



Ministero per le  
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**INEA**

# AGRI-ENVIRONMENTAL MEASURES IN ITALY.

*State of application  
of reg. (EEC) 2078/92*

***October 1999***

*Istituto Nazionale di Economia Agraria*

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Ministero per le Politiche Agricole e Forestali

Direzione Generale delle Politiche Comunitarie e Internazionali  
**OSSERVATORIO SULLE POLITICHE STRUTTURALI**

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**ISTITUTO NAZIONALE DI ECONOMIA AGRARIA**

The subject dealt with in this executive summary have been widely analysed in two evaluation reports about agrienvironmental measures published in 1999 ("*Le misure agroambientali in Italia. Analisi e valutazione del reg. CEE 2078/92 nel quadriennio 1994-97*" edited by INEA). The national report, based on a comparative analysis of the regional applications, is an attempt at identifying the development factors of environmentally sound practices and the weakness of the regional agrienvironmental programming. The regional volume is composed of 21 reports analysing the state of application of reg. 2078/92 in the 21 Italian regions.

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## **THE AGRI-ENVIRONMENT PROGRAMMES**

The regulation foresees the development of zonal programmes containing aid schemes, suited to regional sizes according to the local characteristics of natural environment and countryside along with horizontal measures throughout the whole national territory. Only after the approval of the zonal programmes by the Commission, regional administrations can implement the aid scheme. Following the usual institutional procedure in force in Italy, the Ministry of Agriculture delegated the preparation of zonal programmes to the individual regions, avoiding to take into consideration the horizontal measures. The 21 regional programmes were presented to the Commission by July 1993 with a separate national aid scheme for training courses to consultants. In the second half of 1993 and in 1994 regional officials had had several meetings with the Commission in order to make programmes adapted to Community rules and limits on expenditure. For this reason only 13 regions implemented the regulation in 1994 and other 5 regions begun during 1995. In 1996 only Campania was not able to implement any measures because the zonal programme has not been approved until 1997. Neither has the national traineeship aid scheme been carried out.

Most programmes show a zoning of areas with different environmental sensitiveness in order to grade the incentives payments and farmers' application priority. Farmers in protected areas have the highest priority and received the highest scheme payment as well as organic farmers. Environmental sensitive area (ESA) definition however does not exclude the farms not belonging to these areas from sharing in the programme. It is therefore a halfway situation between full segregation in well defined areas (such as ESA) and a more flexible integration of environmental measures all over the countryside.

The zonal programmes show a list of measures directly referring to the aid scheme (art. 2 of Regulation) in almost all the Regions. Compensations for the substantial reduction of chemical inputs or for other extensification methods (A and B measures) are envisaged in almost all the Regions, whereas the stocking rate reduction (C) is not mentioned in 6 Regions. The other ecocompatible methods (D), the upkeep of abandoned land (E) and the 20-year set aside (F) are envisaged in most programmes. The aids foreseen for public access land management (G) have been on the contrary unsuccessful (table 1).

Table 1 - Classification of the measures based on the inclusion on zonal programmes

	Categories of the measures	Number of zonal programmes
A1+A2	to reduce substantially use of fertiliser and/or plant protection products	15
A3+A4	to introduce or continue with organic farming methods	20
B	to change or to maintain to more extensive forms of crop or to convert arable land into extensive grassland	16
C	to reduce the proportion of sheep and cattle per forage area	15
D1	to use other farming eco-compatible practices, as well as maintenance of the countryside and the landscape	17
D2	to rear animals of local breed in danger of extinction	16
E	to ensure the upkeep of abandoned farmland or woodland	16
F	to set aside farmland for at least 20 years	15
G	to manage land for public access and leisure activities	7
H	Education and training	16

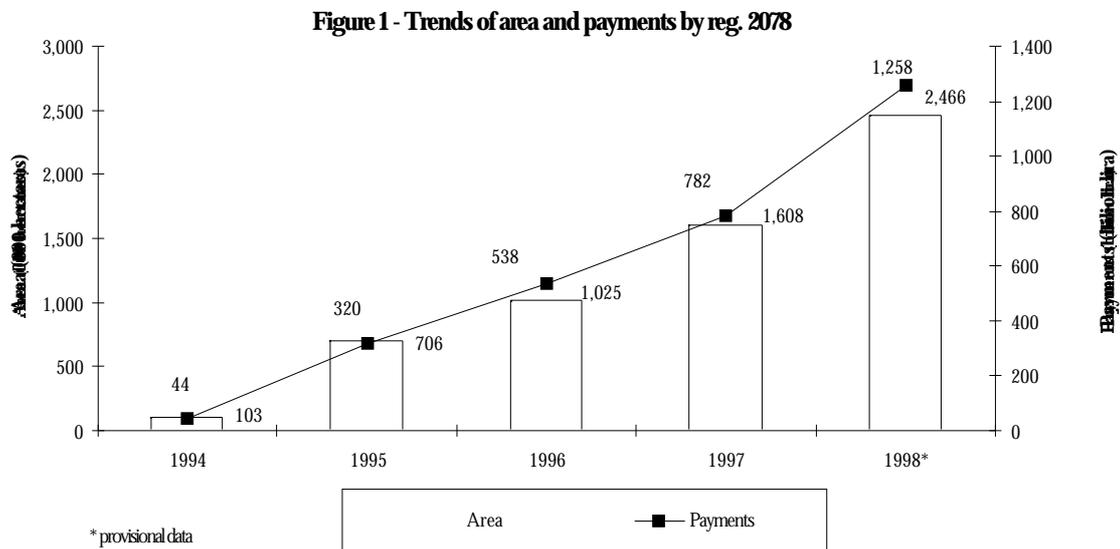
In broad terms, Regulation 2078 contains two objectives, corresponding to two different lines of intervention: one concerns reduction in the negative impact of agriculture on the environment through reduction in the use of chemical products and adoption of eco-compatible practices (largely, measures A, B and C), while the other is aimed at compensating farmers for the positive externalities connected with countryside stewardship and environmental conservation (measures D, E, F and G). The two strategies are extremely diversified at regional level whereas the measures related to the former objective should generally be adopted in the more fertile areas, while the actions aimed at environmental conservation mainly concern marginal areas. The allocation of funds for each measure in relation to the major ecological and land use characteristics of the individual regions does not always appear to be followed in defining the programmes. It seems that Regulation 2078 is basically recognised as an instrument reducing the negative impact of agriculture on the environment. Countryside stewardship is recognised as an essential factor in land use management only in some regional areas (Trento and Bolzano provinces and Valle d'Aosta) where these objectives have been pursued for long time.

#### **THE GENERAL FRAMEWORK OF THE APPLICATION (1994-97)**

At the end of the first four-years' application, Regulation 2078 can be regarded as defi-

nately established in most Italian regions. Also Campania, which till 1996 had not been able to implement the regulation, because the European Commission did not approve the agri-environmental programme, granted the first aids for agri-environmental agreements, in 1997. The area involved by agri-environmental measures attained 1,608,000 hectares, with a yearly increase of about 6-700,000 ha in the last two years, virtually engaging the whole area envisaged by agri-environmental programmes up to 1997.

Besides this result, it is remarkable to note that first evaluations of application in 1998 show a further increase in Italian area over 2,400,000 ha, involving 175,000 applications in total. At the same time, allocated funding, including the national co-financing share, grow proportionally and, in 1998, they amounted to 1,200 billion lire (figure 1).



Specifically, the application region by region up to 1997, shows that half the area involved is located in the North. In the last campaign, however, the greater activity was observed in the South and Islands, where the area involved has doubled. Piemonte is the region showing the widest area involved in agri-environmental measures: almost 300,000 ha. A wide diffusion, in absolute terms, was also observed in Toscana, Sicilia and Bolzano which exceeded 150,000 ha, whereas Lombardia and Sardegna are above the limit of 100,000 ha.

The total area involved, at a national level, is nearly 100% of the one set by agri-environmental programmes, but there are remarkable differences among regions. Compared with expectations, the best result has been achieved in Toscana: in 1997, the application was 5 times higher than the one envisaged. Expectations have been exceeded by nine more regions, whilst four regions were not able to go beyond the 30% fulfilment of the expected area. The high variability of the results achieved is often associated with the

newness of agri-environmental measures, which engaged the regional Administrations in a remarkable planning effort, because of absence of previous experiences in applying agri-environmental policies. Eventually, the best results have been achieved by regions which had already matured similar experiences.

The regulation's impact on agriculture can be assessed, at a glance, by observing the share of the area involved by agri-environmental measures on the total agricultural area in use. At a national level, the agri-environmental measures involved the 11% of the total agricultural area, but this share increase in the three Alpine administrative areas (Bolzano, Trento and Valle d'Aosta) reaching values even higher than 50%. On the opposite, in some regions such as Campania and Abruzzo, the share of agri-environmental measures on agricultural area is substantially insignificant.

The measures envisaged for livestock have met little application. They involved on the whole 36,000 adult livestock units and 3,850 beneficiaries. The figures show two pictures very different each other, depending whether the intervention for endangered breeds or the measure encouraging livestock density reduction is taken into account. In the former, there was a satisfactory response from breeders who succeeded in involving over 30% of the cattle, sheep, goat and horse stock subject to genetic erosion. According to recent evaluation, this livestock is, actually, almost the 1% of the total national amount. Extensification of cattle, sheep and goat breeding, which should, theoretically, have involved a large share of the national livestock, have not had enough diffusion with respect to both total national stock and more careful estimates assessed in agri-environmental programmes.

The pattern implementation of different measures shows three main successful actions (table 2): the reduction of chemical input, accounting 593,000 hectares, the safeguard of natural resources and rural landscape maintenance covering 526,000 hectares and organic farming which attained 311,000 hectares. On the financial side, chemical input reduction and organic farming, in 1997, involved over 75% of the total allocated funds, while expectations were lower than 45%. Among the other measures significant importance was assumed by actions aimed to crop extensification, which have finally overcome their limited diffusion during first years' application, mainly because of the scarce information on restrictions and technical and economic effects they entailed. Instead, farmers neglected the measure concerning the twenty-year set-aside, covering 21,300 hectares only, because the agreement length was too long, as well as the measure regarding recreational land-use, undertaken by Umbria region alone. The distribution of applications according to geographic typology area highlights a specific land differentiation. The measure for chemical input reduction was mostly adopted in Northern and Central regions (respectively 38% and 44% of the whole) whereas the measure for organic farming spread in the South (73%), mainly. The rural landscape maintenance and management is found almost in the North (94%), while the twenty-year land set-aside, farmland and forestland maintenance and management are more widely spread in the South.

Table 2 - Area covered by reg. 2078/92 and livestock unit in Italy by measure

Measures	Italy			North	Centre	South and Islands
	1997 implementation		1994-97 forecasts	1997 implementation		
	ha or LU	%	%	%		
Input reduction (A1+A2)	593,212	36.9	26.8	27.1	77.3	23.4
Organic farming (A3+A4)	310,996	19.3	13.0	4.5	13.5	50.6
Other type of extensification (B)	113,159	7.0	16.5	6.1	3.3	11.6
Maintenance of extensive system and farmed landscape (D1)	525,771	32.7	32.1	60.7	1.4	6.1
Upkeep of abandoned land (E)	40,240	2.5	6.7	1.1	2.4	5.1
Long term set-aside (F)	21,283	1.3	4.0	0.4	1.0	3.2
Public access (G)	3,798	0.2	0.8	0.0	1.1	0.0
<b>Total area</b>	<b>1,608,459</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
Extensification of livestock (C)	3,263	9.1	60.6	5.8	10.2	44.8
Local breeds in danger of extinc- tion (D2)	32,697	90.9	39.4	94.2	89.8	55.2
<b>Total Livestock Unit</b>	<b>35,960</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>

Source: INEA estimation on data of Regional Administrations.

The comparison between the application and expectations, expressed in percent, emphasises a different pattern of diffusion among agri-environmental measures. So far, only two measures have exceeded the area forecasted agri-environmental programmes: it is the actions envisaging chemical input reduction in farming practice or the adoption of organic farming techniques. Also landscape and natural resources husbandry has attained the goal defined in the planning phase. Definitively, less encouraging results come from the other measures which have not greatly stimulated the farmers' interest and have not fulfilled the expectations, in spite of the lower relative weight the agri-environmental programmes assigned them.

#### **THE FINANCIAL SITUATION (1994-97)**

In 1997, the expenditure for agri-environmental measures implementation took a significant part of the expenditure accrued to Italy, under the EAGGF guarantee. Actually, Regulation 2078 became fully operative during 1997, when the overall expenditure increased toward a level definitively higher than in the past. In particular, the share over the whole expenditure carry out by our country, under the EAGGF guarantee budget, increased in one year from below 1% to over 6%. Furthermore, if we consider the entire EU, Italy is,

after Germany and Austria, the third important country as to the whole of implemented expenditure for agri-environmental measures within 1994-97, having obtained 12.8% of the total.

At the end of 1997, the results obtained in the allocation use appeared on the whole good. Total payments actually exceeded ECU 887 million. The expenditure rate - calculated taking into account the payments effected in 1998 as well, but accruing to the arrears of the previous campaigns - exceeded 96%, almost completely making up for the delay undergone especially during the first two years' application. To this purpose let us just consider that, by the end of 1995, the same indicator only marked 20% utilisation. The positive opinion on the expenditure capacity proved by our country, at the end of the first period's application, is slightly reshaped if we refer to the initial endowment that EU had initially granted to Italy. As a matter of fact, during the negotiation of measures envisaged under the regional zonal programmes presented by the single regional and provincial administrations to the Commission, the whole amount granted was modified, and the last endowment approved was about 86% of the initial one allowed under EAGGF guarantee and apportioned among the regions. In particular, in some of them (Lombardia, Abruzzo, Molise, Campania, Calabria and Sardegna) the reduction was significantly higher, mainly because of the difficulty in planning some measures according to the Commission's required parameters. Therefore, by comparing the results achieved with the funding originally available, a payment rate of 82% is shown.

The spending capacity of available financial resources features differently according to the main areas: the Centre and South attained payment rates respectively of 132% and 110%, while the North spent little less than its budget (74% at the end of the four years). The latter result, especially, contrasts with two features: firstly, it should be stressed that in the planning phase the North obtained the largest funding endowment altogether, amounting to 50% of the total. Secondly, all northern regions obtained the programme's approval within 1994, thus the slowing down in fund spending cannot therefore be found in bureaucratic-administrative reasons, as is the case of some southern regions.

As to the regions which showed payment rates higher than 100%, the financial covering of application levels higher than the approved availability has been made possible, since as early as 1996, by a flexibility agreement among regions, promoted by the Ministry and authorised by the EU Commission, as well. According to this agreement, the regions where the application level was higher than envisaged in the planning period, were able to pay off "additional" premia rearranging the financial endowment among other regions where a high delays overcome prevented them to use their allocations entirely.

The resource re-allocation seems to meet the idea of overcoming problems in hindering farmers' adhesion to this regulation. Notwithstanding, it has been argued that such mechanism be more effective in ensuring the efficiency of the expenditure supporting the agri-environmental measures, i.e., the full spending of available resources, than in achieving the agri-environmental objectives implied by the adoption of Regulation 2078.

Table 3 - Expenditure under reg. 2078/92 in Italy by measure

Measures	Italy			North	Centre	South and Islands
	1997 implementation		1994-97 forecasts	1997 implementation		
	mio lira	%	%	%		
Input reduction (A1+A2)	383,458	49.0	31.0	55.1	77.6	24.9
Organic farming (A3+A4)	200,741	25.7	13.9	9.8	13.1	48.4
Other type of extensification (B)	49,494	6.3	11.8	5.2	1.4	10.5
Extensification of livestock (C)	1,234	0.2	5.3	0.3	0.2	0.1
Maintenance of extensive system and farmed landscape (D1)	88,665	11.3	18.5	24.3	1.2	6.0
Local breeds in danger of extinction (D2)	7,830	1.0	1.7	2.2	0.6	0.1
Upkeep of abandoned land (E)	20,719	2.6	5.3	1.4	2.2	4.1
Long term set-aside (F)	27,134	3.5	8.5	1.7	2.3	5.9
Public access (G)	1,900	0.2	0.7	0.0	1.0	0.0
Education and training	979	0.1	3.2	0.1	0.4	0.0
Total	782,154	100.0	100.0	100.0	100.0	100.0

Source: INEA estimation on data of Regional Administrations.

As a matter of fact, the re-allocation process was criticised just under the agri-environmental aspect, stressing that high levels of application may prove the existence of a special convenience in applying certain measures. In other words, the reasons of this profitability may lie on the amount of premium over-compensating farmers with respect to both the commitments required and the income reduction suffered by the participants in some interventions. Therefore, it should be verified if the resource reallocation favouring some areas has fully responded to the achievement of the agri-environmental objectives which urged to the adoption of Regulation 2078. On the other hand, this assessment should be carried out keeping in mind that the flexibility in spending financial resources has increased the adhesion level where the measures proposed found successful opportunities, contributing, at least, to outspread practices more highly compatible with the safeguard of natural environment. Actually, the levels of expenditure, higher than those forecasted, in most cases are ascribed to the great success obtained by the chemical input reduction and organic farming measures. Their adoption have exceeded by far the forecasts in the planning phase, when the strong innovative impulse driving such intervention might have been underestimated.

## GENERAL FEATURES OF THE IMPLEMENTATION

The survey of agri-environmental programmes shows how the *rural and environment context analyses* have different in-depth levels varying region to region, affecting of course the formulation of targets and proposed measures. The reasons are partly due to the lack of adequate scientific knowledge about the relationship between farming and environment and partly to the little consideration given by some administrations to this planning phase. In the next future, efforts should be increasingly aimed at a systematic collection of the information about the interactions between agriculture and environment, available at research centres and extension services and at employing digital cartographic bases organised according to the criteria of geographical information systems.

The general *objectives* established by agri-environmental programmes are often very general. Only, in a few cases, there is a specific connection with the rural development policies, or there are single environment targets concerning a specific natural resource or a specific area of the territory considered. This is the case of alpine regions, where almost all the financial resources have been directed to mountain animal husbandry interventions. The suggestion for interventions about specific environment values in internal areas situated in the central and southern regions was strongly less clear although the abandonment trend in these areas produces significant problems even in terms of environment degradation. On the whole, the dominant trend of these interventions seems to be targeted to reduce the farming negative impact on environment, rather than to remunerate the farmers performing countryside stewardship, whose positive function has so far received little explicit acknowledgement.

Generally the application of measures involves the whole region area and in a few cases only, *zoning* has allowed to limit some interventions to the most environmentally sensitive areas. The scattering of interventions throughout the area is a problem concerning the application of all the measures envisaged by agri-environment programmes. As a matter of fact, there are many doubts about the environmental effectiveness of eco-compatible practices not focused on the most vulnerable areas and concerning a modest percent of the farmland. A greater selection and concentration of the interventions is needed according to the environment sensitiveness of the different areas even if this may reduce the overall number of adhesions. The concentration of the interventions on restricted areas should increase their environmental effectiveness, on the conditions that the limits of the sensitive areas would be well devised and premia could adequately compensate for income losses. With the help of geographic information systems, it is already possible to define the areas on the basis of the most suitable environment parameters, without necessarily adopting local or regional administrative boundaries. The hypothesis of providing incentives preferentially to holding consortia granting the application on adequate land portions and supporting the application with environmental reasons should be carefully assessed in order to increase the effectiveness of eco-compatible practices in a given area. The main local insti-

tutions dealing with land planning should be involved in order to turn a measure merely aimed at a limited number of farms into the environment-requalifying intervention on the whole area.

The *premium level* definition is a critical feature which must be dealt with different criteria according to the areas involved. In the intensive areas more sensitive to non-point source pollution, technical-productive standards or good farming practice codes ought to be defined as a starting point to calculate the actual income losses which should be compensated for. Premia modulation should be extended as well, by widely using the regional extension services information about the structure of costs and incomes as well as the regional farm accountancy data networks. The premium differentiation may also refer to specific holding features, according to schemes already adopted - in the Bolzano province, for instance, where the premium is measured according to the degree of environment disadvantage of each farm. In marginal areas, characterised by semi-natural habitats, the premium should contrast the abandonment trend but, in order to avoid the duplication because of incentives already granted under the regime of income aid for disadvantaged areas, it is especially important to demonstrate that the adoption of special eco-compatible practices enables to achieve significant environment improvements. Eventually, as agri-environmental measures do not explicitly entail the compensation disbursement in a single payment for investment expenditures, it would be appropriate to identify the priority connections with the regime of structure improvement aid, thus favouring the participation of farms carrying out structural adjustments in adopting eco-compatible techniques.

In the application of the measure for chemical input reduction, several specific technical norms have been established, independently by each region referring, when possible, to previous application experiences in this matter, but without adopting homogeneous evaluation and method criteria. Consequently, the *codes of obligations* established for each crop show technical prescriptions and restrictions not always justified by the land and environmental diversities of contiguous regions and differently from what happens in organic farming whose technical rules are codified by a Community regulation. A first solution to the problems emerged during the first years' application was definitely achieved by defining the common technical rules and principles about the formulation of strategies in pest control and definition of the code of obligations. A special *National Technical Scientific Committee* is now entrusted with studying and assessing the correct pest management rules established by each regional code and giving conformity advice considered valid for the Commission's approval.

A further continuation of the Committee's activity in order to enhance and valorise the work carried out so far, is supposed to provide for:

- the diffusion of technical monographs concerning the pest management guideline through specialised press, telematic networks and the creation of a data bank reporting, for each crop and region, adversities, admitted active principles, dose applied, the maximum number of treatments and the possible execution period;

- the definition of an integrated code of practices defining, for each crop, technical rules including the diverse interactions between manure and inorganic fertilising, phytophagous and weed control, rotation and tillage;
- the assessment, through technical parameters and environmental indicators, of qualitative and, when possible, quantitative differences existing between good farming practices and the prescriptions established for agri-environmental measures according to the targets envisaged in agri-environmental programmes.

After the first years' application, the increasing success of Regulation 2078 at a national level, and the enactment of Regulation 746/96 required a harmonisation of *regional control systems*, which had been carried out through the DM (Cabinet order) 159/98 establishing a homogeneous monitoring and sanction framework throughout the national territory and clearly apportioning competencies among the Ministry, AIMA (the State Agency for the Intervention on Agricultural Markets) and the Regions. The growing number of agreements and the constant solicitations for the European Commission's services have increasingly engaged the central administration and regional structures in reaching a high level of administrative efficiency and control activity effectiveness. A large share of responsibility seems to fall on the Regions which have not only to check the correct "quantity" of premium supplied, but also to develop "quality" control methods which can assess the actual impact of agri-environmental policies on the territory. Actually, the main problem consists in establishing reliable and high quality control systems at reasonably low costs. The regional administrations' experience, acquired in the first years' application, seems to suggest the necessity of investing greater financial resources in the improvement of regional organisation structure and control systems. The need for developing and financing, also through Community funds, control methodologies based on unambiguous monitoring systems (chemical analyses, aerial photos, etc.) to make some measures easy checkable, reducing as much as possible the use of indirect methods (documentary verifications) or procedures based on the controller's subjective evaluations.

The implementation of *actions for the education and training* of farmers and advisors about environmentally sound practices was rather low, although in the very first years' application, it was clear that information and extension services would have had a fundamental role in the diffusion of eco-compatible techniques. Also, it should not be forgotten that sociological factors play an important role in farmer's decision making concerning the innovative features of technical and economical management. The initiatives provided for by Regulation 2078 should have been integrated in a higher degree with other activities promoting sustainable agriculture. The latter have proliferated in recent years at a regional level but do not seem well co-ordinated as to agri-environmental policies. In the *research and development* field specific assessment schemes should be established in order to check the technical, economic and environmental effectiveness of the solutions suggested by agri-environmental programmes. Special attention should be given to innovations concerning the management of semi-natural elements, in order to offer technical solutions suitable to the organisational needs of the farm's productive activity. The information ac-

tivity and technical assistance carried out by the *extension services* must be drawn on systematic information sources about the technical and economic features of eco-compatible techniques. However, this information is, at present, available only in a very small quantity. Communication to the sector operators should involve not only farms participating in the agri-environmental programmes, but also those productive activities showing potential capacity of structural and technological adjustment to the limitations imposed by agri-environmental programmes.

Although agri-environmental measures have achieved a satisfactory diffusion level, *the valorisation of the products and farming services given by farmers* as a consequence of their application is not always recognised successfully by the market. In particular, the farming products realised through the application of measures, such as the promotion of low environmental impact production systems and organic methods, are getting a good level of market diffusion mostly because of the consumers' growing attention. On the other hand, the services offered in compliance with the so-called prevalently naturalistic measures (countryside stewardship) can not find economic acknowledgement on the market yet.

In case of *food products* there is still a great difference between organic farming and integrated agriculture products. In the former laws established by Community and regions make organic products unambiguously identifiable while in the latter control procedures are not applied. Hence, new initiatives should be promoted:

- promoting the image of eco-compatible products through information and popularisation actions;
- favouring new associations between producers in order to certify also integrated products and to stimulate, when possible, the adoption of joint trademarks alongside with the great distribution ones;
- improving the distribution network to reduce distribution costs and consumer price level;
- connecting organic and integrated products to the Protected Designations of Origin and the Protected Geographical Indications products codes to enhance the genuineness and territorial connotation features of local products.

Two main activities can be identified among the *environment services* provided by farmers: natural habitat and genetic diversity safeguard and the conservation of the typical rural landscapes of European countries. Both these services are informally supplied by farmers activities, but are not incorporated in the prices of agricultural products. Therefore, in absence of a market valuation, either direct or indirect, these supplied activities may not meet public expectations. Thus, the public support activity carried out through some of the agri-environmental measures is partially justified. However, in a medium-long run, a commercial valorisation of these services can be attained through a greater integration between these initiatives and others economic sectors (first of all tourism) which take advantage of their development.

The *economic assessment* of the agri-environmental measures application was addressed both to the structural and economic features analysis of the farms participating in Regula-

tion 2078 compared with the other "conventional" holdings, and to specific features regarding single measures. The evaluations have been achieved by using samples drawn upon the Farm Accountancy Data Network (FADN/RICA). The comparison between Regulation 2078 farms and conventional ones has provided information about the farm typologies which seem to find the agri-environmental measures adoption more profitable, or about extensive farms, mainly located in the northern mountain areas or in the southern hilly ones. In eco-compatible farms land productivity is lower than in conventional farms, whereas labour productivity is on the whole alike. On the contrary, the income is lower and only in some productive systems do premia amounts fully compensate the cost and productivity differential existing between the two groups of farms.

These first analyses suffer from the variable distribution of the sample farms compared with the actual distribution. On the one hand, this variability is due to the recent outspreading of eco-compatible farming and, on the other, to the lack of a homogeneous and representative data basis, both as to space and time, of the Italian situation. The FADN regional samples, adequately identified in collaboration with the Regions, might prospectively satisfy the new information needs, as they represent the only systematic source of technical and economic data about farms existing today in Italy. On the basis of the actual FADN sample structure one might therefore succeed in building up a sub-sample of farms which could be functional in monitoring the structural and economic parameters of the farms adopting eco-compatible production methods in order to achieve in-depth analyses also accounting for time evolution.

#### **EVALUATION AND PERSPECTIVES OF THE SINGLE MEASURES**

The measure favouring *chemical input reduction* has involved the greater number of farmers and hectares, affecting in relative terms mainly orchards which have taken advantage from the experience already acquired through the implementation of integrated pest management regional programmes. Also, in the regions which in the past had not succeeded in creating a co-ordination between meteorological information, pest management services and technical assistance centres, the initiatives for the diffusion of integrated techniques are gaining ground. This can be included among the positive results achieved by the application of this measure. The scarce diffusion of agreements on arable land and vegetable crops is due to both the prescriptions on productive techniques, considered too strict for traditionally intensive crops, and the additional obligations concerning chemical input reduction. The administrative difficulties met in establishing farm planning, in managing the record-keeping of treatments and control procedures, have often been quoted as one of the heaviest hindrances both for the farmer and the farm consultant, even if the impression is that in many cases this censure is due to an outdated organisation system.

After the first four years' implementation, it is not yet possible to assess unambiguously the effects produced on the farming sector and the environment because information is so far

too limited. This data lack is due partly to objective difficulties, especially regarding the scientific knowledge about effects on environment, and partly to the basic lack of preparation of the institutions entrusted in carrying out these evaluations. Taking into account a rather significant application and a quite scarce evaluation of the effects on the environment, adjustments regarding the following features should be advisable:

- achievement of a zoning accounting for the measure's specific objectives on the one hand and for the different environmental sensibility areas on the other;
- attainment of greater homogeneity in code of practices definition, accounting for regional characteristics at the same time;
- granting the application only for the whole farm and diversifying premia depending either on introduction or maintenance of ecocompatible techniques;
- integrating the codes of practices more closely with the interventions aimed at preserving semi-natural elements in the farm structure;
- checking whether the control system can accomplish its task effectively. As an alternative appropriate institutions might be envisaged with the task of integrated production certification, according to standard production rules established ad hoc with homogeneous criteria (i.e. ISO 14000).

The measure encouraging *organic farming* has found a good degree of participation in most Italian regions. The areas involved have significantly increase exceeding the forecast reported in agri-environmental programmes; the organic sector has, therefore, lost the *niche* market role it had in the early '90s. The first evaluations, based on the comparison of structural and economic indicators between organic and conventional farms collected in the FADN sample, show that organic farms are characterised by a close integration between animal husbandry and cropping activities, by a broader average size and lower labour intensity. Their land productivity, lower than the conventional farms', confirms less intensive farming, whereas labour productivity attains similar levels. In terms of income organic farms are rather vital, but it should be stressed that agri-environmental compensations is a essential element for the survival of many full-time productive units, especially in the mountain less favoured areas, where there is no premium price for the different quality of organic products. In spite of the procedures included in Regulation 2092/91, agri-environmental programmes contain some specific rules which have contributed to determine the different adhesion pattern recorded in the regions. It is deemed advisable to suggest some adjustments and amendments for the future, aimed at reducing differentiation as to the following features:

- obligatory adhesion to the measure with the whole of the farm area in some regions, whilst others are allowed the opportunity to adopt organic methods only on a portion of farm grounds;
- no differentiation of the premium, between chemical input reduction and organic farming measures, diminishes profitability and thus does not stimulate farmer in adopting organic techniques;
- adhesion including also fodder crops is provided for by some programmes, but there is no

connection between these productions and the code of organic practices for livestock production, even they are already available at some certification agencies.

The area interested in *extensification carried out through methods different from fertiliser and/or pesticides reduction and organic farming methods* can rely on significant adhesion, both as farms and areas, in some regions only. The actions carried out under this measure have generally involved the maintenance of specific extensive production systems, useful as to territorial defence and safeguard and as abandonment prevention, but on the whole, without apparent changes in production techniques. This intervention includes some initiatives potentially interesting for environmental purposes showing less monitoring difficulties as to chemical input reduction. According to a comparative evaluation between the premium offered and the standard gross income drawn on the FADN database, it was highlighted that in many cases the premia are too low in comparison with the commitment required. Crop extensification could be applied jointly with livestock density reduction - overcoming some restrictions to the association of these two measures imposed by the Commission - in order to support small scale livestock breeding in the internal areas (e.g. mountains) where animal husbandry is undergoing a fast decrease. The perspectives for the re-proposition of these commitments are linked to a more precise identification of farm typologies and areas eligible for the aids provided.

The scarce application of the measure for *livestock density reduction* seems mainly associated with the low premium level and the total or partial exclusion of the participants in this agreement, from the opportunity in applying also for the aids on fodderland granted by other measures. The Italian livestock farm structure, technological progress and growing fodderland areas increase dramatically the gap between income loss and compensations provided for too broad. If the measure is to be maintained, incentive mechanisms should be revised by establishing greater premia differentiation and wider complementarity with other measures according to the environmental target and the productive typologies which might benefit from this intervention. A two-step premium modulation should be proposed:

- a first incentive for livestock density reduction considering the whole arable area, to mitigate the animal waste disposal problem;
- a second incentive for livestock farms engaged in reaching a more balanced fodder production budget, increasing the fodder crop share on the total farm area.

*The landscape restoration and natural resource safeguard interventions* established in agri-environmental programmes deal with the introduction or maintenance of natural and landscape elements and specific land shaping and drainage systems; the incentives for mountain pastures and mountain meadow management; soil fertility conservation; the cultivation of plants for wildlife feeding. The measure has met the forecasts established in agri-environmental programmes, mainly covering northern regions. Conversely, in the central and southern regions the adhesion did not meet adequately expectations while planning for this type of interventions was missing, especially in areas where eco-compatible techniques in pasture and extensive meadow management should have been introduced.

Among the other factors which have contributed to differentiate the application at a regional level, and which should be taken into greater consideration in the future, the following ones should be remembered:

- the participation in some agri-environment programmes of landscape restoration interventions (hedgerows, copses, buffer strips) were missing. Furthermore, in some cases only the maintenance of already existing semi-natural elements is established while the possibility of introducing new natural features has not been considered;
- few regions only were concerned with soil fertility conservation interventions through cover crops;
- the demand of public and local operators' high planning skills in order to enact innovative initiatives and the farmer's adequate professionalism;
- the presence of public and private structures performing extension services functions and prompt diffusion of information towards farmers.

The overall application of the sub-measure for conservation of endangered vegetable species threatened with *genetic erosion* was quite unsuccessful, as it involved 2,000 hectares only, mostly concentrated in Toscana. Among the factors deterring adhesion, there is the premium amount, which does not always compensate adequate covering for lost income, the limited information about the measure provided for by the agri-environmental programme and the absence of adequate consultant services for cultivation and techniques quite far from modern production feature. It is important to find scientific motivations which can, in the next future, influence positively the attitude of the Commission that during the first negotiation phase, rejected most of the lists presented by Member States. The absence of a clear positive balance between costs and benefits of the initiatives proposed may shift the attention towards more profitable conservation strategies, hence, in the future measures should imply a closer collaboration with the gene banks working programmes.

The sub-measure encouraging breeds of *animals in danger of extinction* has had a remarkable diffusion and a good impact on the livestock economy of marginal areas. As a matter of fact, many local breeds have unique genetic features which enable them in adapting to specific environments, such as the mountain ones, where to the most productive breeds are unsuitable. It seems indispensable to organise a systematic monitoring activity about the demographic features of these populations and assess the amount of the LU which have never been enrolled into the animal register or into the genealogical book-keeping. A similar effort should be addressed to farms adhering to this measure and their livestock. The application of this action could be further reinforced by supporting synergies such as local food product valorisation or the definition of organic animal husbandry code of practices. Eventually, the measure could be extended to other species (i.e. pig and poultry) and the premium level differentiated according to the single breeds' risk of extinction.

The measure for *abandoned farmland and forestland reclamation*, provided for in 16 regional schemes, shows growing diffusion especially in the South. The difficulty to demonstrate the actual state of land abandonment and the exclusion of public institutions as bene-

ficiaries - although owing several allotments often in a severe state of neglect especially in the mountains - have dramatically emerged among the main restrictions limiting the diffusion.

The measure for the *20-year land set-aside for environmental purposes*, in spite of its gradual increase shows an adhesion lower than expected, mainly concentrated in the South. Of special interest is the Emilia Romagna experience which has achieved satisfactory results such as increasing in protected bird species. The remarkable length and lack of flexibility of this agreement, add to the lack of economic profitability because of the low premia level - also highlighted by a first comparative evaluation between the premia provided for and standard-crop gross incomes drawn on the FADN data bank - have been signalled among the limiting factors.

*The measure for public access to countryside* was included in the programme of seven regions, especially in the centre and north Italy. The application was extremely limited, and lower than the most cautious expectations. It concentrated mainly in Umbria where the compatibility with other measures and especially with those concerning abandoned land uptake favoured its diffusion, besides the already consolidated farm tourism activity. On the contrary, in the other regions the lack of synergies with other measures and farm tourism activity, which added to the premia low value was indeed one of the limiting factors.

## **AN UPDATING TO 1998**

In 1998 there was another remarkable increase of the application in Italy of Regulation 2078: +857,000 hectares. This takes the overall area quite close to 2.5 million hectares (table 4). Comparison with the national agricultural area shows a diffusion rate of agri-environmental commitment as high as 16.6%, and therefore larger than the 15% threshold established as a target for EU member states by the Fifth Environmental Action Programme. This growth has mainly occurred to the southern regions which have completely been able now to make up for the delay in the application, they had run into during the first planning period. Eight regions more than doubled the area within one year, starting in some cases from the rather modest values recorded in 1997. On one hand, the mountain regions (Valle d'Aosta, Bolzano and Trento) had already shown very high percentages of the area covered by agri-environmental undertakings in previous years. On the other hand in 1998 also Piemonte, Lombardia, Toscana and Basilicata reached values higher than one fourth of their farmland. On average the area interested by agri-environmental measures decreases from the North (23%) to the South and islands (11%). An extremely limited diffusion (less than 2%) is still recorded in Abruzzo, Molise and Campania because of some lacks in planning and a so far too sparse information activity.

The measures addressed to chemical input reduction (39% of 2078 area) and organic farming (20%) which record the highest area increase (table 4) are still widely prevailing.

Among the other forms of undertaking, the measure for the care and restoration of natural and landscape features is still meeting the farmers' favour (+114.000 ha) with a marked concentration in five northern regions. The remarkable amount recorded also for the other methods of extensification is mainly due to the considerable growth of aids for meadow mowing recorded in Lombardia. The measures regarding abandoned land reclamation and the twenty-year set-aside for environmental purposes not unexpectedly show rather low application rates. Especially amazing proves the partial failure of the former measure which, confronted with such a really serious problem as farming abandonment in wide inland areas of the peninsula, has proved unable to affect the phenomenon at all. To better contrast this almost unrelenting trend, the future intervention should be based on both more specific territorial analyses aimed to identifying the factors on which to intervene effectively with agri-environmental policies and more planning and intervention skills of local administrations.

Table 4 - Number of agreements, area enrolled and expenditure under reg. 2078/92 (1998, provisional data)

Regions	Agreements		Area			Expenditure	
	n.	% on 1997	hectares	% on 1997	% on agri-cultural area	million lira	% on 1997
Piemonte	18,128	28.2	360,791	25.9	30.8	119,667	21.3
Valle d'Aosta	3,355	0.0	47,064	36.4	54.0	13,293	9.5
Lombardia	18,370	74.5	300,410	175.1	27.0	88,404	153.2
Prov. Bolzano	8,448	0.0	152,049	0.0	57.2	24,467	-3.2
Prov. Trento	2,771	-4.0	51,716	-1.6	35.9	10,740	2.8
Veneto	7,521	27.7	70,418	31.0	8.1	55,661	35.8
Friuli	2,073	10.9	24,642	31.5	9.5	11,005	26.3
Liguria	4,281	106.2	12,386	304.4	15.3	8,418	541.0
Emilia Romagna	10,450	59.1	162,456	117.8	13.6	117,847	122.9
Toscana	14,550	15.1	257,145	24.5	28.5	126,314	30.5
Umbria	5,045	29.5	48,452	25.5	12.4	26,044	52.4
Marche	5,178	135.0	74,548	177.6	12.7	40,645	147.4
Lazio	11,247	49.7	122,477	43.3	14.9	87,703	40.7
Abruzzo	780	282.4	10,615	543.7	2.1	7,776	329.5
Molise	608	138.4	6,283	98.0	2.6	4,172	99.2
Campania	1,276	427.3	9,055	576.6	1.4	10,587	408.8
Puglia	4,398	47.9	120,575	59.3	8.4	55,905	80.5
Basilicata	8,199	97.0	151,552	72.8	25.4	73,190	95.3
Calabria	4,967	225.1	60,334	185.9	9.3	61,794	154.6
Sicilia	35,029	30.2	204,730	31.0	13.1	201,697	27.4
Sardegna	8,373	123.9	218,085	139.6	16.4	112,320	92.1
Italia	175,047	43.5	2,465,783	60.8	16.6	1,257,651	53.3
North	75,397	35.2	1,181,932	60.9	22.8	449,503	45.4
Centre	36,020	37.2	502,622	41.7	18.6	280,706	45.3
South and islands	63,630	59.1	781,230	73.1	11.2	527,442	73.7

Source: INEA estimation on data of AIMA, Regional Administrations and ISTAT, Agricultural Structure Survey, 1997.

As to the measures aimed at livestock farms (livestock density reduction and endangered breeds raising) the results achieved in recent years are confirmed, with an increase of 4,500 LU only.

The 175,000 beneficiaries of agri-environmental incentives have produced a 1,258 billion lira expenditure, 60% higher than the expenditure occurred in 1997. Following a trend inevitably similar to the one recorded by the area, as many as eight regions have more than doubled their expenditure within one year. The analysis throughout these five years highlights an almost exponential growth of the expenditure flow. As often remarked, the fast increase after a first period of low interest is due to the greater familiarity of farmers with this new instrument of agricultural policy, but it should not be forgotten that the present growth also depends on the agricultural market situation. In the first years of the Mac-Sharry reform the lira devaluation and the international markets' trend had nearly reversed the expectations on the reform's negative impact on farming incomes and thus few farmers had realised the need to adopt other support measures. The trend inversion in the economic situation of farming, which began between 1996 and 1997, has determined a revision of many farmers' decision making options. Compared with decreasing prices, the five years fixed premium coming from agri-environmental measures ensures a safer income flow. In this sense the choice towards agri-environmental undertakings becomes more and more an income integration and the perspectives for next year seem to confirm this trend, as a further increase of the expenditure - which should reach about 1,700 billion lire - is expected.

Starting from next campaign the regional administrations, which have concluded their five-year planning, will have to present a new agri-environmental plan to the Commission, replacing for the previous five-year plan (1994-1998). Some regions requested permission to re-open the terms for new applications for the next campaign, without however achieving an adequate agricultural, environmental and socio-economic evaluation of the measures already carried out, according to the Commission's guidelines. The Commission has declared its disagreement with an opening to new undertakings in the 1999 campaign, as the results achieved with the previous agri-environmental plan should be first assessed. As a matter of fact, it is common opinion that only in consideration of a wider knowledge of the application's environmental effects, schemes can be re-planned focusing on the measures which grant greater effectiveness. The suspension imposed by the Commission concerns six regions (Friuli, Molise, Lazio, Veneto, Valle d'Aosta and Sardegna); two more regions (Sicilia and Basilicata) will be allowed to accept new applications to some measures only. Five other regions (Emilia Romagna, the Trento and Bolzano provinces, Umbria and Liguria), whose programme evaluation was presented within the established terms, has allowed the re-opening of application terms according to the rules of the new programmes approved by the Commission. The defaulting regions were only allowed one year's extension for the first contracts now expiring. The eight regions left, which the first agri-environmental plan is not over yet, will enjoy another year's application according to the old criteria.