and forestry] will provide a necessary 'public good', the concession of aids in the form of compensation and incentives will be justified for environmental objectives which may even be of a permanent nature" [8, p.76].

Thirdly, after an era characterised by the adoption of a uniform approach to policies designed to deal with a variety of agricultural structural conditions, there is increasing recognition of the need to adopt substantial flexibility in designing policy instruments. Since environmental problems differ from region to region, and often from locality to locality, there is a lot to be gained -also from the point of view of environmental policy- from agricultural policy which takes account of regional differentiation. As the Commission noted, "...a functional environmental and agricultural policy for

rural areas in the Community should take complete account of the notable diversities of European agriculture and the very different ecological problems posed for the environment and the social and economic situation" [7, p.51].

From an environmental point of view, these novel elements -most of which, however, are still in the form of declarations of intent- justify a certain amount of optimism with regard to the future developments of the CAP. However, there is a risk that the emphasis recently placed on environmental issues is merely a "cosmetic" for covering over other objectives. Whether or not environmental considerations are being used as excuses for achieving other objectives, the question to be answered is whether there exists a degree of correlation between the environmental and non-environmental benefits of a particular policy decision.

In recent years European agricultural policy-makers have been faced with two problems: on the one hand, the increasing pressure of agricultural expenses, and particularly expenses related to price-support policies, on the Community budget, and on the other hand, the need to find a rationale which would provide a political justification for supporting agriculture in a world in which the increasing accumulation of costly surpluses means that expansion of agricultural production is no longer a desirable goal.

The former concern is reflected in the adoption of policy measures -particularly the guarantee threshold system- which have attempted to restore a certain 'degree of inelasticity' in the agricultural product demand functions. More generally, there is a tendency within the Community to reduce the level of protectionism in order to achieve a gradual reduction of production in the surplus sectors. Since, as many authors state, "... the simple most important change from the viewpoint of conservation, and the starting point for the formulation

of a more rational and socially acceptable agricultural policy, would be a reduction in the level of agricultural protection" [12, p.138], the Community's tendency toward reducing the level of protectionism should also be welcomed on environmental grounds. However, even if we discard the perverse supply response argument -which is likely to hold in the short rather than the long term- often advocated to suggest that farmers could intensify production in the face of falling prices, there are a number of arguments which suggest that reducing price support per se will not be a panacea for all the environmental problems related to agriculture. As Lowe et al. note, "... agriculture and forestry are so much the creatures ... of complex policy mechanisms that reform must always be sought at a number of different levels. Undue attention to any single mechanism, such as price-support ... is unlikely to produce the fundamental reorientation that is required and, if pursued in isolation, could have unwelcome side-effects for the well-being of the countryside" [13, p.303]. A generalised and uniform squeezing of commodity prices is likely to leave intensive agriculture remunerative for many years in key regions where negative environmental externalities are more pervasive; on the other hand, this may reduce the incentives for good environmental practices and prejudice the survival of farms in those areas where agriculture, by its presence alone, contributes to environmental conservation.

The risks inherent in a generalised reduction in price supports do not deny the benefits that can be obtained in this manner and, more generally, by means of policy instruments (output and/or input taxation and subsidisation) affecting current output-input price ratios in order to induce a more rational use of resources and to encourage the development of less environmentally damaging technologies. Rather, they suggest the need for differentiation according to

regional and farm characteristics, thus targeting the revision of price-support policies according to environmental and/or social objectives. Differentiation according to regional criteria is already partly being practised (for example there is no co-responsibility levy for milk production in mountain areas) and it is hoped that this approach will be pursued in the future.

As mentioned above, a further problem faced by the agricultural policy-maker is that of justifying agricultural income support in a context in which at least some of the arguments put forward in the past, such as encouraging production in order to reach self-sufficiency, are no longer valid, at least at Community level. In this respect, it has been observed that environmental conservation "... could provide the necessary justification for a switch from production to income and employment support which would avoid the charge of 'farmers getting something for nothing'" [13, p.311].

It should be noted, however, that environmental policy cannot be generally regarded as a vehicle for pursuing distributional objectives. It is certainly true that the supply of public goods by farmers has to be encouraged through financial incentives, and there is a need to emphasise explicitly that the rationale of agricultural support often has to be related to the supply of unmarketable environmental goods. However, environmental remuneration should primarily be regarded as an allocative rather than a distributional measure.

In many contexts, like the poor mountain areas, support for agriculture is justifiable not only on grounds of equity, but also for environmental reasons, since the maintenance of farms in these locations contributes *per se* to conservation. However, the existence of a positive correlation between the environmental and distributional benefits of supporting (or discouraging) agricultural activities should not be regarded as a general phenomenon.

In the case of negative externalities, such as those arising from nutrient and chemical releases, there may not be a correlation between environmental and distributional goals. Since the degree of pollution from agricultural non-point sources depends significantly on topographical and geographical characteristics, and since environmental damage depends on the location of the pollutant source with respect to the water body receiving it, there is no a priori reason to believe that there is an obvious general correlation between, say, the activities of rich or poor farmers and environmental damage. In these cases a clear distinction should be made between policy measures aimed at achieving allocational goals, namely reducing overexploitation of natural resources, and distributional policy measures.

In some ways the above considerations are significant with respect to evaluation of the set-aside programme recently introduced by the Community.

The main objective assigned to the programme is to reduce production in certain surplus sectors. Despite certain claims on this subject, the programme does not have environmental aims. The reference in the EEC Regulation to the need for the beneficiary of the premium related to the ceasing of cultivation to commit himself to "... *maintenance of good agronomic conditions, environmental conservation and maintenance of the rural area*" [14, article 1] simply suggests that the legislator intends to avoid environmental incompatibility of the measures applied at Community level, as prescribed in article 25 of the afore-mentioned Single European Act. From this point of view, strictly speaking, it would not be appropriate to evaluate the set-aside programme's effectiveness in the light of environmental objectives which were not explicitly assigned to it. However, in evaluating the programme, it can nevertheless be said that the financial resources assigned to it could have

been used more efficiently if the programme had included explicitly environmental objectives.

This view derives from the fact that the objectives of reducing production will probably not be achieved, and in any case contraction of production will be achieved at unjustifiable costs. On this subject various authors have expressed arguments criticising the programme, pointing out in particular that the subtraction of land will take place especially in less productive areas, i.e. land that plays a minor role in the production of agricultural surpluses. The other argument often put forward to criticise the programme's effectiveness, i.e. the possibility that on the remaining non-subtracted land there will be an intensification of production, is probably less significant in the context of European agriculture in which the use of agricultural inputs (particularly chemical inputs) has reached levels which probably make further increases unlikely; this phenomenon could take place in non-subtracted land in areas that are globally less productive or marginal, but it is likely that the premiums proposed for these areas would not contribute to intensification of production to the extent of creating environmental problems similar to those currently being experienced in the more developed regions.

Apart from these considerations, it should be pointed out that the programme's lack of incisiveness was exacerbated by the uncertainty that accompanied its application; undoubtedly, statements like those contained in the Veneto Region Decree which put the EEC regulation into effect, according to which, "*... concerning the Community regulation ... the available financial resources might not permit satisfaction of all the applications*" [15], certainly did not encourage farmers to adhere to the programme, particularly those farmers with high opportunity costs for putting the land to rest?

On the whole, probably the only objective the programme will achieve will be that of attenuating the effects on weaker farmers of the Community programme aimed at adapting the various productive sectors to market requirements. On this subject, however, it is legitimate to ask whether such adaption could not have been pursued by adopting more efficient and effective instruments, and more generally, whether it is right to attribute to such a transitory programme the value of an instrument of effective large-scale reorientation of Community agricultural production.

As we said, the financial resources provided for the programme should have been used more efficiently, if the intention had been to achieve explicitly environmental objectives. This would nevertheless have called for a completely different policy approach. In particular, set-asides should have been targeted according to environmentally relevant land characteristics. The non-point nature of many sources of agricultural pollution makes land characteristics important factors in the extent of pollution flows; in this respect, selection of land to be set aside, guided by information about the environmental sensitivity of different locations, could certainly contribute to improving the effectiveness of policy measures, as well as reducing the inefficiencies arising from the application of uniform policy instruments. At the same time, in cases where negative environmental externalities could arise from land abandonment in specific geographical contexts, set-asides could be targeted in such a way as to provide non-transitory incentives for good environmental practices whenever this land runs the risk of being abandoned in a context of reduced price-support policies.

Following Runge, a final consideration " .. has to do with the advisability, in a trade context, of any set-asides targeted specifically at supply control, as distinct from environmental damage" [16, p.14]. If it is

true that it is in the interest of major exporting countries like the U.S. "...to maintain high productivity land under cultivation so long as this land is not vulnerable to environmental damage [and that] no land should be set aside for supply control reasons, as long as there is environmentally vulnerable land that could be set aside first" [16, p.14], this rule should be all the more respected in countries like Italy, with a high degree of reliance on agricultural imports and very limited resources in terms of low-cost, high productivity land.

3. CONCLUSIONS

In recent years there has been growing awareness of the need to revise the CAP. However, the agricultural policy-maker faces a number of 'second-best theorem' problems in revising this policy. Caution in designing new policy instruments is suggested by the simultaneous presence of different types of distortions: output-output, output-input, and input-input price distortions, price distortions and environmental externalities, positive and negative environmental externalities, etc. This suggests that there is no single panacea for improving resource allocation within European agriculture, and that there is a need for articulated revision, and in particular for a policy approach comprising regional differentiation, taking account of the differences in agricultural structures and environmental conditions in Europe.

In recent years there has been a tendency to introduce policy instruments to restore a certain degree of inelasticity in the agricultural product demand function, particularly with respect to surplus products, support for which has increased the pressure of agricultural expenses on the Community budget, leaving limited

resources not only for non-agricultural Community initiatives but also for agricultural structural policy, and this tendency is likely to continue in the future.

The signs of a tendency to switch from production to income support policy should be welcomed, since this would allow for a more efficient and effective use of budgetary resources to achieve distributional goals. In this respect, a role could be played by policy instruments aimed at encouraging and compensating the supply of environmental goods by farmers. However, it would not always be appropriate to conceive environmental policy as a vehicle for achieving distributional objectives.

The existence of a correlation between the environmental and non-environmental benefits of policy measures should not be regarded as a general phenomenon. In many instances, the explicit recognition of the existence of positive externalities followed by the provision of monetary compensation will also represent a form of supplementary income for poor farmers, often operating in disadvantaged areas. However, in many other instances, particularly in the case of negative externalities arising from the release of chemicals and other pollutants from agricultural land, allocational goals should be pursued quite independently from distributional ones.

This does not imply that environmental policies should disregard other social objectives. Whenever policy measures dealing with negative environmental externalities are introduced, some form of supplementary income could be justified on grounds of equity; however, once the 'polluter pays' principle has been accepted as a general rule, such transfers should not be considered as compensation for not polluting, and attention should be paid to designing such benefits in such a way that the search for a more rational use of natural resources is not endangered.

The set-aside programme recently introduced in the Community in many ways represents a missed opportunity in terms of environmental policy. While it will only make a modest contribution to resolving the problem of surpluses, the environmental benefits of the programme do not justify the financial commitment on the part of the Community and Member Countries. A set aside programme aimed at resolving a number of environmental problems, however, calls for a completely different approach which should take advantage of information about land characteristics. As far as countries like Italy are concerned, characterised by a relatively high food and agriculture deficit and by a limited amount of low-cost high productivity land, a targeted set-aside programme would provide more rational planning of land uses, coupling environmental and non-environmental objectives in a rational manner.

Notes

- (1) Belgium, France, Luxembourg, Italy, The Netherlands and West Germany. The EEC was successively enlarged to include Denmark, Ireland, United Kingdom, Greece, Spain and Portugal.
- (2) The Guarantee-section of FEOGA finances the expenditure of Community organizations in the agricultural markets, i.e. subsidies for exports to non-Member Countries, and intervention aimed at regulating the agricultural markets. The Guidance-section is responsible for financing the structural modifications necessary for correct functioning of the Common market.
- (3) Other quotas are applied to some fresh and processed horticultural products, wine and lamb.
- (4) By 0.5% during the commercial years 1989/90 and 1990/91.
- (5) In Denmark 99% of drinking water is drawn from underground sources, in Italy 88%, in Belgium 76%, in West Germany 73%, in France 68% and in the Netherlands 67% [10, pp.293-94]
- (6) This phenomenon has taken place in northern European countries in particular, and has been relatively less widespread in Italy.
- (7) This caution on the part of the regional administration was justified by the fact that the Italian Ministry of Agriculture did not guarantee the necessary financial support when ratifying the Community regulation. It should also be noted that the Ministerial Decree concerns retirement of land starting from the agrarian year 1988/89; as the decree was promulgated in January 1989, farmers who had already sown crops in the autumn of 1988 were automatically excluded.

References

- [1] EUROSTAT (1989): "Revenue agricole 1988". Office Statistique des Communautés Européennes. Luxembourg.
- [2] Commissione delle Comunità Europee (1989): "La situazione dell'agricoltura nella Comunità". Bruxelles.
- [3] ISTAT: Bollettino mensile del Commercio Estero. Roma
- [4] Commissione delle Comunità Europee (1988): "Verso l'equilibrio dei mercati agricoli". Europa Verde (1)
- [5] Commission of the European Communities (1987): "The Single European Act". Official Journal L169, vol.30. Luxembourg.
- [6] Commissione delle Comunità Europee (1985): "Prospettive per la politica agricola comune. Il libro verde della Commissione". Bruxelles.
- [7] Commissione delle Comunità Europee (1988): "Ambiente e agricoltura". COM(88)338. Bruxelles.
- [8] Commissione delle Comunità Europee (1988): "Il futuro del mondo rurale". COM(88)501. Bruxelles.
- [9] Von Meyer, H. (1985): "Environmental implications of agricultural policy and reform proposals: A German view". In Baldock, D.-Conder, D. (eds): "Can the CAP fit the environment. The environmental implications of future EEC farm price policies", pp.33-38. Council for the Protection of Rural England, Institute for European Environmental Policy. London
- [10] DOCTER (1988): "Annuario europeo dell'ambiente". Giuffrè Editore. Milano.

- [11] Commissione delle Comunità Europee (1989): "Proposta di direttiva del Consiglio che stabilisce misure comunitarie relative alla protezione delle acque dolci, costiere e marine dall'inquinamento provocato da nitrati provenienti da fonti diffuse. COM(88)708 def., Gazzetta Ufficiale delle Comunità Europee (54/5)
- [12] Bower, J.K.-Cheshire, P. (1983): "Agriculture, the countryside and land use. An economic critique". Methuen. London.
- [13] Lowe, P. et al. (1986): Countryside conflicts. The politics of farming, forestry and conservation". Grower Publishing. Hants.
- [14] Consiglio delle Comunità Europee(1988): "Regolamento CEE n.1094/88".
- [15] Regione Veneto (1988): "Decreto Giunta Regionale n.852/1989".
- [16] Runge, C.F. (1989): "The American Experience with set-aside and its implications for the European Community". Paper presented at the Conference organized by the Ente di Sviluppo Agricolo del Veneto "Il set-aside nella prospettiva italiana e veneta", Padova 2 May 1989.

EEC FORESTRY POLICY DEVELOPMENTS
by
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1. Introduction

The choice made in 1957 by the six founder members of the European Economic Community (EEC) as regards the role of forest production was very clear: wood and wood-based products do not figure in the list of Annex II of the institutive Treaty of the Community¹. For this reason the initiatives to regulate forest matters in the late 50's do not differ from those relative to other non-agricultural products, subject to international trade:

- the gradual reduction of all tariff barriers up to their total elimination within a period of 12 to 15 years between member States;
- the elimination of any form of quotas in imports;
- the fixing of an external common customs tax on imported goods (generally wood and wood products imports from other countries are now duty-free).

The reasons for this trade policy were evident: the position of net importer of the EEC (originally and even after successive enlargements), the need to keep imports free from any kind of protectionism, the availability of wood on the international markets and, as a direct consequence, relative price stability. This was the situation in the early 50's, a situation which was widely discussed in the United Nation's Economic Commission for Europe and in OECD (Mantel, 1960). In effect, a literal interpretation of article 38 of the Treaty, where by agricultural products it is meant "the products of the land ... and also the products from the first stage of transformation which are in direct relation to them" authorized the inclusion of wood among the products which fall under the Common Agricultural Policy (CAP). This is why some French and German forest landowners in the 50's tried to put pressure on the Community to establish a common price policy for the forest products (Mantel, 1960). Such pressure was however ineffective: first informally in December 1958 and then officially in June and October 1959, the General Directions of Forest Services of the six member countries in a series of meetings held in Bruxelles defined the objectives of the EEC in the forestry sector.

In partial coherence with such orientations, initiatives in five different directions were taken in the following years:

- the enlargement of the EEC administration involved in forest matters,

1. Other forest products (like cork and seeds of forest species) are clearly recalled in the Annex.

- the drafting of documents of a general nature for the definition of a long term forest policy,
- the funding of investments in forestry under the CAP,
- the realization of specific interventions in the forestry sector,
- the funding of research and development (R & D) activity.

These 5 lines of intervention will be explained in detail in the following pages.

2. EEC institutions involved in forest matters.

The development of initiatives in the forestry sector was accompanied by an organizational adjustment of the "eurocracy". A Forest Division² under the Directorate General (DG) VI for Agriculture and an informal Committee to coordinate national forest policies³ were created after the European Forestry Conference held in Bruxelles in 1959. At present, together with DG VI, the following Directorates operate on forest matters (Wall, 1986):

- DG III Industry (industrial aspects of wood utilized as an industrial raw material; Standing Committee on Community Policy regarding Forestry and Forest-based Industries⁴);
- V Social Affairs (Committee on Employment in Forestry);
- DG VIII Development (financial and technical cooperation with ACP countries under Lomé treaties);
- XI Environment (atmospheric pollution monitoring);
- XII Research (see chap. 6);
- XVI Regional Policy (promotion of local forest industries with ERDF grants);
- XVII Energy (demonstration projects based on the utilization of wood biomass).

As a result of this, an administrative set-up has been established which is now able to handle the wide range of problems connected with the "wood chain"

2. Renamed, after the approval in 1977 of the Community's Environment Programme, Forest and Environment Division.

3. College of Directors General of the National Forest Services (CCFOR)

4. The Committee, created in 1963 with an *ad hoc* Decision (Humez, 1984), is composed of the College of Directors General and of representatives of the private forest sector.

(*filière forêt-bois*), and which at the same time pushes for more precise and more long term orientations in the definition of the EEC's forest policy.

3. EEC planning documents for the forest sector

In the last 20 years the elaboration of general policy documents and proposals of Directives and Regulations⁵, has been particularly intense, due also to the pressure by the "eurocracy" for a major Community commitment in forest matters. These proposals can be divided in two categories:

- intersectorial programs in which forest production is generally considered as a support to other initiatives, mainly in the agricultural sector and
- specific programs for the forest sector.

As regards intersectorial programs, the Mansholt Plan presented in 1968 and the Green Book presented by the EEC's Commission in 1985 (CCE, 1985) are by far the most important. The Mansholt Plan proposed the transformation of 5 million hectares of agricultural land into 4 million hectares of forests and 1 million hectares for recreational use. The Green Book proposed the conversion of land at present used for excess agricultural production into forest plantations which could be used to produce pulpwood, biomass for energy and high quality timber, or for social objectives. In the present moment "The Future of the Rural World" (CCE, 1988a) can be considered as the most complete EEC document of intersectorial policy for the development of the rural areas. In this recent document the development of rural economies is seen as the result of integrated actions with the support of both the agricultural and forestry sectors, together with local crafts, small industries, services and tourism.

As regards specific programs for the forest sector, one can mention the proposals of a Forest Directive in 1974 (CCE, 1974) and 1978 (CEC, 1978), the proposal of a Resolution on the Common Forest Policy in 1979, the proposal on Silviculture and Wood Industry in 1983, and, lastly, the Working Document "Community Action in the Forest Sector" (CCE, 1986a) with the Memorandum (CCE, 1986b) presented in the first months of 1986. Not-

5. A Directive is a law binding as to the objective, but allows the member States to plan different national implementation methods; a Regulation is a general law binding member State also in the implementation methods; a Decision is a legal instrument which may be applicable to a government, an enterprise or an individual, over whom it is binding.

withstanding the fact that such initiatives often had the support of the European Parliament, of the agricultural organizations (EFA, COPA and COGECA) and of the different consultative committees operating at community level (like, for example, the Economic and Social Committee), the Council, mainly because of German and English opposition, has always postponed the definition of organic measures of intervention in the forest sector (Ellerton, 1986).

This gap between the proposals made and their concrete realization seems, however, to have been reduced by the latest initiatives in the forestry sector. In fact the Council, under Spanish presidency, on the 29th of May has approved the document "Strategy and Action of the Community in the Forestry Sector", together with Program based on 7 specific Regulations and one Decision (see chap. 5).

4. Indirect and CAP-dependent forest policy.

The initiatives which had the major effects on forest policy in the first 20 years of the EEC activity were those related to the realization of the CAP. Due to the fact that CAP had to do mainly with the agricultural sector, these initiatives often had contradictory effects on the forestry sector and represent a clear case of policy failure. On one hand, the price control policy has helped to keep the price of certain agricultural products competitive with alternative forest productions, on the other hand, the European Agricultural Guidance and Guarantee Fund (EAGGF) interventions on agriculture structures made possible the realization of specific actions in the forestry sector. These interventions were justified by the need to maintain soil fertility and the general productive organization of the farms (see Regulations 17/1964, 269/1979, 1820/1980, 1939/1981, 1940/1981, 1975/1982, 619/1984, 763/1985 and of the last Reg. 797/1985 modified by Reg. 1760/1987 and Reg. 1094/1988).

Three of the most representative examples of this contradictory "shadow forest policy" (MAF, 1987) are: the criteria of selection of beneficiaries, the unfavourable effects of income distribution on traditional forest entrepreneurs and the scarce consideration given to market problems of wood products. The only direct beneficiary of such interventions was the farmer, who was given the opportunity to reforest or improve the existing woods in his farm. No aid and no attention was given to other forest enterprises, which often con-

stitute the weakest elements in the "wood chain", like, for example, the harvesting and management services enterprises and the association of forest landowners.

The unfavourable effects on income distribution result particularly evident in the application of Reg. 1094/1988. This Regulation compensates those farmers who set aside, for a minimum period of 5 years, at least 20% of the land allocated to excess agricultural production; those farmers who utilize their lands for forest production receive an additional grant equal to 100-600 ECU/ha/year together with other national grants. These interventions tend to create two markets among producers, on one hand the traditional forest producers, better prepared professionally, but usually excluded from such aid, on the other hand the new enterprises which cover most of the investment costs by means of the incentives found in the above mentioned Regulation.

Lastly, in forest interventions under CAP, no consideration is given to the trends in the wood products market. No difference, for example, is made in financing reforestation projects as far as the species and the rotation period are concerned (coppices managed with short rotations or long rotation forests for high quality timber productions).

5. Direct and autonomous forest policy.

The EEC initiatives on specific forest matters are quite numerous: the Directives on the freedom of establishment and provision of services by self-employed persons in forestry and logging, on the classification of wood in the rough and on the quality of forest reproductive material to minimize the risk of plant disease being imported into the Community and transmitted from one member State to another. Other EEC actions relevant to the sector include the standardization of national data collection and the publication of forest statistics (EUROSTAT), the financing of demonstrative projects and international cooperation in forestry. Many of these interventions are coordinating instruments between national legislations, without any financial burden on the Community's budget.

One must however not ignore the fact that lately the EEC has started to give more attention to forest matters in its' regional development policy. Proof of this is Regulation 2088/1985 relative to Integrated Mediterranean Programs (IMP). With respect to the choices made in CAP, IMP criteria of intervention are qualitatively different, even though financially and territorially very limited. Forest activities are seen

in a logic of horizontal integration with other productions in the primary sector, and also as one of the components of the "wood chain" (from forest management to wood harvesting and industrial transformation). In particular, the possibility exists to finance not only the forest landowner (with generally long term effects on the wood supply), but also management and harvesting enterprises. This is why it is possible to utilize not only the EAGGA funds, but also the European Regional Development Fund (ERDF) and the European Social Fund (ESF), funds which have already been occasionally used in the past for forest investments.

These three Funds will finance the recently approved EEC Forest Program (1989-1992) based on 7 new Regulations and one Decision, as mentioned in chapter 3. During the 5 year validity of the program, Community contributions will increase from 75 MECU in 1989 to 200 MECU in 1992. The content of the 7 Regulations is:

- an increase in grants provided by Reg. 797/1985 for new planting and for improvement of existing forests, which can also be given to associations, cooperatives and other producers operating in the sector (Reg. 1609/1989);
- the provision of EAGGF funds for a wide range of interventions such as the management of forest nurseries, the improvement of damaged forests, fire fighting, forest road construction, the setting-up of associations of forest enterprises and public information initiatives (Reg. 1610/1989);
- the concession of funds for the improvement of the cork and wood products markets (Reg. 1611 and 1612/1989);
- the co-ordination and centralization of data collection on forest decline to integrate the actions funded by Reg. 3528/1986 (Reg. 1613/1989);
- the co-ordination between member States in the gathering of information and in pilot projects for fire fighting, as a measure to integrate the actions funded by Reg. 3529/1986 (Reg. 1614/1989);
- the institution of an European Forestry Information and Communication System (EFICS) (Reg. 1615/1989).

Finally, with the new Decision, a Standing Forestry Committee with consultative functions on Community and national forest policy has been established.

There is no doubt that the approval of this Program, not only because of the financial aspects of planned interventions, constitutes a landmark in the development of EEC forest policy.

6. Forest research and development

In the recent past Community funds have been allocated for forest research under the following initiatives (CCE, 1986b):

- the Program of DG XII "Wood as a Renewable Raw Material" and "Environmental Protection and Climatology", which is also finalized towards the study of atmospheric pollution on forests;
- the Program of DG VI "Agricultural Research", with 7 sub-programs, 4 of which have been involved in forest matters;
- the Program of DG XVII "Non-nuclear Energy Program" and, in particular, the sub-program "Biomass" which has financed some demonstrative projects in the use of wood for energy production.

Other funds have been allocated by the DG XII under the FAST II RES Program and, with EDF funds, in research projects in favour of some developing countries.

With the approval of the second Framework Program for Community Activities in the Field of Research and Technological Development (1987-1991) 8 Actions, 3 of which related to forestry problems, have been defined (Pettenella, 1988):

- in the Action "Quality of life" the Programs STEP (Science and Technology for Environmental Protection - 115 MECU) and EPOCH (European Program on Climatology and Natural Hazards - 40 MECU) of DG XII which will finance, through cost-shared research, research projects on soil erosion, ecosystems protection, fire safety, effects of pollutants on the forest, etc.);
- in the Action "Biological resources" the Programs ECLAIR (European Collaborative Linkage of Agriculture and Industry through Research - 80 MECU) and BRIDGE (Biotechnology Research for Innovation, Development and Growth in Europe - 100 MECU) of DG XII which will make funds available, on the basis of cost-shared research programs, for R & D activities in the fields of forest breeding, fast-growing plantation management, harvesting techniques, tissue culture, methods of forest monitoring, etc.; in the same Action the Agricultural Research Program of DG VI (55 MECU) will try to help EC farmers to adapt to the new situation created by overproduction and the restrictive markets policy;

- in the Action "Energy" the Program JOULE (Joint Opportunities for Unconventional or Long-term Energy Supply - 122 MECU) of DG XII which, updating the previous Non-nuclear Energy Program, will focus, among other initiatives, on renewable energy resources.

The Community's involvement in the field of documentation and in scientific and technical cooperation is indeed remarkable. Some relevant examples are: the Euronet Diane data base connection service, the publication of Euro abstracts, the AGREEP data base on EEC agricultural and forest research projects, the SPRINT Project of DG XIII for wood technology information, the SCIENCE Program to stimulate the cooperation and interchange of European scientists, the SPES Program (European Stimulation Plan for Economic Science), the Monitor Programme in the field of research and technology evaluation and forecasting, the VALUE program for the dissemination and utilization of research results. As regards research co-ordination in the forest sector there is the sub-committee REFOR of the Permanent Committee for Agricultural Research.

7. Some final remarks

In the final part of this paper an outline of EEC's forestry sector will be presented. Such considerations will help us to point out the major problems which the Community must face in the coming years to implement its forest policy.

a. Forests in the EEC cover approximately 20% of all the land area (66,8 millions ha; see table 1). The forest area is in slow but continuous and constant growth and there is no reason to doubt that this trend will change. The removals (173,8 millions m³ in 1987; see table 2), are also in constant growth, even though they remain well under the net annual increment (NAI). In the Community the forest sector appears deeply differentiated (FAO, 1988; Normandin, 1988) as far as forest stands, silvicultural practices and harvesting intensity are concerned. The only common elements in the 12 member countries are the marginal presence of industrial private forest ownership and the prevalence of farms with small, fragmentated forest plots (Harou, 1987; Kula, 1988).

Table 1.- Population, land and forest resources in EEC around 1980

	population	land	forest	forest/ total land	growing stock	NAI	forest/ per caput
	(millions)	(mil.ha)	(mil.ha)		(m ³ /ha)	(m ³ /ha/y)	(ha)
Belgium	9.8	3.1	0.7	21.9%	122	7.5	0.1
Denmark	5.1	4.2	0.5	11.9%	115	8.5	0.1
F.R.G.	61.7	24.3	7.2	29.7%	155	5.6	0.1
France	53.8	54.3	15.1	27.8%	116	4.0	0.3
Greece	9.6	12.9	5.8	44.6%	74	2.0	0.6
Ireland	3.4	6.9	0.4	5.5%	92	7.3	0.1
Italy	56.2	30.1	6.4	21.1%	144	3.1	0.1
Luxemburg	0.4	0.3	0.1	33.3%	161	4.1	0.3
Netherlands	14.2	3.4	0.4	11.8%	99	4.2	0.3
Portugal	9.7	8.6	2.6	30.5%	73	4.4	0.3
Spain	37.5	49.9	25.6	51.3%	70	4.3	3.7
United Kingdom	55.7	24.1	2.2	9.0%	101	5.6	0.0
EEC	317.1	222.1	66.8	30.1%	99	4.2	0.2

Source: ECE-FAO (1986)

b. In 1987 self-sufficiency results equal to 98,5% for wood in the rough, 53,5% for sawnwood, 78,2% for wood-based panels, 49,5% for wood pulp and 73,9% for paper and paper-board. For the all sector the trade deficit in 1987 was approximately 20206 million USD (see table 2). On the whole, the Community is the largest world importer of wood products⁶. The problem, when one considers the quantity and quality of EEC forest resources and their present under-utilization, is not that of a physical scarcity of wood products, but a problem of economic efficiency of domestic supply in relation to the world market (Florio, 1986) and of the competitive use of forest land (i.e. recreation, environment protection, etc.). On the basis of the European Timber Trends and Prospects to the year 2000 and beyond (ECE-FAO, 1986), it seems unlikely that there will be a shortage of timber in the European market or a substantial increase in the real price of wood, in spite the fact that the EEC's demand for wood products and forest services will continue to rise.

6. Portugal is the only net exporter in the EEC.

Tab. 2.- EEC production and trade in forest products in 1987

	roundwood	sawnwood	wood panels	wood pulp	paper & paperboard
	1000 m ³	1000 m ³	1000 m ³	1000 mt	1000 mt
internal production	173832	29567	19614	8758	32340
imports	17871	30322	10465	11211	21020
exports	15219	4656	5009	2264	9581
apparent consumption	176454	55233	25070	17705	43779
self-sufficiency	98.5%	53.5%	78.2%	49.5%	73.9%
	1000 USD	1000 USD	1000 USD	1000 USD	1000 USD
imports	1626237	6741090	3308646	6029923	16706640
exports	853775	1077511	1771486	1017762	9485990
trade deficit	772462	5663579	1537160	5012161	7220650

Source: FAO Yearbook of forest products

c. Forests in EEC already cover 40% of the area utilized by the primary sector. By the end of this century from 6 to 16 millions ha of relatively good agricultural land will be available for forest productions. Policies based on increasing the quality of agricultural products, on the extension in the use of agricultural land and on the expansion of non alimentary agricultural productions will only slow down the process of conversion of agricultural land. Land which can be used for fast growing forest plantations is no longer scarce (de Wit, 1988).

d. The need to put a break to all the different aspects of forest due attributed to air and water pollution, to fires, pests and insects is becoming a major concern of forest policy, both for the objective gravity of the problem and for the increased public awareness towards environment protection (Ellerton, 1986). This situation risks to create hostility on the part of the public towards intensive models of forest management and, in particular, towards wood harvesting activities (Richards, 1987).

e. Between 1980 and 1984 the EEC budget for the forest sector was of about 470 MECU (CCE, 1986b); Regulation 269/1979 for the protection and development of Mediterranean forests with 274 MECU from EAGGF funds was the most consistent single initiative undertaken by the EEC (Hummel, 1984); 90 MECU were allocated for forest investments within regional

development programs: projects in developing countries absorbed 75 MECU, while the remaining 30 MECU went to finance R & D⁷ and other minor interventions. It is therefore clear that till now the forest sector has not been given great financial consideration by the EEC.

In the light of these considerations, is now possible to outline the main problems which the EEC has to face in the coming years in the forest sector.

Approximately 50% of the EEC population lives in non urban areas and there is a clear trend in this process will continue; therefore it is necessary that the CAP reform be coupled by the support and development of alternative activities (CCE, 1988a). In particular, since the reduction of protectionist policies in agriculture has destabilizing effects mainly on internal, less competitive, marginal areas (Saccomandi, 1988), the reallocation of EEC funds from oversubsidized agriculture to other sectors must be very selective, in order to satisfy all the different needs and potentials of local economies. Past experience suggests that the reallocation of funds to less developed areas is not always politically and administratively feasible. The initiatives in the forestry sector must therefore form an integral part of a whole system of investments of a complementary nature on tourism, handicrafts, renewable energy, professional and technical formation and support (Maaren, 1988). In the conversion from a forest policy which is CAP dependant to an internally coherent forest policy an institutional problem will arise: the administrative responsibilities for forestry rest with different DG and different Ministers Council, and it is usually already difficult to reach an agreement at the level of one group of Ministers (Hummel, 1984).

Future developments in EEC forest policy seem to be linked to the political and administrative willingness of the decision makers, more than to the social utility of the different interventions in the sector.

7. Wood as a Renewable Energy Resource Program alone was financed with 14 MECU.

Summary.

The paper describes past developments in the EEC forest policy on the bases of 5 different fields of intervention: the enlargement of the EEC administration involved in forest matters, the drafting of documents of a general nature for the definition of a long term forest policy, the funding of investments in forestry under the CAP, the realization of specific interventions in the forestry sector and the funding of forest R & D activity. Particular attention is given to the description of the Forest Action Program (1989-1992) recently approved. In the final part of the paper an outline of EEC's forest sector is presented to point out the major problems which the Community must face in the coming years to implement its forest policy.

References

Commissione delle Comunità Europee; 1974.- Proposta di direttiva del Consiglio recante misure di carattere forestale. COM(74) 170 def., Bruxelles.

Commissione delle Comunità Europee; 1986a.- Azione comunitaria nel settore forestale. COM(85) 792 def., Bruxelles.

Commissione delle Comunità Europee; 1986b.- Memorandum a complemento del documento di lavoro della Commissione. COM(86) 26 def., Bruxelles.

Commissione delle Comunità Europee; 1985.- Prospettive per la politica agraria comune. COM(85) 333, Bruxelles.

Commission des Communautés Européennes; 1988a.- L'avenir du monde rural. COM (88) 501 final, Bruxelles.

Commissione delle Comunità Europee; 1988b.- Strategia e azione della Comunità nel settore forestale. COM (88) 255 def., Bruxelles.

Commission of the European Communities; 1978.- Forestry policy in the European Community. COM(78) 621 final, Brussels.

C.T.de Wit; 1988.- Environmental impact of the CAP. European Review of Agricultural Economics, 15 (2-3)

Economic Commission for Europe, Food and Agricultural Organization; 1986.- European timber trends and prospects to the year 2000 and beyond. United Nations, New York.

A.Ellerton; 1986.- Forêts: quelle politique européenne? Agence Européenne d'Information, Brussels.

FAO Forestry Department; 1988.- Forestry policies in Europe. FAO Forestry Paper (86).

M.Florio; 1986.- The European forest system beyond 2000: long term challenges and immediate options for a research strategy. FAST RES 4 Network Meeting; Milan.

P.Godin; 1988.- Politica dell'ambiente e politica agraria della CEE. Agricoltura Innovazione, 5-6.

P.A.Harou; 1986.- The EC context for private forestry incentive evaluation. Silva Fennica, 4.

P.A.Harou; 1988.- Essays in forestry economics: appraisal and evaluation of forestry investments, programs and policies (chap. 15: The political context for private incentive evaluations in the European Community). Wissenschaftsverlag Vauk Kiel, Kiel.

F.Hummel; 1984.- The future of forestry in the European Community. Centre for European Policy Studies, Working Document 9, Bruxelles.

E.Kula; 1988.- The economics of forestry. Modern theory and practice (chap. 2: Forestry in some selected Western countries and in the European Economic Community). Croom Helm, London. Timber Press. Portland.

K.Mantel; 1960.- Die Forst- und Holzwirtschaft in der EWG und EFTA. August Lutzeyer, Baden-Baden.

A.v.Maaren; 1988.- Änderung der EG-Landwirtschaftspolitik: eine Ausgabe für die Forstpolitik? Forstarchiv, 59 (6).

Ministero dell'Agricoltura e Foreste; 1987.- Schema di Piano Forestale Nazionale. M.A.F.-C.F.S., Roma.

D.Normandin; 1988.- Structures régionales de la ressource forestière de la CEE. INRA, Département d'Economie et de Sociologie Rurales, Nancy.

D.Pettenella; 1987.- Forestry research in the European Community: a review. FAST Occasional Paper, 170. Commission of the European Communities; DG for Science, Research and Development.

E.G.Richards (ed.); 1987.- Forestry and forest industries: past and future (chap.: The European Economic Community). Martinus Nijhoff, Dordrecht.

V.Saccomandi; 1988.- Situazione agricola internazionale e riforma della PAC. La Questione Agraria, 29.

J.W.H.Wall; 1986.- The European Community and forestry policy: the development of regional actions. FAST RES 4 Network Meeting; Milan.

AGRICULTURAL POLICY IN LAZIO

1. INTRODUCTION

The current legislative framework in Italy confers wide, if not absolute, powers to Regional Administrations as regards agricultural policy.

This situation dates from 24th July 1977, with the entry into force of Law 616, which transferred legislative and administrative powers regarding agriculture and other important sectors such as social services and care of the environment from the Central to the Regional Administrations.

Regional responsibilities with respect to primary sector fall into the following categories:

1. Farm improvement and modernisation of farm infrastructure
2. Co-operation
3. Extension and training of specialised personnel
4. Processing, preserving and marketing of agricultural products.
5. Land reclamation and protection of land from damage from natural causes (floods, landslides ect.)
6. Consolidation of holdings and land reform
7. Supervision and development of production

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In these fields the regions have virtually absolute powers, and, in fact, the only measures involving the Central administration concern the construction of centres of national importance appertaining to the agricultural sector, the preparation of a "Map of Mountainous Areas" and approval of rules concerning "Usi Civici" i.e. collective use of rural resources founded on long-standing tradition (provisions relating to points 4,5 and 6 respectively).

The Central authorities, however, maintain responsibility for orientation and control of the functions of the individual Regions, the so-called "framework" laws (legge quadro) which establish criteria for public action and the fundamental objectives to be achieved serve for orientation of Regional measures. The most recent of these is the National Plan for Agriculture and the corresponding law for its financing, passed in 1986.

Without entering into further details of these provisions since they will be here dealt with by other speakers, it seems advisable briefly to consider their implications in terms of objectives and innovations for Regional agricultural policy.

The basic objective of the National Plan for Agriculture was that of increasing the level of income for agricultural entrepreneurs, with particular emphasis on that of farmer-operators. Other objectives, which may, however, be regarded as constraints on the first, are:

- conservation of employment in agriculture
- protection of the environment

- restoration of equilibrium in production over the whole country
- restraint of the balance of payments deficit in the agro-food sector.

Innovations introduced by the Plan principally concern measures designed to achieve the objectives listed. Amongst these, "horizontal" measures aim at achieving intersectoral coordination throughout the primary sector and are implicit in legislative provisions, those concerning employment in the public sector, those that concern the whole national territory, research, information and other problems.

The logic behind the "vertical" measures, instead, in contrast to provisions in the law "Quadrifoglio", which preceded the current National Plan, avoid fixing production targets for individual sectors, but rather allow market demand and competitiveness play their part.

The law for financing the National Plan (Legge Pluriennale) introduces two important innovations as regards the method of programming, the first is the establishment of a Product Commission in which the Minister of Agriculture and the Secretaries for Agriculture (Assessori) of the Regions and Autonomous Provinces take part. This Commission is responsible for contacts between State and Regions as regards agricultural policy the second innovation is that public funds for agriculture are made available to the Regions only after the latter have adopted Development Programmes consistent with the National Plan for agriculture.

To complete the general picture of the field of action of

Regional governments in agricultural policy mention must be made of their role in the application of EEC Regulations. The law 616, in fact, transfers to the Regions the administrative functions in connection with the implementation of these Regulations.

2. RECENT TRENDS IN THE DEVELOPMENT OF AGRICULTURE IN LAZIO

Changes which have taken place in the principal technical and economic parameters concerning agriculture in Lazio are shown in the following tables, and these indicate the main lines of development in the sector over the last fifteen years.

Considering the data from the last two Census of Agriculture (1970 and 1982), it is evident from Table 1 that change has taken place in the relative importance of the different types of farm enterprise with a revival of owner-operated farms: the numbers of farms run by owner-operators expanded by 7.6% and the cultivated area involved increased by 86,963 hectares.

At the same time, there was a dramatic decrease in the importance of farms run with hired labour; the number fell by 63.9% and the cultivated area by 67.5%.

Data relating to forms under which farm land was held also reflect this tendency, as do those concerning farm size. Less farms had mixed (ownership and rent)- forms of holding, and more were owned outright. More farms moved into the 30-100 hectares

Tab.1: A comparison between 1970 and 1982 Census data

=====									

size range, sufficiently large as to ensure an acceptable level of income.

This development in farm size took place at the expense of the small-to-medium class of farm (3 to 30 hectares) and of the large farms, over 100 hectares; it did not occur as the effect of law 203/82 which provided for the conversion of share tenancy to rented holdings. In fact, the main result of that law appears to have been the sale of holdings by non farmer owners, but in the period under consideration this effect was negligible.

Table 2 gives further evidence of the same trend.

There is a considerable increase (19,2%) in the number of farmers working exclusively on the farm, and the decrease in the number of farm workers belonging to the farm family is far less than that for those not belonging to the family.

There is, however, no obvious connection between the changes so far described and those relating to land use and production. But this is to be expected, considering the important changes brought about by urbanisation and by mechanisation of agriculture, far more radical than those due solely to the evolution of agrarian structures.

The total area dedicated to agriculture and forestry fell by 85,000 hectares between 1970 and 1982 (Table 3), whilst in the same period the urban area increased by 47,000 hectares. As regards different types of crops, there was a strong decrease (-250,000 hectares) in the arable area, no significant change in

Tab.2: A comparison between 1982 and 1970 Census data

Employment of farm operators				
	1982 Census		1970 Census	
	No	%	No	%
Totally on farm	157450	65,2	132051	58,8
Mainly on farm	5294	2,2	10779	4,8
Mainly off-farm	78792	32,6	81621	36,4
Total	241536	100	224451	100
Change				
	No		%	
	25399		19,2	
	-5485		-50,9	
	-2829		-3,5	
	17085		7,6	

Days worked				
	1982 Census		1970 Census	
	No	%	No	%
Family labour	34112647	89,2	37241662	78,9
- Farmer	19144779	50,1	20327877	43,1
- Family members	14967868	39,1	16913785	35,8
Other labour	4129752	10,8	9972434	21,1
- Permanent	1535772	4,1	2699887	5,7
- Casual	2593980	6,8	7272547	15,4
Total	38242399	100	47214096	100
Change				
	No		%	
	-3129015		-8,4	
	-1183098		-5,8	
	-1945917		-11,5	
	-5842682		-58,6	
	-1164115		-43,1	
	-4678567		-64,3	
	-8971697		-19,1	

Mechanisation									
1982 Census		1970 Census		(No.s)		Change		(Per cent)	
Farms	Machines	Farms	Machines	Farms	Machines	Farms	Machines	Farms	Machines
Tractors	115113	67025	108727	27624	6386	39401	5,9	142,6	
Two-wheel tractors	112442	89938	77977	30623	34465	59315	44,2	193,7	
Threshers	20037	632	71935	567	51898	65	-72,1	11,5	
Combined harvesters	30887	1714	21741	1144	9146	570	42,1	49,8	

SOURCE: ISTAT, Terzo censimento generale dell'agricoltura, Volume XX: Lazio

Tab.3: Trends in land uses (1000 hectares)

	1970	1975	1980	1981-83	1984-86
Arable	812,3	527,8	542,7	554,5	550,6
Tree crops	182,3	214,9	216,6	215,9	211,2
Permanent pasture	201,9	233,1	225,4	226,8	228,6
Wood land	361,9	366,6	367,6	367,7	367,9
Other uses	161,6	197,3	201,1	184,3	149,1
Total area, agriculture and forest	1591,2	1555,4	1553,6	1549,3	1507,5

SOURCE: ISTAT, Annuario di statistica agraria

woodland area and, in contrast, same increase in the area under permanent pasture and tree crops (about 50,000 hectares).

As regards field crops (table 4), the only sizeable change registered is soft wheat: the area under this crop declined by 72,000 hectares, about one third of the area originally occupied in 1970. Nevertheless despite this decline, total output remained unchanged over the period. Although percentage changes for other crops were quite large, given the limited area involved, in this context they will not be considered in detail.

The situation as regards tree crops (table 5) is, however, much more varied. Increases are evident in the areas under olive groves, vineyards and hazel groves of 22,000, 9,000 and 7,000 hectares respectively. Another marked change, this time negative, took place in the area under cultivation of dessert grapes. There were also changes of about 1000 to 1500 hectares, each for some other tree crops, which left the area under oranges cut by half, and that under cherries and peaches doubled.

In the livestock sector notable change took place only in sheep rearing (Table 6). Whereas for all other species of animal no trend was particularly evident, sheep numbers practically doubled. Similar trends are found in the final output of these livestock sectors.

In effect, the changes which took place in crop patterns and livestock deserve more thorough investigation. The increase in the area under tree crops, at the expense of field crops, for

Tab.4: Trends in production of principal field crops
(thousand ha.s and thousand quintals)

	1970	1975	1980	1981-83	1984-86
Soft wheat	210,2 4482,7	185,1 4898,5	157,2 3724,3	150,7 4273,1	138,6 4107,4
Hard wheat	60,3 1391,4	47,3 1296,5	66,1 1528,2	69,8 2021,4	79,7 2639,1
Barley	18,4 334,4	26,1 654,8	25,4 657,2	27,9 833,4	26,1 925,1
Oats	33,9 592,1	21,9 499,1	18,2 366,2	17,4 445,3	11,1 290,4
Maize	53,9 1618,6	34,6 1462,3	31,1 1624,5	31,1 1775,3	30,1 1935,3
Sugar beet	2,4 886,4	1,4 507,7	5,2 2123,1	5,9 3117,1	4,1 1983,9
Tobacco	2,4 45,9	1,3 21,1	1,5 36,1	1,5 37,1	1,9 47,5
Potatoes	24,8 2636,1	12,9 1389,9	11,4 1889,1	9,7 1952,7	8,1 1799,6

FONTE: ISTAT, Annuario di statistica agraria, annate varie

Tab.5: Trends in production of main tree crops
(thousand ha.s and thousand quintals)

	1970	1975	1980	1981-83	1984-86
Dessert grapes	6875 811	4854 816	5432 1033	5410 894	3436 533
Vineyards	59656 4805	98579 7310	98173 8689	97523 7647	68407 7480
Olives	87956 768	88954 1164	88684 1240	88436 1612	109858 1327
Oranges	3549 98	2563 253	2295 289	2155 275	2000 165
Cherries	80 10	1760 17	1655 40	1449 42	1123 51
Peaches	1706 135	2244 202	2274 268	2334 474	3115 494
Pears	627 89	777 140	575 108	504 112	789 140
Hazel nuts	11139 56	13858 190	16163 138	16362 246	18235 229

SOURCE: ISTAT, Annuario di statistica agraria

Tab.6: Trends in livestock numbers (thousand)

	1970	1975	1980	1981-83	1984-86
Cattle and buffaloes	383	331	395	420	320
Sheep	634	660	972	1057	1228
Goats	40	40	44	44	53
Pigs	227	246	198	215	203
Horses	16	28	32	32	28
Donkeys	37	21	13	11	9

FONTE: ISTAT, Annuario statistico italiano, annate varie

Tab.7: Trends in livestock production (thousand quintals)

	1970	1975	1980	1981-83	1984-86
Meat					
Beef and buffalo	423,1	389,4	400,1	363,1	292,7
Mutton and goat	43,2	39,6	83,2	95,6	107,8
Pork	244,5	266,9	505,1	546,8	456,1
Horse	39,9	33,7	58,1	45,7	22,1
Milk					
cow and buffalo	3892	3832	5078	5348	5449
Sheep and goat	268	365	545	677	757
Wool	17,4	15,1	17,7	18,5	17,1

SOURCE: Annuario statistico italiano

example, is an indicator of a trend towards a higher level of employment of family labour on the farm, and thus towards the maximisation of returns to the entrepreneur and his family.

3. FORMULATION OF AGRICULTURAL POLICY IN LAZIO

For a complete picture of agricultural policy in Lazio it is necessary to move one stage further back with respect to developments previously described at national level.

In accordance with the institutional reforms mentioned above, agricultural policy in Lazio has its origins in 1977 with Statement No. 139 of 30th March 1977 of the Regional Council, which approved the "first document of the programme of Regional development 1977-81, aims and objectives".

This is a basic document for agricultural policy in Lazio in that it specifies the objectives and strategies of regional measures and thus defines the framework within which indications for planning in the various productive sectors are to be placed, as well as that for "operative projects" destined to achieve these indications.

A further development in agricultural planning took place in November of the same year. Against the background of discussion of the National Plan for Food and Agriculture and the approval of the "Quadrifoglio" Law, the Region presented the "First indications for a Plan for Food and Agriculture in Lazio". This is an important document since it serves as a link between the

National Plan for Food and Agriculture, with respect to which there is convergence of ideas, and the Regional development programme.

Specifically, the objectives contained in the two documents may be summarised as follows:

- to increase the quantity and value of agricultural production;
- to modernise production methods and bring agricultural incomes to a level comparable with those in other sectors;
- to maintain a stable level of employment in the primary sector;
- to safeguard agricultural land use in the Region.

The legal framework for policy planning was to consist of:

- a Regional Plan for Food and Agriculture
- sectoral programmes
- laws for productive sectors
- operational projects
- farm development plans

It is not possible, in this paper, to enter into further detail about these legal instruments. It should, however, be emphasised that the intention was that they should serve to bring the incomes of agricultural operators, beneficiaries of support measures, to levels comparable with those of operators in the rest of the economy and, at the same time, to specify more precisely the methods of intervention and the measures to introduce at Regional level.

Accordingly in the years which followed, up to 1982, the drafting of sectoral programmes and their relative operational projects began. Table 8 shows the sectors involved, planned expenditure and the time span within which it was foreseen that the objectives would be achieved.

At this stage, however it does not appear that the process so far described has had much effect, since at the present time the Lazio Region has no agricultural policy of its own in some vitally important sectors.

Thus the Region's expenditure on agriculture may be considered simply as a transfer of and, perhaps, on addition to funds deriving from laws for financing agriculture emanated at national level. More will be said later on this subject.

4. REGIONAL PUBLIC EXPENDITURE IN AGRICULTURE.

Sources of information about Regional expenditure in agriculture are hard to come by: they consist in fact, in the balance sheet of expenditure incurred (ex-post) by the Region, and in the summary analyses provided by INEA (National Institute for Agricultural Economics)

The first is undoubtedly the most detailed and relevant, but in order to obtain an overall picture of the situation an extensive re-classification would have to be undertaken and in this context it was not considered essential to carry out such a heavy work-load. The following information is therefore drawn

Tab.8: Forecast expenditure for sectoral programmes (million lire)

	1979	1980	1981	1982	1983
Livestock	17671	21212	15626	24195	
Wine	10750	11650	12800	14100	15600
Olives		168500 (in 15 years)			
Horticulture		no allocation			
Forestry		230600 (in 10 years)			
Irrigation		723760 (in 15 years)			
Producer associations					
and marketing		no allocation			
Sales promotion		no allocation			

SOURCE: Regione Lazio, LAZIO agricolo, 1982

from INEA publications.

This information is presented in tabular form and relates to financial flows to agriculture in Lazio, originating from State laws and allocations and payments of the regional government.

There seems little point in considering in detail here the State financing of agriculture in Lazio unless, possibly, in comparisons with that to other regions. It appears sufficient simply to take note of its main trends which are clearly documented.

Much more interesting, instead, are the time series relating to allocations to specific projects, that is investment plans accepted by the region, and to payments made at various phases in the execution of the projects, or at its completion (Table 9). These clearly show (Table 10) the low level of allocations made by the Region, in relation to key technical and economic parameters such as agricultural area in use, value added, the value of final product, etc (Table 11).

Another sign of inefficiency is given by the very low ratio between payments and allocations. The low value of the ratio payments allocations is a clear indication of the "pathological" form of managing public expenditure in that not only are allocations a low proportion of available financial resources, but even more, the very limited amounts of payments made with respect to allocations shows how very few investment projects have materialised (Table 12).

Tab.9: Trends in public expenditure on agriculture (million lire at current prices)
I= allocated to specific projects, P= payments

	1975-77		1978-80		1981-83		1985	
	I	P	I	P	I	P	I	P
Assistance and information	2583	97	33740	9762	30846	11844	8138	211
Development agencies	-	-	72154	56823	66837	21775	38000	19000
Land reclamation and drainage	8562	500	61264	3334	82088	34831	60920	36978
Forestry and mountain areas	5332	651	15424	4516	14518	1710	7150	1617
Farm investment	23342	39	79009	3672	71606	7661	56557	7360
Livestock	18495	192	40778	2412	39385	8005	12808	4184
Processing plants and marketing	1187	-	3761	-	2945	2	1783	82
Peasant land ownership	100	-	-	-	-	-	-	-
Shooting and fishing	877	109	1260	865	4391	75	5030	-
Other	-	-	16450	10	20387	2908	7990	1884
Total								
current prices	60257	1588	323840	81334	335053	88811	198376	71370
constant prices (base=1988)	249669	6053	850042	213319	524304	132247	231108	83146

SOURCE: INEA, Annuario dell'agricoltura italiana

Tab.10: Trends in the value of final product and in value added
(billion lire)

	1970	1975	1980	1981-83	1984-86
current prices					
Final product	298,7	473,1	1331,8	1902,8	2730,5
Value added	239,1	378,1	998,6	1416,2	2003,3
constant (1988) prices					
Final product	2466,3	2280,3	2958,8	3061,1	3118,1
Value added	1974,2	1822,4	2218,5	2278,2	2333,8

SOURCE: ISTAT, Annuario di statistica agraria

Tab.11: Trends in Regional expenditure in agriculture in relation
to sectoral parameters (thousand lire, 1988 prices)
S= forecast expenditure, I= expenditure allocated to projects
P= payments

	1976-79	1980-83	1984-->
S/AAU (1)	248,1	240,4	205,3
I/AAU	166,6	192,1	153,7
P/AAU	35,1	48,3	63,6
S/person employed (2)	1383,4	1698,6	1562,4
I/person employed	970,6	1348,3	1167,1
P/person employed	195,4	341,4	482,1
S/value added (%) (3)	11,2	9,5	7,9
I/value added (%)	7,6	7,6	5,9
P/value added (%)	1,6	1,9	2,5

(1) Agricultural area in use, (2) Employed in agriculture,
(3) Value added in agriculture

SOURCE: F.Sotte, D.Novach
Libro bianco sulla spesa delle Regioni in agricoltura

Tab.12: Trends in public expenditure in agriculture in the Region of Lazio
 Indicators of efficiency
 S= forecast expenditure, I= expenditure allocated to projects, P= payments

	76-79	80-83	84->	76-79	80-83	84->	76-79	80-83	84->
	Allocative capacity (I/S)			Payment capacity (P/I)			Expenditure capacity (P/S)		
Assistance	77,4	80,5	85,2	34,8	30,7	1,6	26,9	24,7	1,4
Development agencies	96,1	96,7	100	81,2	44,7	100	78,1	43,2	100
Id. reclam.	57,1	96,1	81,2	3,4	32,8	21,1	1,9	31,5	17,2
Forest and mountain	59,5	85,9	93,4	27,2	18,1	19,3	16,2	15,4	18,1
Fm. invest.	65,8	55,8	56,2	0,3	11,4	14,7	0,2	6,4	8,3
Livestock	77,2	88,7	66,1	4,6	14,1	32,1	3,5	12,5	21,2
Processg. Mktng	34,1	52,6	72,5	0	0	33,7	0	0	24,4
Peasant owner.	54,1			0			0		
Shootg., Fishg.	79,6	86,9	100	39,3	12,7	0,9	31,3	11,1	0,9
Other	35,8	84,1	54,5	0,1	9,1	71,1	0	7,5	38,7
Total	67,3	79,6	74,7	21,1	25,4	41,3	14,1	20,2	30,8

SOURCE: F.Sotte, D.NOVACH
 Libro bianco sulla spesa delle Regioni in agricoltura

But independently of these indicators, which ought to be assessed in comparison with other facets of Regional activity, the most interesting aspect would be to know what have been the effects of the expenditure undertaken. In other words, the indices mentioned give a measure of the "administrative efficiency" of the Region, which, in fact, is not at all irrelevant, but they say little about the extent to which the expenditure has been effective in achieving the objectives set, and even less about how far these objectives meet the real needs of the agricultural sector.

5. REGULATION OF LAND USE IN LAZIO

As already noted, law No. 616 transferred to Regional Governments the responsibility for controlling land use. In december 1978, in fact, the Regional Law No. 72 was passed which outlined the "Regional framework for land use". This is a fundamental piece of legislation, and, in fact in article 1 of the law it is stated that "In order to work out a framework of reference for activities governing land use, the Region of Lazio will procede to carry out studies and research, to define directives as regards land use to discover the natural aptitudes of areas making up the Region and constraints necessary for protecting natural, environmental, scenic, historical and cultural assets of the Region. The law serves as a fulcrum for coordination of planning, and the sectors in which intervention

is foreseen are as follows:

- developments for residential, productive and service purposes;
- utilisation of agricultural resources, protection and enhancement of natural and cultural assets, safeguard of those areas occupied by monuments of national or regional interest;
- University campus;
- parks, natural resources and thermal springs;
- areas subject to environmental protection, from natural hazards, protection from, or prevention of, pollution.

It is not possible here to analyse development in all these sectors, since in some of them, that concerning urban areas, for example, there is dense and detailed legislation which, in general, is in line with national legislation.

It is interesting, instead, to analyse what has been done in the Region for the management of parks and nature reserves within the wider and more complex context of overall management of land use. The subject presents numerous problems which tend to hinder the emanation of legislation: for example, the evolution in recent years of the concept of "protection", the important conflicts of responsibility which arise between the authorities of the Region, the Provinces and the Mountain Communities, the changeable and often contradictory pressures of public opinion, divided between "development" and "conservation", or motivated by different economic interests.

In this respect, it must be recognised that the Region has

been particularly active in bringing the situation under control, and only four months after the Law 616 was passed, already presented a Regional Law No. 46 of 28th November 1977. "For the establishment of a system of Regional parks and nature reserves", this is considered by some as "an innovation in the field of legislation for urbanisation, land use and its economics aspects". In the absence of a National Law which would have provided a point of reference, the regional Law was passed in the face of many difficulties, also of technical (constitutional) nature.

Since it is not possible here to consider the Law in detail, we will consider only the planning aspects contained in it. These may be summarised in the following phases:

- drafting a general plan of areas to be protected;
- emanation of laws establishing each park or reserve with specification of the purposes it must serve;
- drafting of the specific plan for the area concerned.

In table 13 are recorder in chronologic orber all regional laws issued by Lazio in the domain of "Land conservation". All these laws, as stated in regional law N.46 of 28/11/77 (framework law) issue "protected areas" of different nature and therefore with different denomination. With that respect, tthe adopted terminology is as follows:

- 1) Parks: protected areas issued on homogeneous land, of relevant scientific, naturalistic and ecological interest. Considering

Tab.13: Natural Reserves and Parks in Lazio

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Date	Place	Type of intervention	ha

11/77	Framework law on Parks and Natural Reserves		
4/79	Tevere - Farfa	Natural Reserve	700
6/80	Castel Fusano	Urban Park	1000
9/82	Lago di Vico	Natural Reserve	3300
9/82	Valle del Treja	Suburban Park	1000
1/83	Monti Simbruini	Natural Park	38000
1/83	Lago di Posta Fibreno	Natural Reserve	400
7/83	Macchiatonda	" "	250
9/83	Monte Rufeno	" "	3000
1/84	Castelli Romani	Suburban Park	2500
7/84	Barbarano Romano	" "	1450
4/85	Campo Soriano (Terracina)	Natural Monument	1500
6/85	Laghi Reatini	Natural Reserve	3000
10/86	Monte Orlando (Gaeta)	Urban Park	53
2/87	Pineto	" "	240
2/87	Gianola e Monte di Scauri	Suburban Park	150
6/88	Sutri	" "	20
8/88	Tor Caldara (Anzio)	Natural Reserve	44
9/88	Monte Navegna	" "	1500
9/88	Manziana	Natural Monument	50
11/88	Appia Antica	Natural Park	2400
12/88	Canale Monterano	Natural Reserve	900

Total protected surf.			61457
Total regional surf.			1720274
=====			
SOURCE: Regione Lazio			

existing relationships amongst such areas and urban centres,
they are divided

- a) natural parks: whose perimeter does not include large and industrialized urban centres;
 - b) suburban parks: whose perimeter includes or are adjacent large urban centres;
 - c) urban parks: whose perimeter is included in the urban boundary.
- 2) Reserves: protected areas, issued on areas of various size, in order of protecting and enhancing its characteristics of naturalistic or scientific interest.
- 3) Natural monuments: limited size objects which have naturalistic or landscape interest

At this point, however, it must be acknowledged that despite the speed and effort dedicated at the time, now, more than ten years later it has not been possible even to undertake the studies necessary for drafting the general plan of areas to be protected. This has been due to the changeable political situation in the governments which have been responsible for Regional administration.

The remarks of a person involved, obviously contrary to some attempt at territorial planning, are highly appropriate: "At a certain stage, alas, the zeal of the planners was directed towards these areas which had previously been forgotten and it created there a dense network of roads, even at the highest

altitudes, new and efficient buildings in a stile quite different from the quiet rural architecture, to accomodate at least in some periods of the year, quite a crowd of people so that the area would not seem too deserted as compared with the town.
..... Whilst the planners, aware of the need to protect at least a part of the resources necessary for the quality of life, were discussing the methods and criteria for regulating overall land use, in line with the principles of invironmental protection, areas hitherto undamaged by previous invasions risked to follow the example of the development area". (M. Aiello)

6. CONCLUSIONS

In this paper an attempt has been made to summarise the main events in the recent developments of agricultural and land use policy of the Lazio Region.

The aim has been to analyse the goals of the Region in those sector and to confront them with the quantitative and qualitative results obtained.

In the light of what has been described above, it appears justified to state that, despite the considerable powers conferred on it, the Lazio Regio often has never got beyond the stage of emanating laws, this providing a conspicuous case of "Government failure".

In fact, even though it has admirably demonstrated grand

ambition in the aims set and the rapidity with which laws have been promulgated, as has been seen, there has been no concrete follow up and thus very little has been achieved.

As explained above, the available financial resources have not been spent, or at least, not in the way the Region intended, or perhaps one should say as the National Government intended, since the finance available came mainly from funds erogated by the central administration. Nor did the regional policy succeed in harnessing the will to change emanating from the agricultural sector and promote its achievement. The structural change apparent in regional agriculture therefore appears essentially "autonomous", not directed and aided because neither the regional policy, nor the administrative structure, effectuated the transfer of all resources destined for the purpose.

One can therefore conclude that, once more, the role of the public Agency has been played, in fact, by the "free" adjustment of the market. In fact, the restructuring of the primary sector described above was made possible only because of the development taking place meanwhile in other sectors of the economy, following the usual role played by agriculture in industrialised societies, that is, to act as a "reserve" of labour (Table 14).

Meanwhile the list of ecological negative externalities is growing, both relating to structural features and to more contingent facts, which, however, carry a cumulative effect, a sort of retarded both. If we could have summed up all these

negative effects and evaluate them in economic terms, then, perhaps, there could have been a partial appraisal of the damage coming from political-burocratic inertia.

Tab.14: Trends in macro-economic parameters in Lazio
(per cent composition)

	1975	1980	1981-83	1984-86
Labour force				
Agriculture	9,8	9,3	8,3	6,7
Industry	33,9	24,9	23,4	21,8
Other	56,3	65,8	68,3	71,5
Value added				
Agriculture	-	4,7	4,6	4,1
Industry	-	25,1	24,6	25,1
Other	-	70,2	70,8	70,8

SOURCE: ISTAT, Le Regioni in cifre

BIBLIOGRAPHY

- 1 - G. Antonelli, M. Mellano, La valutazione degli effetti delle politiche regionali, Rivista di Economia Agraria, 1982, n.1
- 2 - G. Antonelli, M. Mellano, La spesa per l'agricoltura delle regioni a statuto ordinario. Un bilancio di politica agraria, Rivista di Economia Agraria, 1980, n.3
- 3 - F. De Stefano, La politica agraria in Italia, Il dottore in scienze agrarie e forestali, 1989, n.3
- 4 - F. De Stefano, Problemi di politica agraria, Il Mulino
- 5 - INEA, Annuario dell'agricoltura italiana, annate varie
- 6 - ISTAT, Annuario di statistica agraria, annate varie
- 7 - ISTAT, Annuario statistico italiano, annate varie
- 8 - ISTAT, Le Regioni in cifre, annate varie
- 9 - Regione Lazio, Lazio agricolo, 1982
- 10 - Regione Lazio, IV Legislatura, Lazio Editrice
- 11 - Regione Lazio, Parchi e riserve naturali nella gestione territoriale, Atti del Convegno, 1987
- 12 - F. Sotte, D. Novach, Libro bianco sulla spesa delle Regioni in agricoltura, Editori del Grifo

AGRICULTURAL AND ENVIRONMENT POLICY DEVELOPMENT IN THE VENETO REGION

by

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CONTENTS

In recent years the community has become gradually more aware of the environmental problem and the risks of degradation involving many resources that are fundamental for human life, such as water, air and the soil. The regional authorities in Veneto, which have traditionally had notable power to influence trends in agricultural policy, have increasingly committed themselves to the objective of a rational and balanced territorial equilibrium, passing specific laws for this purpose. In other words, today there is a desire to achieve better utilization of natural resources by aiming at their conservation and coordination between the variety of possible purposes for which they may be used.

The primary sector - which up to a few years ago was exclusively considered in economic and productive terms - is now seen by the regional administration as a strategic factor in the environmental system, in the sense that it governs, utilizes and modifies natural resources to a greater extent than any other sector, so that protection of natural resources is closely connected with the objectives and techniques applied by agriculture in using the resources themselves.

On the basis of this cultural awareness, and with reference to the Veneto region, the theme of agriculture and the environment is explored with regard to three distinct situations:

- the impact of extra-agricultural activities on the primary sector;
- the environmental modifications caused by farming and rearing on the plain;
- the characteristics of agriculture in the hill and mountain areas.

With regard to these situations, the development of agricultural policies in Veneto does not appear to be well synchronised with environmental policies. Alongside sectorial legislation regarding agriculture and largely restrictive laws on the use of environmental resources and the landscape, there are also "intermediary" laws which tend to improve efficiency in the use of resources while at the same time protecting them. The critical evaluation of regional legislation provides an overall view of these laws and also points out some of the possible points in common between them, as well as their limitations and contradictions.

AGRICULTURAL POLICY DEVELOPMENT IN THE VENETO REGION

1. INTRODUCTION

In the nineteen -eighties there has been a radical shift in the development of agriculture in Italy and in Europe generally. On the one hand, self-sufficiency in food production has been largely achieved, thanks to spectacular increases in productivity, and on the other hand, people have become aware that the use of technology may cause serious damage to the environment and public health (1).

This awareness is having a profound influence on the objectives and policies adopted by government bodies which play an important role in European agricultural policies. Thus the EEC - the most important policy-making body - has focussed its agricultural policy on reducing surpluses, along with the promotion of agronomic practices that place more emphasis on environmental conservation (The European Community Commission, 1985, 1988). This has led to less commitment to subsidising agricultural prices and to a tendency to apply, over a number of years, more intense policies at the structural level aimed at increasing the productivity of the factors involved in agriculture without increasing the actual production. Similarly, the innovatory EEC regulation no. 797/1985 outlines policies aimed at preserving natural resources and the landscape, thus encouraging the promotion of uses of the territory that are compatible with agriculture, such as recreational activities, environmental conservation, etc.

It is in the context of this recent evolution in EEC policies that one should consider the developments in agricultural and conservationist policies on the part of the Veneto Region. In the region's official documents the primary sector in particular is considered to be a strategic sector in the context of the environmental system, in the sense that, more than any other economic field, agriculture governs, uses and modifies the environment's natural resources (soil, water, air), to the extent that preservation of these resources is closely connected with the objectives and techniques applied by this sector in using the resources themselves. Thus the need to emphasise environmental as well as productive objectives involves an overall review of the instruments of agricultural policy applied in the past, as well as a review of the public body's organisational structure and the ways in which financial contributions are made.

After a short description of some of the major problems connected with the relationship between agriculture and the environment in the Veneto region, we shall consider some of the innovations in this field, providing a summary of the most important programmes and legislative policies prepared by the Veneto region in the nineteen-eighties.

2. AGRICULTURE AND THE ENVIRONMENT: SOME QUESTIONS ARISING AT REGIONAL LEVEL

When dealing with the subject of the relationships between agriculture and the environment, one should refer first of all to the geographical contexts in which the various farming and rearing practices are carried out. With respect to the agricultural activities and related environmental problems, there are significant differences between the mountain and hill areas and the plain.

In the mountains and hills the factors which limit agricultural activities are not modifiable in the majority of cases; hence the farmer is obliged to adapt the choice of crops and farming techniques to the environmental situation. On the plain, on the other hand, there is a prevalent tendency to transform the environment intensively in order to increase potential productivity.

Moreover, in the hills and mountains agriculture plays a fundamental role in protecting and conserving the environment, a role often no longer played by farming on the plain where agriculture has become one of the productive sectors that bears greatest responsibility for environmental transformations.

It should also be considered that agriculture, being the major user of the territory's natural resources, is often subjected to conditioning factors due to territorial transformations carried out by other productive sectors. Thus there are three possible fields of study with respect to the relationships between agriculture and the environment:

- damage to agriculture due to misuse of environmental resources on the part of other productive sectors and by society as a whole;
- environmental damage caused by the primary sector;
- environmental problems deriving from the decline of farming in the hill and mountain areas.

2.1 The impact of non-agricultural activities on the primary sector.

Over the past twenty years the Veneto region has undergone a profound socio-economic transformation. Over a short period of time, there has been a passage from a basically agrarian economy to a post-industrial one. As a result, patterns of housing and infrastructures have also been transformed, often with significant impacts on agriculture and the environment. While accepting that changes of this size could not have taken place without resources being transferred between the various productive sectors, it is undoubtable, however, that the almost complete absence of territorial planning has led to wastes and costs which could have been avoided with more attentive action on the part of public bodies.

The most important environmental damage to which the agricultural territory - and indirectly the agricultural sector - was subjected is largely due to the lack of adequate territorial policies in the phase of greatest urban and industrial growth (2).

With regard to the phenomenon of decentralised diffusion of the population and productive structures - which is in a sense positive and typical of the Veneto region - there has in fact been a pathological dispersion in small urban areas lacking in technological services and an adequate road network.

This dispersion of settlements has also caused a large increase in the amount of land being taken away from agriculture; there is in fact an inverse proportion between the size of the urban area and the amount of land consumed by each new inhabitant. In smaller urban areas the amount of land per inhabitant is generally much higher than in large towns where the building typologies tend to cover less land.

As well as the direct appropriation of agricultural land, the often unplanned dispersion of buildings over the territory has brought about a phenomenon of indirect consumption of land, due to the fact that large areas of farmland are surrounded by residential or industrial areas where farming is hence subjected to notable limitations and in some cases is difficult to practise (3).

The type of urbanisation carried out has moreover involved a profound alteration of the hydraulic system in the entire Veneto plain. The rural areas in the centre of the region have gradually taken on the characteristics of vast urban suburbs and this has, on the one hand, caused more frequent inundations, even with levels of rainfall that are not exceptional, due to the slower speed of rainfall drainage, and on the other hand, this has considerably increased the costs and damages connected with these phenomena.

The growth of the urban areas - even when this took place with proper urban planning - occurred without any hydraulic or economic evaluations being made. Often the new urban areas involved the best farmland and the more organised farms, causing notable wastes of human, territorial, economic and environmental resources.

The regular over-emphasis on areas for residential and industrial purposes in the urban plans meant that such plans were deprived of real significance, to the extent that often they merely provided an "a posteriori" justification for urban development that was already taking place. It should also be noted that even the more recent urban plans, prepared in a cultural and socio-economic context that is totally different from that of the seventies, with a reduced demand for residential areas, only rarely bring about significant reductions in the amount of land allocated for building purposes, in order not to disappoint the expectations of the land owners involved.

Another problem involving large areas of rural land, particularly in some parts of the region, is that of quarries. The size of the -quarries and the mode of excavation have brought about irreversible changes in the environmental situation in a number of boroughs in the Veneto region, making it unfeasable to reinstate farming or other activities of a recreational nature without remodelling the morphology of large areas of land at very high costs.

2.2 The environmental modifications caused by farming on the plain.

As mentioned above, a part of the phenomena of environmental degradation that has taken place in the Veneto region is due, either directly or indirectly, to agricultural activities.

In the seventies and eighties agricultural development in the region, as in other parts of the country, was characterised by an intense substitution of labour by capital and by widespread introduction of chemical products in the agrarian productive cycle.

While the number of farm workers was reduced by 33% between 1971 and 1987 (at present it is estimated that there are 165,000 farm workers, 9.2% of the total work force), the added value increased by 25% in real terms, to the extent that the added value per worker practically doubled, despite a reduction of 9.5% in the total area of cultivated land.

Over the same period there was a notable increase in the use of chemical fertilizers (particularly nitrogenous products), pesticides and herbicides. Between 1970 and 1984 the quantities of nitrogen, phosphorus and potassium used increased respectively by 153%, 73% and 141% (4), so that, for example, the ratio between the amount of nitrogen used and the added value in real terms was trebled (T.Tempesta, 1988a). Moreover, in the Veneto region great use is made of pesticides due to the widespread cultivation of horticultural crops and vines which represent almost 30% of the gross agrarian product in the region.

Another source of pollution derives from the transformation which takes place in livestock rearing, a field which represents almost half of the region's gross agrarian product. Two phenomena in particular should be pointed out:

- the constant reduction in rearing dairy cattle (a reduction of 19% in the number of cows between 1980 and 1987), accompanied by a notable increase in beef cattle;
- the tendency to concentrate livestock rearing (particularly of beef cattle) in limited territorial areas and in a limited number of farms.

Thus on the one hand there is a qualitative change in animal excrement, with an increase in the production of liquid rather than manure, and on the other hand, a reduction in the areas over which the manure is distributed, with an overall increase of dispersion into the atmosphere of the nitrogen and phosphorus contained in it.

This phenomenon appears to be all the more a cause for concern if one considers that, historically, livestock rearing was most widely practised on the permeable land above the plain, close to the springs, where the land's high degree of permeability, frequent rainfalls and the availability of water encouraged the development of meadow cultivation and hence cattle rearing (5).

Livestock rearing in the Veneto region has thus become concentrated in areas with greater environmental risks. This is all the more worrying if one considers that:

- livestock farms, by their nature, tend to use larger amounts of chemical and organic fertilizers than farms that merely produce hay, in that they consider the transformation value of the vegetal products rather than their market value;
- the tendency to concentrate the cattle in a limited number of cowsheds, if not accompanied by a proportional increase in the amount of cultivated land, means that the farm becomes increasingly dependent on external suppliers for the purchase of feed for the cattle; in this situation the farmer's expenses are such that he tends to obtain the maximum possible yield from his farm, even by increasing the use of chemical products above the point where the cost of the input is equal to its marginal productivity;
- given the present costs of chemical fertilizers and of the structures for storing animal excrement, and the cost of spreading the liquid, it is more profitable for the livestock farm to use chemical fertilizers and to spread the animal manure over the territory at the lowest cost possible.

The increased use of chemical products and the transformations in the livestock sector have thus brought about a growing impact of agricultural activity on the environment, causing a number of serious environmental crises, such as the closure of various wells due to the presence of atrazina and the phenomena of eutrophisation of the Venetian lagoons and the Adriatic sea.

2.3 Agriculture and the environment in the hill and mountain areas

The hills and mountains represent almost 44% of the regional territory and hence take on a fundamental role in the environmental equilibrium in Veneto.

Here farming and rearing have an essential role to play in conserving the territory and landscape and the evolution of the environmental situation appears to be closely connected with the dynamics of the primary sector.

The gradual spread of uncultivated meadows (G.Franceschetti, 1984), the spontaneous expansion of woodland and the degradation of certain hydraulic systems in the hills are the most evident aspects of the crisis in agriculture in the Veneto hills and mountains, a crisis originating, moreover, from a range of historical and socio-economic factors including:

- the high degree of fragmentation of holdings;
- ageing of farm workers;
- scarce competitiveness with respect to the plain, due to the absence of adequate technology to deal with the specific problems of mountain farming;
- the almost total lack of dispersion in farming activities, concentrated almost exclusively on rearing dairy cattle which often makes it impossible to supplement the farm income with off-farm activities.

In a sense one can conclude that the reduction in the amount of cultivated land may be a natural regression after centuries of excessive pressure on the territory. On the other hand, one cannot ignore the fact that tourism and recreational activities, concentrated on the supply of environmental resources, have an important role to play in the mountain economy. Thus the promotion of farming and rearing in the hills and mountains becomes a necessary condition for bringing new life to the economy as a whole in these areas.

3. AGRICULTURAL AND ENVIRONMENTAL POLICIES IN THE VENETO REGION

The general objective of public intervention in the field of agricultural territory and the environment is to encourage allocation of resources for different purposes in order to obtain maximum utility for present society and the future generations. Given this objective, the public operator should correct the insufficiencies of the market which, as is well known, is unable to make correct evaluations of the so-called externalities of the economic process or of the demand for conservation of natural resources for present or future use. In order to achieve this objective, the public operator may adopt various instruments of environmental and territorial policy which, as far as agriculture is concerned, can be summarised as follows:

- direct intervention on the price system, aiming at making the environmental costs of specific cultivation practices endogenous;
- introduction of economic incentives of various kinds, according to the environmental features of the territory;

- introduction of constraints regarding the use of resources (for example, limitations regarding building, systems of stocking livestock refuse, types of crops to be sown in specific areas, establishment of nature parks and reserves, etc.);
- intervention in the field of technical assistance and scientific research aimed at reducing the impact of agricultural practices on the environment and landscape;
- intervention aimed at making the use of territorial resources more efficient by modifying the criteria of their reallocation among alternative demands when defining territorial and environmental policies;
- intervention in favour of farming and rearing activities having a low environmental impact, or which play a role in environmental and landscape conservation (for example, policies aimed at promoting agriculture in the hill and mountain areas, promotion of biological products, etc.);
- application of direct intervention in areas owned by public bodies.

Not all of these policies can be applied at regional level, due to the limitations posed by present legal and administrative regulations, and to the growing reduction in the regional authorities' margins of operation in the field of agriculture as a consequence of recent developments in Community policies. Thus, in practical terms, the regions cannot intervene on prices, nor can they make independent decisions regarding direct incentives to agriculture in specific territorial contexts.

With regard to the specifically environmental aspects, the region has applied a series of regulations which only partly take account of the impact on agricultural policies. Some of the typically inter-sectorial policies applied outside the agricultural sector (for example, in the fields of urban planning, nature parks and reserves, recreational activities, etc.) nevertheless have an effect on agriculture, in the sense that they influence the type of farming that can be carried out in a specific environmental context, as well as effecting the price system for agricultural products and the productive factors (6).

The role of the Veneto Region in requalifying the environment by means of correct use of agricultural activities and conservation of natural resources thus takes on notable significance. One should not underestimate, however, the often determining role played by Community policy regarding agricultural prices (7).

We shall go on to examine those regional policies regarding the environment which have a more direct influence on the agricultural sector, referring specifically to the direct effects that such policies may have on the farms.

3.1 The general law regarding intervention in the primary sector

Before analysing the regional authority's policies with regard to the use of environmental resources in agricultural areas, we shall refer briefly to the regional law no. 80/1988, "The Regional Law on Intervention in the Primary Sector" and the related "Agricultural and Food Project" (Veneto Region, 1980). This general law regarding the primary sector defines the objectives and strategies of regional policy on agriculture. The law tends to insert all the region's powers regarding agriculture in a unitary planning and legislative document. In particular, the law

- defines the criteria, modalities and priorities to be adopted for the concession of regional financing;

- includes the Area Plan of Agricultural Development in regional legislation; this is an instrument aimed at defining and coordinating initiatives of agricultural development in the various geographical and territorial areas of the region;
- sets up a regional technical assistance service, defining the criteria for planning research and experimentation to be carried out at regional level;
- defines the outlines of investments at farm or above-farm level which may benefit from regional contributions.

While the law defines the instruments of regional policy, the "Food and Agriculture Project" indicates the objectives to be pursued during the first four years of the law's application (8).

Despite the fact that it is aimed entirely at increasing agricultural production - and is hence out of date with respect to more recent Community measures - the law contains a number of elements of interest from the environmental point of view, including:

- the objective of harmonising, by means of the Area Plans of Agricultural Development, territorial planning undertaken by the boroughs with the actions of agricultural policy, in order to achieve a radical change - which unfortunately has not taken place in reality - in the normal practice of preparing instruments of urban planning. According to article 14 of the regional law no. 88/1980, the borough councils should "adapt their instruments of urban planning, taking account of the territorial choices indicated in the Area Plan of Agricultural Development";
- the attempt to set up an operative link between experimentation and technical assistance, so that they play a functional role in the overall aims of regional agricultural policy;
- "territorialisation" of a part of the incentives, in order to encourage the development of certain agricultural productions in the most suitable areas; this allows one to foresee the possibility of environmental planning of agricultural policy intervention in the future;
- recognition of the specific features of the hill and mountain areas and of the need to undertake specific action for revitalising and promoting the primary sector as a premise for conserving the environment and landscape.

However, it should be pointed out that these positive elements have had little or no effect in reality, as the definition of new functions, objectives and strategies is of little use if it is not accompanied by reorganisation of the public body responsible for applying them in practice. The difficulty of actually spending the amounts set aside in the balance sheet (9) in many ways reveals the tendency of the bureaucratic apparatus to carry out those interventions for which it is best equipped in cultural and organisational terms (10).

3.2 Regulations on the use of environmental resources and the landscape

This group of regulations includes measures which are not aimed at introducing elements of efficiency into the actions of public and private operators, but rather at limiting their range of action at territorial level. The main objective of such laws and regulations is to define which interventions and uses are permitted in a specific territorial area. The principal regulations in this group are as follows:

- regional law no. 44/1982, "Regulations on quarries";

- regional law no. 40/1984, "New regulations for the establishment of regional nature parks and reserves",
- regional law no. 33/1985, "Regulations for environmental protection",
- regional laws nos 61/1985, "Regulations on the state and use of the territory" and 9/1985 based on national law no. 341/1985;
- the Regional Territorial Coordination Plan passed by the Veneto Region Council in December 1986, yet to be converted into law.

The five laws which are briefly summarised in tab. 1, do not directly define constraints regarding the environment and landscape, but simply set down the criteria to be adopted in this field, while instituting operative and planning instruments and defining their contents.

Table 1. Outline of the major laws and regulations applied in the Veneto region regarding constraints on the use of environmental resources.

Title

Regional law no. 44/1982, "Regulations on quarries".

Purpose

Regulation of quarrying in order to "achieve correct use of resources in the context of rigorous protection of the environment in its physical, pedological, landscape and monumental components and maximum conservation of farmland" (Art. 1).

Planning instruments

The objectives foreseen will be pursued through rigorous planning of excavation by means of:

- the regional plan of quarries,
- the provincial plan of quarries,
- the provincial programme of excavation,
- the cultivation project for the specific quarry.

Implications for the agriculture-environment relationship

By introducing planning procedures into quarrying, the law may in future reduce the impact of this activity on agriculture.

In particular, the law imposes that the cultivation project for each single quarry should define the mode of reconversion of the excavated areas to farmland.

Moreover, excavation should not uncover the ground water. This will reduce the risk of pollution of deep water by herbicides, fertilizers and liquid manure used in agriculture.

Title
Regional law no. 40/1984, "New regulations for the establishment of regional nature parks and reserves".

Purpose

The law was passed in order to "ensure conservation and valorisation of the natural environment in areas of particular landscape, naturalistic and ecological interest, as well as to promote scientific research, to allow for social use of the resources and to create, particularly in the rural and mountain areas, better living conditions for the local community" (Art.1).

Planning instruments

The law foresees the establishment of nature parks and reserves of regional and local interest (articles 7 and 27). Management of the parks and reserves is carried out by means of the "Environmental Plan" (art. 9) which should indicate:

- the areas where nature reserves (general or special) are to be established, woodland, pastures and farmland, penetration areas;
- actions of conservation and requalification;
- areas to be expropriated for building service structures;
- constraints and limitations on the activities carried out in the park;
- time schedule and mode of ceasing activities that are incompatible with the park;
- modes and forms of social use of the resources;
- compatible productive activities in forestry and farming.

Implications for the agriculture-environment relationship

The law defines the procedures for establishing the regional parks and reserves as well as the criteria and instruments for managing them, but does not identify any of these areas, leaving this task to the regional council which approved the Regional Territorial Coordination Plan.

Though the law has the undoubted advantage of defining the instruments for undertaking active policies of environmental conservation, it has a largely urbanistic foundation which might reduce its effectiveness in conserving and requalifying the environment in the cultivated areas which will form a significant portion of the parks.

The law does not state which actions will be undertaken in favour of agriculture, nor the limitations that will be imposed on it. This vagueness justifies the concerns about the establishment of protected areas and the opposition often expressed by farmers working in such areas.

Title
Regional law no.33/1985, "Regulations for environmental protection".

Purpose

The law was passed in order to protect certain environmental components which are not covered by any specific regional law. In particular, the law deals with:

- emission into the atmosphere of smoke, gas, dust and smells deriving from any kind of settlement;

- the emission of vibrations, noise and electro-magnetic radiation;
- the use of surface and ground waters;
- direct or indirect discharge of any type of residues in surface waters;
- disposal of all types of refuse;
- the realisation of works having an important environmental impact.

Planning instruments

The law introduces some new instruments for planning environmental resources:

- the regional plan for the environment;
 - the regional plan for improving the quality of the atmosphere;
 - the regional plan for improving the quality of the waters;
 - the general plan for refuse disposal.
- The law also introduces the evaluation of environmental impact into the legislative system, though this aspect was later superseded by the application at national level of EEC directive no. 337/1985.

Implications for the agriculture-environment relationship

Despite the importance of some of the mechanisms it introduces, this law appears to have little influence at present on agricultural activities. The indications regarding the contents of the specific plans appear to be rather general and it is difficult to foresee to what extent they could contribute to reducing the impacts of agriculture on the quality of the waters and the atmosphere.

Title

Regional law no. 61/1985, "Regulations on the state and use of the territory".

Purpose

The law regulates building and urban development. It also sets down a number of regulations regarding protection of the landscape and environment and defines the time schedules and mode of application of land planning in the Veneto region.

Planning instruments

The planning instruments are as follows:

- the Regional Territorial Coordination Plan (R.T.C.P.);
- the Provincial Territorial Plan (P.T.P.);
- the Borough Development Plan.

Implications for the agriculture-environmental relationship

The law leaves the task of defining the major regulations concerning environmental protection to the R.T.C.P., by means of identification of the parks and reserves and definition of a series of regulations and prescriptions regarding landscape conservation which the plans at lower levels are obliged to respect. It can be noted, however, that the law states that the P.T.P. should "identify the areas prevalently used for agricultural and forestry purposes and for specialised farming" (art. 6) in order to apply protective measures. Moreover, when

drawing up the development plans, attention should be paid to protecting agricultural areas (art.9).

Title

Regional Territorial Coordination Plan (R.T.C.P.) (Veneto Region Council, 1987).

Purpose

The aims of the plan are as follows:

- identification of areas of interest in terms of nature and wildlife at regional level;
- analysis of the physical characteristics of the territory and definition of the relative regulations regarding the use of resources;
- identification of the areas for setting up nature parks and reserves and the temporary protective regulations which will be applied until the environmental plans are defined by the relative managerial bodies;
- definition of service systems, infrastructures, public works and relative protected areas;
- definition of the constraints and prescriptions prevailing on the sectorial regional plans and on the instruments of urban planning at lower levels.

Planning instruments

The R.T.C.P. does not propose new planning instruments as it lays down regulations and directives which apply to the territorial plans at borough level. Moreover, it provides indications regarding the areas for which landscape plans should be applied.

Implications for the agriculture-environment relationship

The R.T.C.P. is in many ways the most important instrument proposed so far in the Veneto region with regard to environment and landscape protection and also as far as agriculture and forestry are concerned. For the first time environmental protection is presented as a strategic objective to be respected by both public and private operators. The R.T.C.P. thus provides a general outline of all the regulations which should be respected for this purpose.

The effects of this group of regulations on agricultural territory are not insignificant.

The areas involved in the establishment of regional parks and reserves represent approx. 10% of the regional territory and it can be estimated that they cover at least 5% of cultivated farmland in the region. There are already some regulations enforced in the area prohibiting land reclamation works, interventions modifying the waterway system, conversion of woodland to cultivated land and the introduction of animal and vegetal species that might cause ecologically damaging alterations. Moreover, the construction of rural buildings is also prohibited, with the sole exception of houses which in any case may not exceed the cubature ratio of 0.001 cum/sq.m.

The plan also sets down that, in environmentally sensitive areas, the construction of large livestock holdings should be limited to cases in which the liquid manure can be disposed of without causing damage to the environment.

As well as having a number of positive elements, the R.T.C.P. presents some basic limitations.

Above all, it does not pose any restrictions to the borough development plans, plans which were drawn up without any regard for conserving the environment and landscape. Thus one can foresee that application of these plans would partly distort the directives of the R.T.C.P.

Moreover, protection of the agrarian landscape is seen largely from the architectural point of view, neglecting the fact that this can only be achieved by conditioning farmers' choices. Thus no effective instrument is envisaged for controlling landscape transformations.

Finally, one should point out a certain rigidity in the procedures proposed for protecting the landscape and environment. The R.T.C.P. in fact leaves the task of establishing protective actions to other laws or to the somewhat complex definition of other plans.

3.3 Intervention aimed at improving efficiency in the use of territorial resources.

The rapidity with which the process of urban growth took place in the Veneto region and the absence of efficient territorial planning caused notable wastes of resources, damaging both the agricultural sector and the community. Though somewhat belatedly, in 1978 the Veneto region began to introduce methodological regulations and procedures aimed at protecting agricultural productions and the rural territory from urban expansion. These interventions have a clearly environmental sense, in that they tend to limit the transfer of resources to irreversible uses (such as urbanisation) in conditions of equal obtainable benefits.

The reduction in the consumption of agricultural land for urban purposes in any case has a positive effect on the environment as it provides greater elasticity in environmental management and improves the hydraulic state of the territory. Moreover, the agrarian areas contribute to reducing a part of the atmospheric and water pollution and provide possibilities of recreation and leisure activities, thus improving the quality of life.

The Veneto region has undertaken the following measures for this purpose:

- regional law no. 24/1985, "Protection and building in rural territory";
- regional resolution no. 5833/1986, "A technical guide for classifying the territory";
- regional resolution no. 506/1989, "Methodological guide for elaborating general plans of reclamation and protection of rural territory".

Regional law no. 24/1985, "Protection and building in rural territory", is aimed at reducing unjustified construction of buildings in rural areas, linking the possibility of building to actual cultivation of land and the type of crops grown. As a consequence there was a notable reduction in the construction of new buildings in agrarian areas, accompanied by restoration of existing buildings (11).

Moreover, the law presents some contradictory aspects which have allowed certain speculative phenomena to continue on cultivated land, with consequent increases in land prices. This of course limits the possibility of expansion for the better organised farms.

The regional resolution no. 5833/1986, "Technical guide for classifying rural territory" (D.Agostini, G.Franceschetti and T.Tempesta, 1986), was prepared in order to unify the methodologies of analysis of agrarian areas when drawing up borough development plans and to introduce criteria of economic efficiency in changes in land use.

The guide is based on the premise that the subtraction of land from the agricultural sector has different costs according to the characteristics of the soil, farm investments and the characteristics of the farms and landscape. Thus, with a detailed analysis of the territorial situation referring to the above elements, it is possible to reduce the costs deriving from changes in land use.

The quickest possible methods are thus indicated for applying the six basic thematic maps (12) to the borough urban plans with the aim of minimising the costs of subtracting land from agriculture.

The guide has been widely used in the Veneto region, to the extent that, at present, it has already been applied in about 20% of the 582 boroughs in the region, while in 55% of the boroughs the studies foreseen by the guide are nearing completion.

It cannot be denied, however, that even the availability of a detailed and articulated basis of territorial information does not always lead to wise decisions in territorial policy. Analysis of some of the planning instruments adopted using this methodology in fact shows that the decisions taken by local administrators are often negatively influenced by political factors.

These limitations were resolved with the later resolution no. 506/1989, "Methodological guide for elaborating general plans of reclamation and protection of rural territory" (P.Parigi-Bini et al, 1989), produced in accordance with art. 15 of regional law no. 3/1976. Here the task of overseeing decisions in territorial planning is given to the "consorzi di bonifica" or farmers' associations. For the first time the agricultural sector has an important role to play in decisions regarding land use.

According to the indications laid down in the guide, the farmers' associations should exercise control over the territorial plans, checking their impact on territorial resources, agricultural activities, the quality of the waters and the hydraulic system. Moreover, using the data at its disposal, the farmers' association should be able to make proposals for protecting areas of environmental and naturalistic interest, for undertaking actions of environmental requalification and for controlling that the land is suited to the spread of liquid manure.

3.4 Intervention in favour of farming and rearing activities and productions having a low environmental impact.

Since the early eighties, with the application of measures in favour of mountain farming in the regional law no. 88/1980 and the successive "Mountain Project" (Veneto region, 1983), the Veneto region has undertaken actions aimed at promoting farming and rearing activities with low environmental impacts or which have an important role to play in maintaining the hydraulic and environmental equilibrium. The "Mountain Project", approved by regional law no. 29/1983, places the subject of development of mountain agriculture in the context of revitalisation and overall inter-sectorial growth of the mountain economy. In other words, as well as confirming the central role of the primary sector in defending the mountain environment, a global strategy is defined

which, by means of integration between different activities and sources of income, provides improvements in the living standards of rural families, thus stopping migration from the valleys. As well as the actions for developing the primary sector, other measures are planned with regard to tourism and handicrafts and directives are being prepared for a review of current legislation in order to make it possible to undertake inter-sectorial development projects.

Alongside the policies promoting mountain agriculture, with regional law no. 11/1988 the Veneto region has recently begun to take action aimed at valorizing agricultural products which, "given their area of production, system of production and processing and other intrinsic characteristics, provide particular guarantees of the consumer's interest" (art.2). This law will allow producers to apply a collective regional stamp (known as "Paniere Veneto") on those products conforming to the above criteria. The intention is thus to promote products which offer guarantees for health and the environment.

3.5 Actions in the field of technical assistance and scientific research

Scientific research and divulgation of the results obtained from it perhaps represent the most important field of intervention for achieving long-standing improvements in the relationships between agriculture and natural resources.

It is only through scientific research that one can identify productive techniques that respect the environment and are at the same time profitable from an economic point of view.

National law no. 382/1975 and the successive decree of application no. 616/1977 transferred to the regional authorities the administrative functions regarding research and experimentation of regional interest. Though it is not easy to distinguish between experimentation of national or regional interest, it seems that the legislator's intention is to give the regions responsibility for research and experimentation aimed at satisfying a prevalently local demand.

The sums set aside by the Veneto region for financing university research institutions and experimental centres are not negligible, even though in 1989 they represented only 0.5% of regional expenditure on agriculture. Careful qualitative examination shows that the regional investments in research aimed at guaranteeing the diffusion of cultivation practices with low environmental impacts represent just 14% of the total expenditure. Less than 1% of the investment in research was spent on alternative models of farming which would be compatible with the environment and economically profitable. No research was planned into the economic or organisational constraints which make it impractical to adopt certain productive techniques with low environmental impacts or to use organic substances from the livestock farms as manure for the soil.

The Veneto region's commitment in the field of technical assistance is rather significant. In 1985, for example, 10% of regional expenditure in the field of agriculture was spent in this manner.

This commitment took on a clear direction in favour of research into ecologically compatible cultivation techniques, with the regional council's approval of the "Integrated programme of

phytopathological control" (D.G.R. 1169/1988) (Veneto region council, 1988).

The programme is aimed at the following general objectives:

- to guarantee public health and better product quality and hygiene;
- to reduce the environmental impact and protect resources, particularly water and the soil;
- to improve and reduce the costs of crop defence, as well as reducing the health risks for farm workers.

These objectives can be achieved by means of:

- reduction in the use of chemical pesticides,
- coordination and control of the use of chemical pesticides;
- development and diffusion of alternative means of parasite control other than chemicals.

At present about 10% of farmland cultivated with vines or fruit trees benefits from a technical assistance service for guided pest control and, in limited areas, even integrated control (13).

By extending the technical assistance service and using meteorological data provided by satellite, the programme of phytopathological defence aims to achieve reductions in the use of insecticides and fungicides which may vary between 15 and 40% according to the type of crop.

4. CONCLUSIONS

With the law approving the Second General Development Plan (regional law no. 6/1989), the Veneto region has confirmed a line of territorial policy aimed at guaranteeing better use of natural and environmental resources. In particular, the law confirms the commitment to "a better equilibrium between agricultural management of the land and other implicit objectives such as consumer protection, soil defence, conservation of diversity of cultivations and landscape" and to recreate "alternative solutions to new technologies aimed at improving the relationship between the productive process, income and environmental protection" (Veneto region, 1989, par. 8.1.1.).

New laws are currently being prepared with the aim of applying these new guidelines in practice in the agricultural sector (15).

A number of limitations and difficulties can be noted with respect to this future commitment. For example, in some of the above-mentioned laws there is a systematic tendency to defer action to later operative plans, without quickly adopting measures which would bring about significant changes in the use of resources. Postponement of action to future projects often leads to a situation of immobility due to various factors such as:

- the long time schedules for elaboration due to both technical and administrative problems;
- the even longer time schedules for discussion at political level of the various plans and projects.

Moreover, little attention is paid to reviewing current measures in economic and territorial policies in an environmental sense. For example, there is no reconsideration with regard to the environmental effect of public incentives to the agricultural sector, despite the fact that past experience has shown how certain transformations in the environment and landscape have taken place with the help of public financing.

Finally, intervention in the primary sector still takes little account of the various territorial and environmental contexts and in general there is little coordination between territorial planning and agricultural policies in order to avoid the contradictions arising between them.

At operative level there does not appear to be sufficient awareness that the "environmental problem" involves a review of the mode of intervention in the management of resources, in a unitary vision of the instruments of control and transformation of the environment. Thus, from the environmental point of view, the instruments of territorial and agricultural policy interact with one another and it is not possible to undertake effective actions of control and direction without integrating their application.

NOTICE

(1) The first reports on the environmental effects of modern agriculture date back to the sixties (B.Commoner, 1972; R.Carson, 1963); however it was only in the eighties that large sectors of society became aware that present agricultural techniques could not be adopted in the long term, due to the risks involved for the ecosystems and public health.

(2) The majority of boroughs in the Veneto region adopted an urban plan in the mid-sixties and even today about 40% of the boroughs have not applied a general urban plan but simply a partial or building plan. This phenomenon has had a significant influence on the amount of land subtracted from agriculture. For example, with regard to the metropolitan area of the city of Treviso, it has been observed that only 25% of the changes in land use between 1955 and 1982 were in conformity with an urban plan. While waiting for urbanisation, the rest of the land was either left fallow, cultivated occasionally or was fully productive. The application of the instruments of urban planning moreover brought about a dramatic reduction in the consumption of land per new resident, passing from 882 sq.m. to 568 sq.m. (G.Franceschetti, T.Tempesta, 1988).

(3) For example, with reference to the metropolitan area of the city of Treviso, while urbanised areas grew by 3331.6 ha between 1955 and 1982, there was a notable expansion in the phenomenon of uncultivated land (128 ha) or land surrounded by urban areas (692 ha) (G.Franceschetti, T.Tempesta, 1988).

(4) It should be noted that, after reaching a peak towards the late eighties, the use of chemical fertilizers has slightly decreased (T.Tempesta, 1988a).

(5) In this past there was an environmental rationale for this, in the sense that the permeable land in the upper plain, with its notable oxydative capacity, required large amounts of organic substances in order to be cultivated.

(6) There are countless examples of this. Urban plans and regulations may have a direct effect on the value of the land which goes well beyond the areas subjected to changes in land use. The limitations posed on the setting of certain productions may make them impossible to practise in certain parts of the territory.

Transport policies and intervention in the field of road building directly condition the cost of productive factors. The establishment of a nature park or reserve may involve the need to change crop production and, on the other hand, may cause a rise in the value of land or rural buildings.

(7) The environmental impact of price policies is significant. For example, guaranteed protection for cereals and the low cost of chemical fertilizers have, on the one hand, brought about the disappearance of certain crops such as medicinal herbs which nevertheless guarantee better pest control and less use of chemical fertilization and, on the other hand, have caused a gradual separation between crops and livestock rearing, given the

fact that imported feed (which is not subject to EEC customs control) is cheaper than locally produced fodder (O.Ferro, 1989). Moreover, this has contributed to a worsening of the crisis in the mountain areas where livestock rearing is only economically viable if low cost fodder is available.

In many ways the major environmental problems in agriculture in the Veneto can be attributed to Community policies with regard to agricultural prices.

Moreover, it can be estimated that the amount spent at EEC level for sustaining the prices of maize, wheat and soya cultivated in Veneto is well above the total sum of subsidies to agriculture provided by the regional authorities.

(8) The "Food and Agriculture Project", representing the regional version of the analogous national project, consists of the following sub-projects:

- livestock rearing,
- fishing and fish-farming,
- horticulture, flowers and fruit farming,
- vines and wine production,
- industrial crops,
- hill and mountain territory,
- irrigation,
- research, experimentation and technical assistance.

Each of these sub-projects specifies: the actions to be undertaken, the objectives to be achieved, the subjects the actions are aimed at and the intervention to be carried out in order to achieve the objectives themselves.

(9) Regional expenditure on agriculture has reached somewhat high levels. In the years 1985-87 subsidies for farming and rearing exceeded 15% of the added value in this sector. In practice, however, little more than a third of this amount was actually spent (F.Sotta, D.Novach, 1988).

(10) This is a kind of "law of inertia" in the bureaucratic apparatus which contributes to lengthening the interval between the moment when a problem is identified and the time when the public operator manages to provide concrete measures for resolving it. On the other hand, this "law of inertia" encourages a worrying tendency for public intervention in agriculture to become deprived of its original purpose.

(11) A survey undertaken in a number of boroughs in the Veneto shows that, after the application of regional law no. 58/1978, the average number of new houses built on the farms studied fell from 9.2 to 3.8. This reduction was all the more dramatic in farms which employed less than 0.85 labour units, to the extent that on the part-time farms where 40% of the new housing had been built before 1978, a very small number of building projects were carried out after that date. There is a significant tendency, moreover, to restore existing buildings. The ratio of volumes of new buildings to volumes of restored or redeveloped houses passed from 1.38 to 0.51 (T.Tempesta, 1988b).

(12) The following maps are included in the guide:

- Map of primary activities and structures,
- Map of agronomic land classification,
- Map of intensive and quality cultivations,

- Map of investment protection and territorial integrity,
- Map of socio-economic farm classification,
- Map of agrarian landscape.

(13) Guided pest control consists of rationalisation of the distribution of pesticides by means of knowledge of the biology and epidemiology of the pests. In this way pesticides are not sprayed at pre-arranged intervals, but only when trends in the climate and infestations make it necessary to use chemical products.

Integrated pest control allows for a further reduction in the use of chemical products by adopting certain agronomic practices or by using species that compete naturally with the parasites.

(14) This refers in particular to the new general law on intervention in the primary sector and a law aimed at regulation of the so-called "biological" products.

References

- D. Agostini, G. Franceschetti, T. Tempesta (1986), Guida tecnica per la classificazione del territorio rurale, Venezia.
- R. Carson (1963), Primavera silenziosa, Feltrinelli, Milano.
- Commissione delle Comunità Europee (1985), Prospettive per la politica agricola comune. Libro verde della commissione, Bruxelles.
- Commissione delle Comunità Europee (1988), Ambiente e agricoltura, Comunicazione della Commissione, Bruxelles.
- B. Commoner (1972), Il cerchio da chiudere, Garzanti, Milano.
- G. Franceschetti (1984), Le terre incolte e abbandonate nel Veneto, in Regione del Veneto-Giunta Regionale, Terre incolte nel Veneto, Venezia.
- G. Franceschetti, T. Tempesta (1988), Domande di suolo per usi extra-agricoli. L'analisi in un'area metropolitana del Veneto, in CNR/IPRA, Interazione e competizione dei sistemi urbani con l'agricoltura per l'uso del suolo, monografia n. 29, Edizioni Pitagora, Bologna.
- O. Ferro (1989), Il set-aside nella prospettiva italiana e veneta, comunicazione al Convegno "Il set-aside. Esperienze internazionali. Prospettive in Italia e nel Veneto", Ente Fiera, Padova.
- Giunta Regionale del Veneto (1987), Piano Territoriale Regionale di Coordinamento, Venezia.
- Giunta Regionale del Veneto (1988), Programma integrato per la difesa fitopatologica, Venezia.
- P. Parigi-Bini, P. Bon, G. Paolin, A. Rinaldo, T. Tempesta, D. Vianello (1988), Guida metodologica per la elaborazione dei piani generali di bonifica e tutela del territorio rurale, Giunta Regionale, Venezia.
- Regione Veneto (1980), Progetto agricolo-alimentare (periodo 1979-1982), Venezia.
- Regione Veneto (1983), Progetto montagna, Venezia.
- Regione Veneto (1989), Piano Regionale di Sviluppo, Venezia.
- F. Sotte, D. Novach (1988), Libro bianco sulla spesa delle regioni in agricoltura, Edizioni del Grifo, Montepulciano (SI).
- T. Tempesta (1988a), Il consumo di prodotti chimici nel Veneto, in Veneto Agricoltura n. 4.
- T. Tempesta (1988b), Un'analisi dell'impatto della normativa sull'edificabilità in alcuni comuni campione del Veneto, in CNR/IPRA, Interazione e competizione dei sistemi urbani con l'agricoltura per l'uso del suolo, monografia n. 29, Edizioni Pitagora, Bologna.