



EVALUATION DE L'IMPACT ENVIRONNEMENTAL DE L'ORGANISATION COMMUNE DE MARCHÉ DES CULTURES PERMANENTES

ANNEXE 15 : OCM VIN ETUDE NATIONALE ESPAGNE et ETUDE DE CAS CASTILLA LA MANCHA

Novembre 2005

TABLE OF CONTENTS

1.	CONTEXT OF WINE PRODUCTION IN SPAIN.....	5
1.1	Main characteristics of the wine production in Spain	5
1.1.1	Evolution of the vineyards surface – 1990 to 2003	6
1.1.2	Evolution of the number of producers from 1990 to 2003	7
1.1.3	Evolution of production, 1990 to 2003	8
1.1.4	Evolution of the number of distilleries and plants which make concentration of grape must, from 1990 to 2003	11
1.1.5	Evolution of the number of producer organizations, from 1990 to 2003	11
1.2	Level of implementation of the various measures of the CMO in Spain.....	13
1.3	Institutional framework of the wine production in Spain	14
1.3.1	Public administrations	14
1.3.2	Planning.....	14
1.3.3	Management, monitoring and auditing system:.....	14
1.3.4	Funding.....	14
1.3.5	Private organizations	15
1.3.6	Sectoral organizations	15
1.3.7	Producers organisations at national level	15
1.3.8	Unions	15
1.3.9	Research and technical institute	15
1.3.10	Origin Indications.....	16
1.4	CMO implementation context in Spain.....	17
1.4.1	The Law for Vineyard and Wine.....	17
1.4.2	Agro-environmental Measures	17
1.4.3	Good Agricultural Practices	17
2.	CONTEXT OF WINE PRODUCTION IN CASTILLA LA MANCHA	18
2.1	Main characteristics of the wine production in Castilla la Mancha	18
2.2	Level of implementation of the various measures of the CMO in Castilla la Mancha	21
2.3	Institutional framework of the wine production in Castilla la Mancha.....	23
2.4	CMO implementation context in Castilla la Mancha	24
3.	ANSWER TO EVALUATION QUESTIONS	25
3.1	Vertical questions related to the wine CMO.....	25
3.1.1	Wine – Theme 1: supply control	25
3.1.2	Wine – Theme 2: structural measures	40
3.1.3	Wine – Theme 3: other regulatory measures and especially those for QWPSR	43
3.1.4	Wine – Theme 4: accompanying measures	45
3.1.5	Wine – Theme 5: environmental promotion.....	47
3.2	Horizontal questions	49
3.2.1	Horizontal – Theme 1: land use over time	49
3.2.2	Horizontal – Theme 2: adequate spending level and method.....	50
3.2.3	Horizontal – Theme 3: subsidiarity of agri-environmental schemes and horizontal measures	52
APPENDICES		55
Annex 1a: List of people met.....		55
Annex 1b: List of people contacted.....		55

Annex 2: Main bibliography identified in relation with the study.....	55
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TABLE INDEX

Table 1: Evolution of Q.W.P.S.R. Surface (hectares).....	7
Table 2: Evolution of wine enterprises and employees.....	7
Table 3: Evolution of Agrarian Societies of Transformation (wine cellars) and Number of members	8
Table 4: Evolution of the grape production by production purpose	9
Table 5: Evolution of wine production by categories	9
Table 6: Evolution of wine enterprises and employees.....	11
Table 7: Evolution of Producer Associations by wine types	12
Table 8: Evolution of Agrarian Societies of Transformation (wine cellars) and Number of members	12
Table 9: Expenses of the CMO measures (millions of EUR)	13
Table 10: Evolution of the number of wine cellars concerned by the CMO measures.....	13
Table 11: Evolution of vineyard surfaces and grape production in Castilla la Mancha.....	18
Table 12: Declared quantities (hectolitres) of wines belonging to “Vinos de la Tierra” Geographical Indication, 1999.....	21
Table 13: Provincial distribution of restructuring plans in Castilla la Mancha.....	22
Table 14: Restructuring approved surfaces for each variety (%) in Castilla la Mancha.....	22
Table 15: Wine and must distillations in Castilla la Mancha.....	22
Table 16: Distillations in thousands of hectolitres (2000/2001)	22
Table 17: Transference of planting rights, 1997-12/05/2004.....	26
Table 18: Vineyard surface by regions and kinds, 1996	28
Table 19: Vineyard surface by regions and kinds, 1997	28
Table 20: Vineyard surface by regions and kinds, 1998	29
Table 21: Vineyard surface by regions and kinds, 1999	29
Table 22: Vineyard surface by regions and kinds, 2000	30
Table 23: Vineyard surface by regions and kinds, 2001	30
Table 24: Vineyard surface by regions and kinds, 2002	31
Table 25: Evolution of the average size of farms in Spain distributed by regions (1989-1993).....	31
Table 26: Evolution of the average size of farms in Spain distributed by regions (1994-1998).....	32
Table 27: Evolution of the average size of farms in Spain distributed by regions (1999-2002).....	32
Table 28: Evolution of vineyard surface by varieties (hectares).....	34
Table 29: Evolution of the vineyard surface, production and yield	36
Table 30: Evolution of the use of concentrated must	37
Table 31: Average characteristics of the tips coming from wine distilleries	38
Table 32: Composition of wine mud.....	38
Table 33: Main authorized distilleries in Spain	39
Table 34: Evolution of vineyard restructuring Plans in Spain (2000-2005)	42
Table 35: Organic farming surfaces in Spain for vineyard (2003).....	46
Table 36: integrated production in agriculture in Spain (2002)	47
Table 37: Abandoned vineyard surface in Castilla la Mancha (1988-1996), R (CE) n°1442/88.....	49
Table 38: Significant environmental impacts in the wine CMO.....	51

FIGURE INDEX

Chart 1: Vineyard surface regarding to provincial geographic surface (%).....	5
Chart 2: Evolution of vineyard surface in Spain 1990-2003 (thousands of hectares).....	6
Chart 3: Percentage of surface with flair for Q.W.P.S.R.	7
Chart 4: Evolution of the number of producers of Agrarian Societies of Wine Transformation (wine cellars).....	8
Chart 5: Evolution of wine production (millions of hectolitres).....	10

Chart 6: Percentage of Q.W.P.S.R. production	10
Chart 7: Evolution of Q.W.P.S.R. production (millions of hectolitres)	11
Chart 8: Evolution of Agrarian Societies of Wine Transformation (wine cellars).....	12
Chart 9: Evolution of the vineyard surface (ha) in Castilla la Mancha (1992-2002)	19
Chart 10: Evolution of grape production in Castilla la Mancha (1992-2002).....	19
Chart 11: Castilla la Mancha location and Origin Denomination area	20
Chart 12: Evolution of the vineyard surface in Navarra and La Rioja (1996-2002).....	27
Chart 13: Evolution of the vineyard surface in Castilla La Mancha (1996-2002)	27
Chart 14: Evolution of the vineyard yield (hectolitres/hectare)	36
Chart 15: Organic farming evolution in Spain (1991-2003)	46

GLOSSARY

EU: European Union.

EC: European Commission (Comisión Europea)

Q.W.P.S.R.: Quality Wine Produced in a Specific Region. (V.C.P.R.D.: Vinos de Calidad Producidos en Regiones Determinadas).

CMO: Common Market Organization (OCM: Organización Común de Mercado)

MAPA: Ministerio de Agricultura, Pesca Y Alimentación. (Ministry of Agriculture, Fisheries and Food of Spain).

FEGA: Fondo Español de Garantía Agraria. (Fund of Agrarian Guarantee of Spain).

INE: Instituto Nacional de Estadística (Statistic National Institute of Spain).

IMIA: Instituto Madrileño de Investigaciones Agrarias (Agrarian Investigations Institute of Madrid).

IMIDRA: Instituto Madrileño de Investigación y Desarrollo Rural Agrario y Alimentario (Agrarian, Food and Rural Development Investigation Institute of Madrid).

COAG: Coordinadora de Organizaciones de Agricultores y Ganaderos (Farmers Organizations Coordinator).

CCAA: Comunidades Autónomas (Autonomous Regions)

CAP: Common Agricultural Policy (PAC Política Agraria Común).

AEM: Agro-environmental Measures.

GAP: Good Agricultural Practices

UPA: Unión de Pequeños Agricultores: Farmers Union

ASAJA: Asociación Agraria de Jóvenes Agricultores: Young Farmers Union

RICA: Red de información contable agrícola, FADN: Farm Accountancy Data Network

1. CONTEXT OF WINE PRODUCTION IN SPAIN

1.1 Main characteristics of the wine production in Spain

Wine production in Spain takes a very important role in our social environment because this sector has a double function in our country. Firstly, wine sector must make possible that many people can live in the rural environment. Secondly, wine production has an important environmental function since it is a kind of crop that can grow in special zones because of its perfect adaptations for Mediterranean climatic conditions; therefore, wine sector must be analyzed attending to the special conditions that exist in our country.

According to official statistical data of Ministerio de Agricultura, Pesca y Alimentación de España (MAPA), wine annual production in Spain has oscillated from 19 to 46 million of hectolitres during last fourteen years. This production usually involves roughly the 21% of total wine production of the European Union. Attending to the surface, vineyard is the third crop in Spain after cereals and olives. It occupies 1182000 hectares (data of 2002). Spain is the country with the biggest vineyard surface in the world and it involves 1/3 of European production. Vineyard is found in all regions of Spain and the region of Castilla La Mancha has the biggest vineyard surface. In Spain, wine sector involves the 4.5% of vegetable final production just as MAPA data say. Wine production is not the biggest one in the EU because of the low returns per hectare of Spanish vineyard and the low prices used in our country. Other countries like France, Italy and Germany, have better results of wine production than Spain.

Chart 1: Vineyard surface regarding to provincial geographic surface (%)

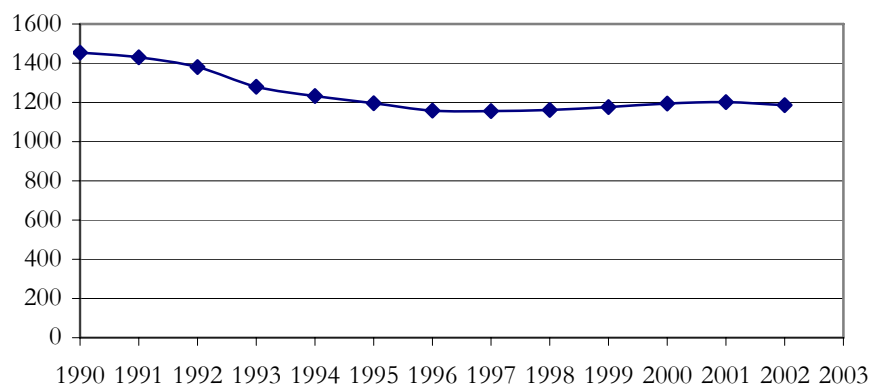


Source: MAPA

1.1.1 Evolution of the vineyards surface – 1990 to 2003

As we have said, vineyard exists in all regions of Spain. Roughly the 50% is founded in Castilla La Mancha (540,000 hectares) and there are 100,000 hectares in Extremadura, 77,000 hectares in Castilla León and Valencia and 64,000 hectares in Cataluña. Aragon, Murcia, Andalucía and La Rioja have smaller surfaces, so that there are 1142000 hectares of vineyard in Spain. Since the end of the 80s until half 90s, vineyard surface in Spain has been reduced so much because of the aids given for leave crops (see chapter 1.1.1). 220,000 hectares of vineyard have been left since this regulation exists as you can see in chart 2 (18.5% since 1990). Nowadays, vineyard surfaces in each region are changing because of the possibility to transfer vineyards among regions and countries. Vineyard surface in Spain has been reduced during last years but, as you can see in chart 1, vineyard surface has been growing since 1998, so that this CMO measure in Spain is not getting the expected results (data taken from MAPA, 2004).

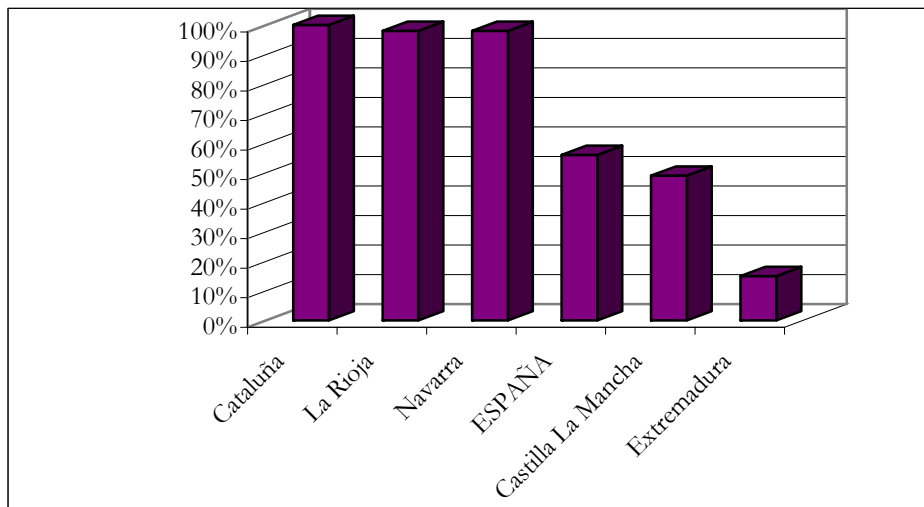
Chart 2: Evolution of vineyard surface in Spain 1990-2003 (thousands of hectares)



Source: Own work from official statistical data of MAPA

According to these data, in La Rioja, vineyard involves the 16.7% of cultivated farms, what proves that it is the most important crop of this region. In other regions like Castilla La Mancha, vineyard involves about the 11.8% and in Valencia and Murcia it involves roughly the 10%. These are regions where vineyards represent one of the most important incomes for farmers. There are 1,790,000 farms in our country and 342,000 of them are occupied with vineyard. There are more farms in Galicia (83,000) than in Castilla La Mancha (81,000), because of the smaller size that farms have in Galicia (roughly 0.4 hectares on average). Biggest farms are localized in Murcia (average roughly 7.34 hectares) being the average land surface in Spain 3.34 hectares.

Table 1 shows that Q.W.P.R.S. surface has changed a lot during last fourteen years. Nowadays, it involves roughly the 56% of the vineyard surface in our country. Nowadays more than 641,000 hectares are registered as Q.W.P.S.R., and more than 96% of vineyard surface of regions as Cataluña, La Rioja, Pais Vasco and Navarra are registered as Q.W.P.S.R. (see next chart).

Chart 3: Percentage of surface with flair for Q.W.P.S.R.

Source: MAPA, 2004

Table 1: Evolution of Q.W.P.S.R. Surface (hectares)

Year	Q.W.P.S.R. Surface (hectares)
1990	593,318
1991	647,034
1992	636,117
1993	619,319
1994	604,730
1995	-
1996	591,887
1997	642,429
1998	584,841
1999	618,305
2000	623,954
2001	641,617
2002	626,692
2003	641,784

Source: Own work from official statistical data of MAPA

1.1.2 Evolution of the number of producers from 1990 to 2003

There are about 30,000 employees given out in all wine enterprises of Spain (see table 2, data of 2001). An “atomization process” has taken place into wine sector. The number of producers has decreased last years (-12.8%), however the number of wine enterprises has increased, so that there are more and more small wine enterprises. We just have data from 1996 and 2001, but they can represent clearly the real situation of this indicator, as we can see in the following table.

Table 2: Evolution of wine enterprises and employees

Indicator	1996	2001	Variations (%)
Enterprises	3,560	4,055	13.9
Employees	30,860	30,055	-12.8

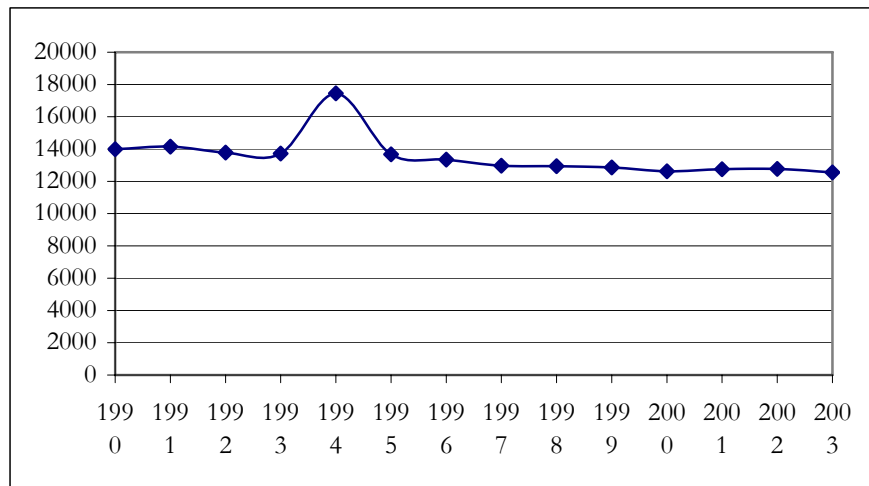
Source: Own work from MAPA, 2004

As you can see in Table 3, the number of members of Wine Agrarian Societies of Transformations has decreased last fourteen years (10%) in Spain. This data corroborates last data showed like the number of employees of wine enterprises.

Table 3: Evolution of Agrarian Societies of Transformation (wine cellars) and Number of members

Year	Agrarian Societies of Wine Transformation (wine cellars)	Number of members
1989/1990	138	13,990
1990/1991	144	14,147
1991/1992	146	13,778
1992/1993	146	13,726
1993/1994	149	17,450
1994/1995	149	13,676
1995/1996	149	13,345
1996/1997	153	12,973
1997/1998	159	12,938
1998/1999	160	12,865
1999/2000	160	12,623
2000/2001	170	12,748
2001/2002	173	12,767
2002/2003	178	12,553

Source: Own work from official statistical data of MAPA

Chart 4: Evolution of the number of producers of Agrarian Societies of Wine Transformation (wine cellars)

Source: Own work from official statistical data of MAPA

1.1.3 Evolution of production, 1990 to 2003

According to official statistical data of MAPA, average production of wine and grape must last years in Spain has been roughly 38 million of hectolitres. This production has many annual variations because of the dependence that this crop has on climatic conditions, especially rains and frosts. Wine annual production in Spain has oscillated last eight years from 19.4 (1995-1996) to 46 millions of hectolitres (2000-2001). Castilla La Mancha has the highest production (more than 50%). Four millions of hectolitres of grape must are produced in Castilla La Mancha each year. The average production of table wine in Spain is 21.6 millions of hectolitres, being Castilla La Mancha and Extremadura the regions that produce more quantity of this kind of wine (67% and 11.5% respectively).

Table 4: Evolution of the grape production by production purpose

Years	Total grape production (thousands of t)	Production purpose (thousands of t)		
		Fresh consumption	Rains	Must
1990	6,473.8	423.0	-	6,050.8
1991	5,197.0	425.9	-	4,771.1
1992	5,757.2	380.8	8.3	5,368.1
1993	4,567.6	349.4	10.2	4,208.0
1994	3,254.4	284.9	6.9	2,962.6
1995	3,350.0	363.1	7.6	2,979.3
1996	4,973.5	326.0	7.7	4,639.8
1997	5,523.4	262.9	12.7	5,247.8
1998	5,146.8	296.2	7.4	4,843.2
1999	5,607.7	333.0	6.5	5,268.1
2000	6,539.8	314.1	6.0	6,219.7
2001	5,271.7	314.3	5.0	4,952.5
2002	5,934.6	312.7	4.6	5,617.3
2003	-	-	-	-

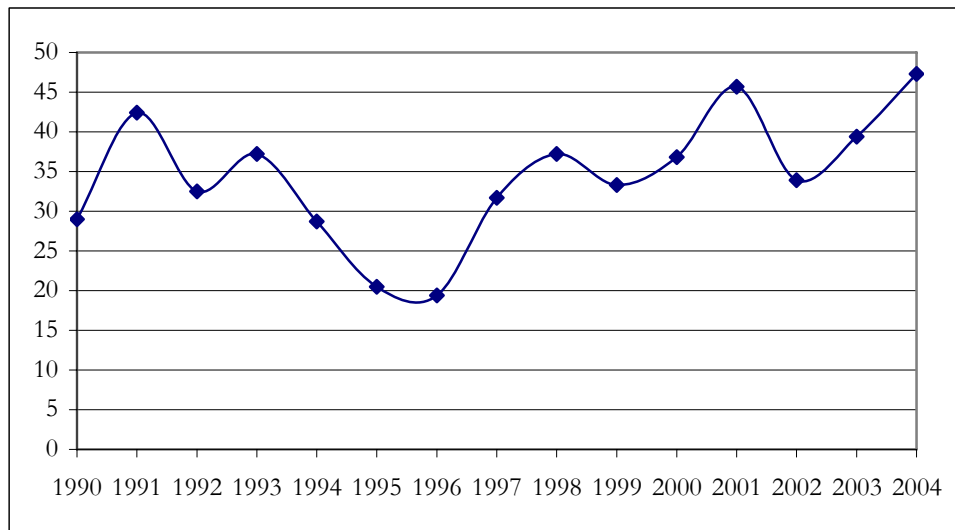
Source: INE

Table and grape must production in Spain have increased since 1995 as table 5 and chart 4 show. In 1997, the use of must aids appeared, so that productions of grape must have increased a lot since that year.

Table 5: Evolution of wine production by categories

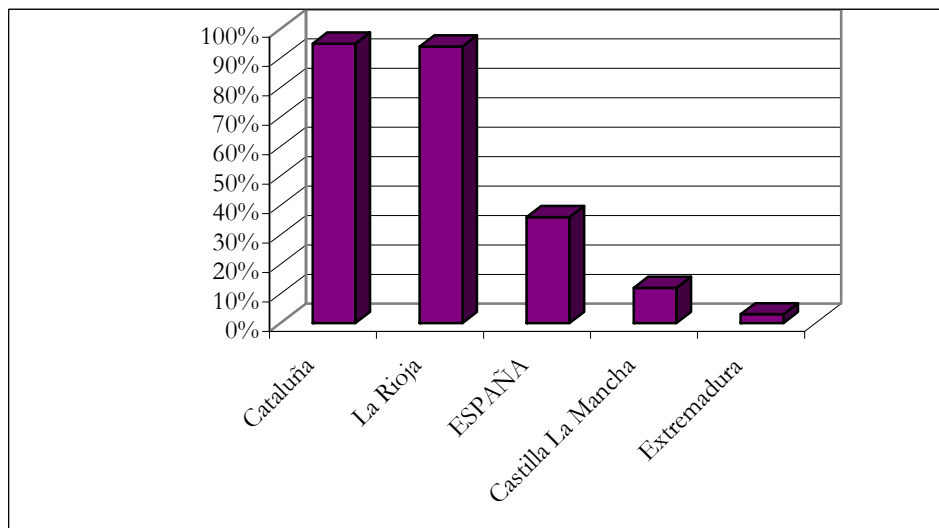
Year	Q.W.P.S.R. Production (millions of hectolitres)	Table wine Production (millions of hectolitres)	Grape Must Production (millions of hectolitres)	Total Production (millions of hectolitres)
1990	8.7	-	-	29.0
1991	9.5	-	-	42.4
1992	9.9	-	-	32.5
1993	10.0	-	-	37.2
1994	9.2	-	-	28.7
1995	7.8	10.8	1.9	20.5
1996	8.6	9.9	0.9	19.4
1997	12.0	16.6	3.1	31.7
1998	12.0	20.8	4.4	37.2
1999	11.3	18.0	4.0	33.3
2000	12.1	20.6	4.1	36.8
2001	14.7	26.5	4.5	45.7
2002	11.4	18.7	3.4	33.9
2003	11.4	22.2	5.9	39.4
2004 (forecast)	12.8	27.8	6.7	47.3

Source: Own work from official statistical data of MAPA

Chart 5: Evolution of wine production (millions of hectolitres)

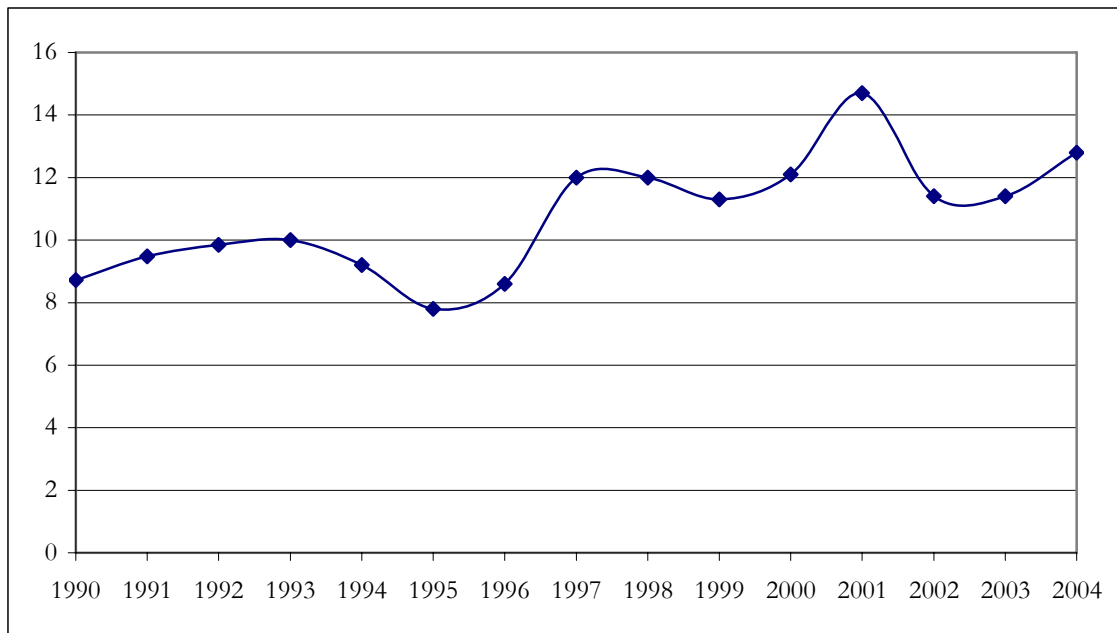
Source: Own work from official statistical data of MAPA

Production of Q.W.P.S.R. is spread out in 17 regions of Spain. Twelve millions of hectolitres of quality wines were produced in Spain last year, what involves the 35% of wine Spanish production. Cataluña, La Rioja, Castilla La Mancha, Andalucía and Valencia market more than a million of hectolitres of quality wine each year, being Cataluña (3.2 millions of hectolitres) and La Rioja (1.8 million of hectolitres) the regions with the best results of quality wines production (data taken from MAPA, 2004).

Chart 6: Percentage of Q.W.P.S.R. production

Source: Own work from MAPA, 2004

Red wine production involves the 43.5% of total wine production in Spain, but red wine consumption data is higher (60%), what has been possible because of the authorization of mixing red and white wines. This authorization will finish the 31th of July in 2005. Castilla La Mancha, Extremadura, Andalucía and Cataluña are the regions with the highest productions of white wine in Spain (MAPA, 2004).

Chart 7: Evolution of Q.W.P.S.R. production (millions of hectolitres)

Source: Own work from official statistical data of MAPA

1.1.4 Evolution of the number of distilleries and plants which make concentration of grape must, from 1990 to 2003

Wine sector in Spain consists of 4055 enterprises. 2200 of them have more than one employee and the 88% have less than 50 employees. The 18% of wine enterprises are localized in Castilla La Mancha, 15% in Cataluña, 10.4% in Castilla y Leon and 9.3% in La Rioja. The 77.3% of the wine enterprises are micro-enterprises (less than 10 employees) what explains the “atomization process” already mentioned before (MAPA, 2004).

Table 6: Evolution of wine enterprises and employees

Indicator	1996	2001	Variations (%)
Enterprises	3,560	4,055	13.9
Employees	30,860	30,055	-12.8

Source: Own work from MAPA, 2004

1.1.5 Evolution of the number of producer organizations, from 1990 to 2003

About 800 of the wine cellars are cooperatives organizations or Agrarian Societies of Transformation. These societies produce the 61% of wine in our country (the 69% of table wine and the 48% of QWPSR). Commercialization and distribution work is made by other kind of societies which principal labour is the wine production. These societies are given out all regions. There are many small wine cellars and cooperative organizations and some big firms with annual turnovers larger than 30 millions of euros. Foreign capital is very small in this sector. It is localized just in some firms that produce some liquors and specific wines like Jerez wine (MAPA, 2004).

Table 7: Evolution of Producer Associations by wine types

Year	Producers Associations (QWPSR)	Producers Associations (table wine)	Producers Associations (total)	Producers
1998/1999	28	9	35 ¹	25,500
1999/2000	28	9	35 ¹	25,500
2000/2001	28	9	35 ¹	25,500
2001/2002	28	9	35 ¹	25,500
2002/2003	28	9	35 ¹	25,500

(1) They are not 37 because there are some producers associations that produce table and QWPSR wines

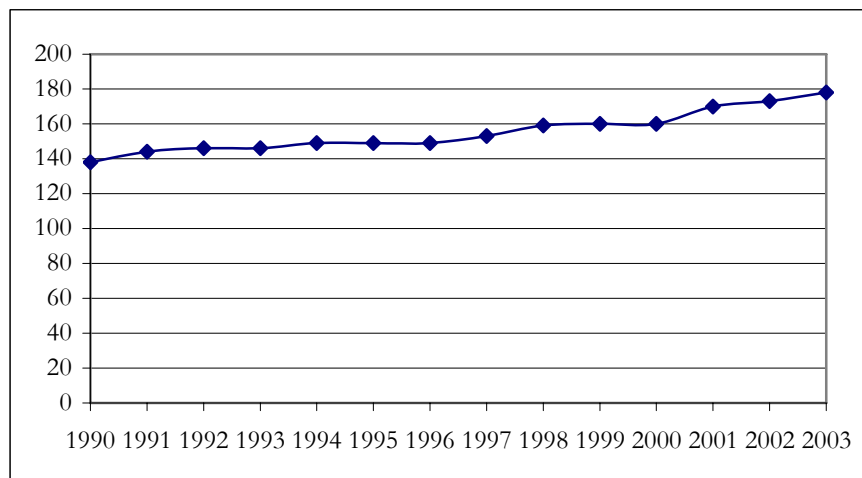
Source: Own work from official statistical data of MAPA

The number of producers associations has not changed since 1998 as you can see in table 7; however, the number of Agrarian Societies of Wine Transformation has grown so much, as table 8 shows.

Table 8: Evolution of Agrarian Societies of Transformation (wine cellars) and Number of members

Year	Agrarian Societies of Wine Transformation (wine cellars)	Number of members
1989/1990	138	13,990
1990/1991	144	14,147
1991/1992	146	13,778
1992/1993	146	13,726
1993/1994	149	17,450
1994/1995	149	13,676
1995/1996	149	13,345
1996/1997	153	12,973
1997/1998	159	12,938
1998/1999	160	12,865
1999/2000	160	12,623
2000/2001	170	12,748
2001/2002	173	12,767
2002/2003	178	12,553

Source: Own work from official statistical data of MAPA

Chart 8: Evolution of Agrarian Societies of Wine Transformation (wine cellars)

Source: Own work from official statistical data of MAPA

1.2 Level of implementation of the various measures of the CMO in Spain

Next table shows the expenses of the CMO measures during the last fourteen years. As we can see, abandonment grants have disappeared from 1999 but vineyard restructuring aids appeared in 2000, because of new wine CMO regulation. Use of must aids appeared in 1998, just the same year when aids for transformation of grape juice disappeared. As you can see in table 10, the number of wine cellars concerned by CMO measures has grown during last fourteen years.

Table 9: Expenses of the CMO measures (millions of EUR)

Values in millions of EUR	AIDS									
	Obligatory distillation	Table wine distillation	Private storage	Transformation of grape juice	Abandon aids	Export Refunds	Public Storage	Use of must	Vineyard restructuring	TOTAL(1)
1989/1990	15.3	75.9	4	2.5	33.8	29.1	2.4	-	-	163
1990/1991	16.2	145.6	11.2	2.5	49.5	36.4	3.2	-	-	264.6
1991/1992	13	135	9.7	4	137.2	36.4	5.3	-	-	340.6
1992/1993	16.2	104.2	16.5	4.7	161.4	67.7	7	-	-	377.7
1993/1994	15.6	47.8	13	6.5	134.8	34.6	8.1	-	-	260.4
1994/1995	10.8	11.3	6.1	5.1	101.7	17.8	5.2	-	-	158
1995/1996	11.3	26.7	7.1	3.2	115.6	23.5	1.1	-	-	188.5
1996/1997	19.1	103.9	12.1	7	5.1	28.4	0.6	-	-	176.2
1997/1998	19.9	108.6	20.7	-	0.8	21.9	0.5	12.2	-	184.6
1998/1999	18	93.6	11.1	-	0.1	16.5	0.6	10.9	-	150.8
1999/2000	16.7	138.2	1.5	-	-	15.7	0.1	12.1	-	184.3
2000/2001	24.1	167.7	23.7	-	-	13.3	2.6	14.4	172.3	418.1
2001/2002	18.7	135.2	22.4	-	-	14.2	4.9	15.4	189.4	400.2
2002/2003	21.9	151.9	23.4	-	-	12.5	3.8	18.8	167.1	399.4

(1) Total data has been calculated adding the other data of this table

Source: Own work from official statistical data of MAPA and FEGA

Table 10: Evolution of the number of wine cellars concerned by the CMO measures

Year	Beneficiaries				
	Private storage of grape and concentrated must	Private storage of table wine	Private storage of alcohol distillation	Distillation	Use of must for grape juice elaboration
1989/1990	-	226	-	1318	-
1990/1991	-	181	-	2783	-
1991/1992	-	223	-	2116	-
1992/1993	62	255	-	3023	-
1993/1994	68	194	-	1371	-
1994/1995	29	175	-	768	-
1995/1996	40	163	-	527	-
1996/1997	70	188	-	2017	-
1997/1998	72	164	-	1198	-
1998/1999	79	133	-	613	-
1999/2000	92	180	-	842	-
2000/2001	134	297	14	1124	-
2001/2002	106	275	14	2657	-
2002/2003	177	335	14	1209	1311

Source: Own work from official statistical data of MAPA and FEGA

1.3 Institutional framework of the wine production in Spain

The institutional framework at Spanish wine sector presents a complex structure due to the decentralization of Spanish public administration, and also to the relevance given to private organizations. As a result, there are different institutions charged of the following tasks:

1.3.1 Public administrations

Public administrations are responsible of direct CMO planning, funding, control and monitoring:

1.3.2 Planning

CMO measures were approved by the European Commission in 1999 and the institution in charge of planning the policy at the European level is the National Administration, by means of the MAPA responsible. The MAPA is in tight touch to the regional agricultural responsible in order to plan a CMO policy as close as possible to the different regional needs.

1.3.3 Management, monitoring and auditing system:

Wine CMO management system is similar to the rest of CMO in Spain. The competences distribution between National and Regional Public Administrations awards agriculture competences to Regional Governments, but general economic regulation to National Government. Thus, the MAPA is responsible of:

- Relation with EU to coordinate the national program,
- The funding coordination by means of FEGA
- Regional management bureaus coordination by means of several Agriculture Ministry departments at DG level.

Finally, CCAA are in charge of direct aids management and divulgation.

MAPA gets funding from EC and distribute it to CCAA by means of FEGA. In addition, the Agriculture General Direction gets in touch with regional management bureaus to control the program application and to inform European Commission. There is a monthly meeting between the national administration responsible and the ones of the 17 CCAA to monitoring the CMO campaign development. Farmers and industries must address their aid application forms to the CCAA in which their farm (or its main part) is located.

1.3.4 Funding

As CMO is an horizontal policy, the funding is calculated at the European level to the whole country, so that, although the CCAA are autonomous to manage many policies, CMO as a global policy is applied in the same way all over the country. Regional governments are responsible of those competences into the CMO organization transferred by national government. In this case these are the direct pays to producers. But there is a national institution responsible of global payments management, FEGA. This institution transfers direct payments from EU to CCAA, which must make effective the payments to producers.

Control and monitoring

The monitoring program is based on specific physical and financial indicators established by the European legislation. According to regulation EC 445/2002 which establishes the monitoring system of the measures of the regulation EC 1257/1999 (in substitution of the 1750/1999), a monitoring report is presented to the European Commission. There are two controls:

- Administrative controls
- Farm survey.

Administrative controls are the base of the control and monitoring system. Besides of farm survey controls they are the responsible of assuring that each surveyed producer is carrying out the condition to receive aids according to EC regulations. These controls are done at all the applications and are responsibility of regional institutions.

1.3.5 Private organizations

1.3.6 Sectoral organizations

There is not a specific wine interbranch organization in Spain.

- INTERMOSTO: Interbranch Organization of must and grape juice elaboration.
- IVIM: Interbranch Organization of table wine elaboration.
- OIVPR: Interbranch Organization of wine from La Rioja.

1.3.7 Producers organisations at national level

- Federación de Cooperativas de la Rioja, FECOAR.
- Asociación de Cooperativas Vitivinícolas de Rioja Alavesa, DOLARE.
- Euskal Herriko Nekazarien Elkartasuna-Nafarroa, EHNE.
- Asociación Agraria de Jóvenes Agricultores, UCAN.
- Confederación de Cooperativas Agrarias de España, CCAE.
- Asociación de Exportadores y Operadores de Mostos y Zumos de Uva, AEMZU.
- Asociación Española de Envasadores de Mostos y Zumos de Uva, EMOS.
- Asociación Profesional Empresarial de Operadores de Vino de Mesa y Vinos con IGP de la Tierra, AVIMES.
- Federación Española del Vino, FEV.
- Federación Nacional de Comercio Interior de Vino, FNCIV.
- Agrupación de Bodegas Centenarias y Tradicionales de Rioja, ABC.
- Asociación de Bodegas de Rioja Alavesa, ABRA.
- Asociación de Empresas Vinícolas de la Zona Rioja, AEVZR.
- Asociación Provisional Araex, ARAEX.
- Agrupación de Artesanos Bodegueros de Rioja, ARBOR.
- Productores Vitivinícolas Riojanos, PROVIR.

1.3.8 Unions

The following unions have a national scope, and are the most representative at Spanish rural domain:

- ASAJA: *Asociación de Jóvenes agricultores.*
- UPA: *Unión de Pequeños agricultores.*
- COAG: *Confederación de agricultores y ganaderos.*

All of them are organized in a federal structure, with a national structure and particular organizations at each region.

1.3.9 Research and technical institute

The most relevant Spanish research centres are:

- IAMZ: Instituto agronómico Mediterráneo de Zaragoza
- INIA: Instituto Nacional de Investigación Agraria y Alimentaria
- CSIC: Consejo Superior de Investigaciones Científicas
- IRTA: Institució per a la Recerca i el Desenvolupament Tecnològic Agroalimentari
- IMIDRA: Instituto Madrileño de Investigación y Desarrollo Agrario y Alimentario

- INTAEX: Instituto de Tecnología Agroalimentaria de Extremadura
- IVIA: Instituto Valenciano de Investigaciones Agrarias
- IDV: Instituto del Vino

1.3.10 Origin Indications

Finally we mention the Origin Indication Regulating Councils, because they can act as market and production regulators.

- Consejo Regulador de la D.O. "ABONA"
- Consejo Regulador de la D.O. "ALELLA"
- Consejo Regulador de la D.O. "ALICANTE"
- Consejo Regulador de la D.O. "ALMANSA"
- Consejo Regulador de la D.O. "AMPURDÁN-COSTA BRAVA"
- Consejo Regulador de la D.O. "ARABAKO TXAKOLINA-TXACOLÍ DE ÁLAVA"
- Consejo Regulador de la D.O. "BIERZO"
- Consejo Regulador de la D.O. "BINISSALEM-MALLORCA"
- Consejo Regulador de la D.O. "BULLAS"
- Consejo Regulador de la D.O. "CALATAYUD"
- Consejo Regulador de la D.O. "CAMPO DE BORJA"
- Consejo Regulador de la D.O. "CARIÑENA"
- Consejo Regulador de la D.O. "CATALUÑA"
- Consejo Regulador de la Denominación "CAVA"
- Consejo Regulador de la D.O. "CHACOLÍ DE BIZCAIA-BIZKAIKO TXAKOLINA"
- Consejo Regulador de la D.O. "CHACOLÍ DE GETARIA-GETARIAKO TXAKOLINA"
- Consejo Regulador de la D.O. "CIGALES"
- Consejo Regulador de la D.O. "CONCA DE BARBERÁ"
- Consejo Regulador de la D.O. "CONDADO DE HUELVA"
- Consejo Regulador de la D.O. "COSTERS DEL SEGRE"
- D.O. "DOMINIO DE VALDEPUSA"
- Consejo Regulador de la D.O. "EL HIERRO"
- Consejo Regulador de las DD.OO. "JEREZ-XERES-SHERRY y MANZANILLA SANLUCAR DE BARRAMEDA"
- Consejo Regulador de la D.O. "JUMILLA"
- Consejo Regulador de la D.O. "LA MANCHA"
- Consejo Regulador de la D.O. "LA PALMA"
- Consejo Regulador de la D.O. "LANZAROTE"
- Consejo Regulador de las DD.OO. "MÁLAGA" y "SIERRAS DE MÁLAGA"
- Consejo Regulador de la D.O. "MÉNTRIDA"
- Consejo Regulador de la D.O. "MONDÉJAR"
- Consejo Regulador de la D.O. "MONTERREI"
- Consejo Regulador de la D.O. "MONTILLA-MORILES"
- Consejo Regulador de la D.O. "MONTSANT"
- Consejo Regulador de la D.O. "NAVARRA"
- Consejo Regulador de la D.O. "PENEDÉS"
- Consejo Regulador de la D.O. "PLA DE BAGES"
- Consejo Regulador de la D.O. "PLA I LLEVANT"
- Consejo Regulador de la D.O. "PRIORATO"
- Consejo Regulador de la D.O. "RIAS BAIXAS"
- Consejo Regulador de la D.O. "RIBEIRA SACRA"
- Consejo Regulador de la D.O. "RIBEIRO"
- Consejo Regulador de la D.O. "RIBERA DEL DUERO"
- Consejo Regulador de la D.O. "RIBERA DEL GUADIANA"

- Consejo Regulador de la D.O. "RIBERA DEL JÚCAR"
- Consejo Regulador de la D.O.Ca. "RIOJA"
- Consejo Regulador de la D.O. "RUEDA"
- Consejo Regulador de las DD.OO. "MÁLAGA" y "SIERRAS DE MÁLAGA"
- Consejo Regulador de la D.O. "SOMONTANO"
- Consejo Regulador de la D.O. "TACORONTE-ACENTEJO"
- Consejo Regulador de la D.O. "TARRAGONA"
- Consejo Regulador de la D.O. "TERRA ALTA"
- Consejo Regulador de la D.O. "TORO"
- Consejo Regulador de la D.O. "UTIEL-REQUENA"
- Consejo Regulador de la D.O. "VALDEORRAS"
- Consejo Regulador de la D.O. "VALDEPEÑAS"
- Consejo Regulador de la D.O. "VALENCIA"
- Consejo Regulador de la D.O. "VALLE DE GÜIMAR"
- Consejo Regulador de la D.O. "VALLE DE LA OROTAVA"
- Consejo Regulador de la D.O. "VINOS DE MADRID"
- Consejo Regulador de la D.O. "YCODEN-DAUTE-ISORA"
- Consejo Regulador de la D.O. "YECLA"

1.4 CMO implementation context in Spain

1.4.1 The Law for Vineyard and Wine

This Law (24/2003, 10 July) main objective is the regulation of the wine sector within the European context and it is focused on the wine designation, presentation, promotion and publicity. It also regulates the origin indications and quality, as well as the protection systems for consumers and producers.

Title II, establishes different levels for quality protection system with several different categories.

RD 1472/2000 about Potential Vineyard Production

During the two firsts years of the vineyard restructuring measure application, Spain obtained almost a half of the common budget to restructure about 70,000 hectares.

1.4.2 Agro-environmental Measures

The application of the CMO measures related to wine do not provide for any obligation related with AE actions, such as those provided for by REG. (CE) N° 1257/1999.

The application of REG. (CE) N° 1257/1999 has two measures (3, 4) concerning wine production:

- Measure 3: Environmental techniques or rationalizing chemical products use
 - o Measure 3.2 Integrated Control
 - o Measure 3.3 Integrated Production
 - o Measure 3.4: Ecological agriculture
- Measure 4: Fight against erosion at fragile environments
 - o Measure 4.1: Woody crops at slopes or terrace.

1.4.3 Good Agricultural Practices

Measures like Good Agricultural Practice (GAP) are not specifically made for vineyards, but Council Regulation 91/676/CEE mentions some good agricultural practices for vineyards. In Spain, each region has its own GAP code, but most of them use the national one.

2. CONTEXT OF WINE PRODUCTION IN CASTILLA LA MANCHA

2.1 Main characteristics of the wine production in Castilla la Mancha

Castilla la Mancha is the most important wine producer region in Spain and it has the most extensive vineyard surface of the whole country. It consists of 5 provinces: Toledo, Ciudad Real, Albacete, Cuenca and Guadalajara. Most of the surface has been traditionally dedicated to white grape varieties, although Regulation 1493/1999 has led to an increase of red varieties substituting part of the white ones.

Castilla la Mancha has a total of 600,000 vineyard hectares on average, and a grape production of 2.3 millions tons, which gives a wine and must production of 20 millions hectolitres on average.

The main white varieties traditionally cultivated are Airén (the most produced one) and Macabeo, Mersebera, Albillo, Chardonnay y Sauvignon –Blanc. As for red varieties, the most important ones are Cencibel or Tempranillo, Garnacha, Monastrel, Bobal, Cabernet-Sauvignon and Merlot. The new CMO is promoting an increase in the use of Sauvignon-Blanc variety. Apart from these ones, there are some other red varieties which are being used for the production of quality wines (Origin Denominations), such as Moravia and Syrah.

Surfaces and production level

La Mancha is an excellent zone for vineyards due to its natural characteristics, obtaining high quality grapes with the perfect mature degree.

The following table shows the evolution of the vineyard surface and grape production in Castilla la Mancha from 1992 to 2002. It also shows yields and it makes a comparison with national results.

Table 11: Evolution of vineyard surfaces and grape production in Castilla la Mancha

VINEYARD EVOLUTION: SURFACES (hectares) AND GRAPE PRODUCTION (tons)												
		1992	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Albacete	Surface	109,058	107,766	105,7	105,42	105,707	110,327	112,588	113,935	120,457	121,637	121,682
	Production	361,049	322,303	200,073	217,525	283,873	343,011	334,201	318,179	381,115	320,07	448,342
	Yield	3.31	2.99	1.89	2.06	2.69	3.11	2.97	2.79	3.16	2.63	3.68
Ciudad Real	Surface	244,079	234,557	229,297	220,65	216,237	212,741	212,611	212,843	212,618	212,179	211,135
	Production	1,210,101	841,086	464,991	433	750,4	1,120,000	999,33	1,072,530	1,502,036	1,094,910	1,300,024
	Yield	4.96	3.59	2.03	1.96	3.47	5.26	4.7	5.04	7.06	5.16	6.16
Cuenca	Surface	117,875	109,696	100,7	97,18	95,83	96,7	95,711	101,384	101,655	101,655	101,655
	Production	465,809	356,99	249,149	224,317	416,113	432,033	441,63	470,06	536,165	318,729	468,794
	Yield	3.95	3.25	2.47	2.31	4.34	4.51	4.61	4.64	5.27	3.14	4.61
Guadala jara	Surface	3341	3121	2973	2819	2831	2755	2731	2737	2708	2633	2650
	Production	7851	5618	4608	4157	9367	4542	8036	9725	11,272	9668	5551
	Yield	2.35	1.8	1.55	1.47	3.31	1.65	2.94	3.55	4.16	3.67	2.09
Toledo	Surface	196,955	176,184	170,143	164,655	161,821	161,861	170,245	164,331	162,761	161,745	146,742
	Production	806,174	439,772	330,212	274,69	538,5	777,428	656,27	803,411	874,295	593,023	673,584
	Yield	4.09	2.5	1.94	1.67	3.33	4.8	3.85	4.89	5.37	3.67	4.59
Castilla la Mancha	Surface	671,308	531,323	608,813	590,724	582,426	583,354	593,886	595,23	600,229	599,849	583,864
	Production	2,850,984	1,955,769	1,249,033	1,153,689	1,998,253	2,677,014	2,439,469	2,673,905	3,304,552	2,270,590	2,896,295
	Yield	4.25	3.11	2.05	1.95	3.43	4.59	4.11	4.49	5.51	3.79	4.96
Spain	Surface	1,317,214	1,244,626	1,188,581	1,154,037	1,123,308	1,128,589	1,130,082	1,146,600			
	Production	5,339,152	4,151,496	2,947,618	2,944,798	4,597,657	5,203,855	4,795,366	5,234,300	6,332,600	4,765,900	5,277,500
	Yield	4.05	3.34	2.48	2.55	4.09	4.61	4.24	4.57			
%CLM/ Spain	Surface	50.96	50.72	51.22	51.19	51.85	51.69	52.55	51.92			
	Production	53.4	47.24	42.37	39.18	43.46	51.44	50.87	51.08	52.19	47.61	54.88

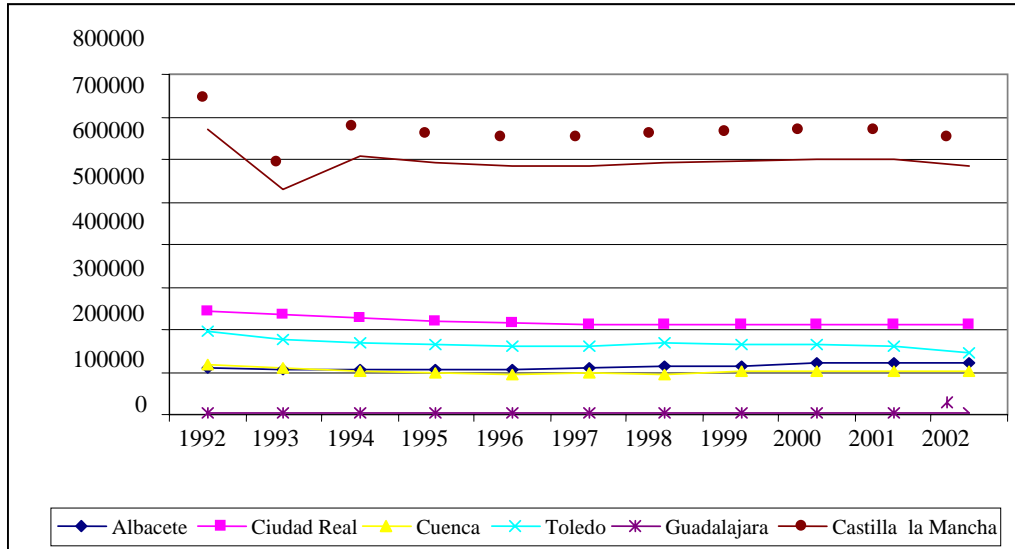
Source: Regional agricultural ministry of Castilla la Mancha; Law of vineyard and wine draft.

As it can be seen, Ciudad Real is the most productive region, with 220,000 hectares and almost one million tons of grapes on average. On the contrary, Guadalajara has a very poor production and surface and it does not produce any wine within La Mancha Origin Denomination. Castilla la

Mancha produces an average of 2.3 millions tons of grape, which represents a 49 % of the 4,7 millions of Spain. As for surfaces, the region of Castilla la Mancha represents the 50 % of the total vineyard surface in Spain

The following chart represents vineyard surface evolution and, as it can be seen, the lines are rather constant, although a light decrease in the last three years can be noticed, with the 1999 CMO entering into force.

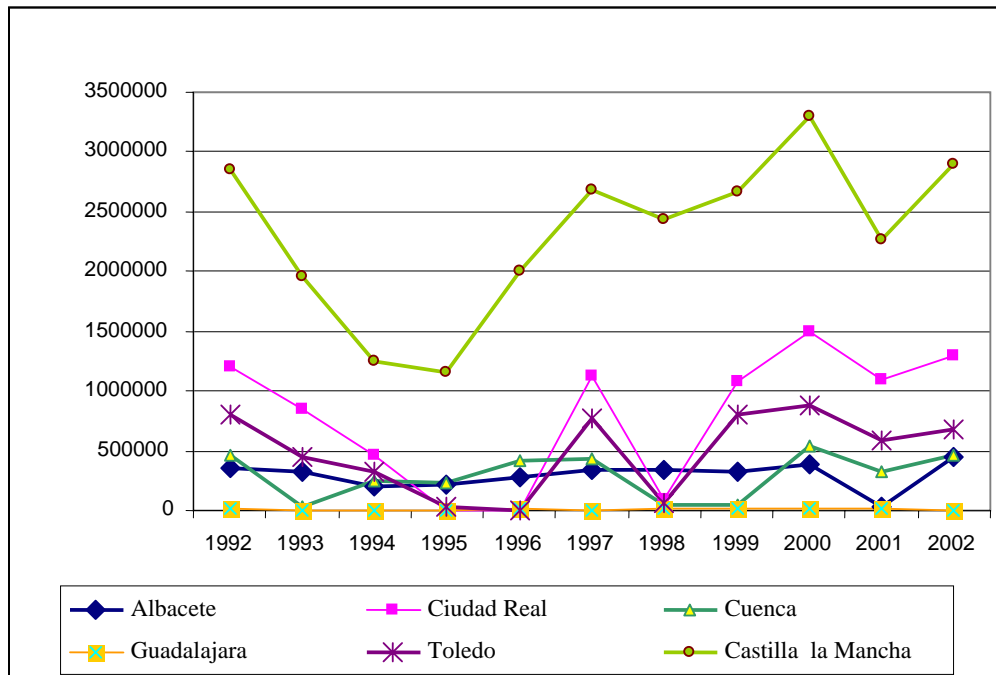
Chart 9: Evolution of the vineyard surface (ha) in Castilla la Mancha (1992-2002)



Source: own work from table 11 data.

Chart 10 shows the evolution of grape production in each province and the total in Castilla la Mancha. As it can be seen, production is subject to important oscillations since it is highly influenced by changing climate conditions.

Chart 10: Evolution of grape production in Castilla la Mancha (1992-2002)



Source: own work from table 11 data.

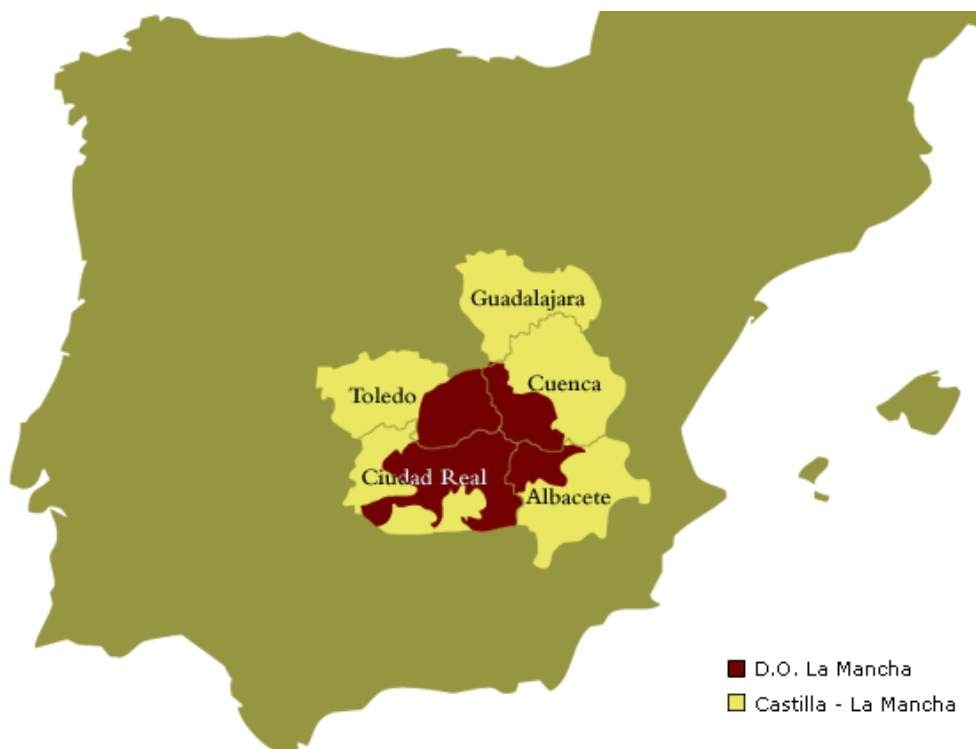
As we have mentioned before, Castilla la Mancha houses the half of the total vineyard surface in Spain and it presents the highest volumes of wine and must production. The 22, 2 % of the vineyard surface in Castilla la Mancha is cultivated under irrigation.

The vineyard tends to rejuvenate since the oldest vines were removed in the end of the 90' decade, when the premium for permanent abandon was in force. As a result, there are new varieties which are better adapted to market requirements.

Origin Denomination: La Mancha

As for quality wines, Castilla la Mancha produces a 10 % of the total national production. Chart 11 shows the map of Castilla la Mancha and it includes the area belonging to the Protected Origin Denomination La Mancha; this area represents the 50 % of the total surface of this region.

Chart 11: Castilla la Mancha location and Origin Denomination area



Source: www.lamanchado.es

La Mancha Origin Denomination presents the following characteristics:

- 182 municipal districts
- 22,000 producers
- More than 300 wine cellars

Geographical Indications:

The European regulations allow labelling wines not belonging to any Origin Denomination, provided that they are included in a geographical indication, which in the case of Spain is known as "Vinos de la Tierra". There are five Geographical Indications created to develop this quality wines: Vino de la Tierra de Castilla, Vino de la Tierra de Gálvez, Vino de la Tierra Sierra de Alcaraz, Vino de la Tierra Pozo Hondo and Vino de la Tierra Manchuela, which has currently disappeared with the Regulation Council creation for the Origin Denomination.

Castilla la Mancha produces between 15 and 20 millions hectolitres per year. From them, only the 15 % belongs to an Origin Denomination, so the major part is commercialized as table wines. Geographical Indications give a good opportunity to be in the international markets, out of Europe, where varieties are attractive for the American markets and they do not compete with Origin Denominations in Europe.

Table 12: Declared quantities (hectolitres) of wines belonging to “Vinos de la Tierra” Geographical Indication, 1999

Province	Red and Rosé	White	Total
Albacete	93,000	16,500	109,500
Ciudad Real	59,000	94,000	153,000
Cuenca	117,000	3000	120,000
Guadalajara	1300	500	1800
Toledo	65,100	58,000	123,100
Total	335,400	172,000	507,400

Source: Miguel Olmeda Fernández, “El Viñedo y el Vino en Castilla la Mancha”, 2003

2.2 Level of implementation of the various measures of the CMO in Castilla la Mancha

Castilla la Mancha received a total grant of 1,909.3 millions euros between 1997 and 1999. From 2000 to 2002, it received 2,168.3 millions euros.

As for EAGGF, the budgetary expenses are destined only to table wine, since there are neither direct aids, nor export refunds for Q.W.P.S.R. The annual funds are not constant; they vary from one year to another, representing around a 2.5%-5.5% of the total EAGGF Guidance section budget.

With the Agenda 2000 reform, the CMO offers a good chance to restructuring and modernize vineyard plantations in order to obtain more competitive farms and in order to adapt to consumer requirements.

Restructuring plans

In Castilla la Mancha, a total of 340 vineyard and varietal restructuring plans have been approved, with around 100,000 hectares affected.

Castilla la Mancha annually gets the half of the total restructuring funds for Spain (672 million euros until June, 2004). The new varieties chosen by producers are: Cencibel or Tempranillo, Syrah, Cabernet-Sauvignon, Garnacha and Merlot. This is a chance for producers to elaborate new quality wines in accordance with consumers' requirements.

Only three campaigns have been necessary to restructure the 71.3% of the 100,000 hectares targeted by Regional Government for an eight years period.

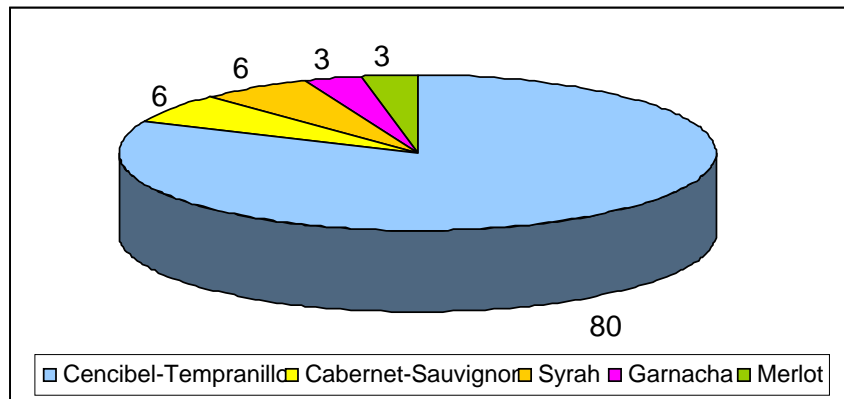
The following table shows the provincial distribution approved:

Table 13: Provincial distribution of restructuring plans in Castilla la Mancha

Province	Approved plans	Number of producers	Restructured surface	Aids (millions €)
Albacete	87	4582	19,208,2	140.2
Ciudad Real	109	5704	24,740.5	182.6
Cuenca	77	4089	13,958.6	100.3
Guadalajara	2	31	48.9	180,000 €
Toledo	65	3338	13,409	102

Source: Miguel Olmeda Fernández, “El Viñedo y el Vino en Castilla la Mancha”, 2003

The main varieties requested are: Cencibel-Tempranillo (80%), Cabernet-Sauvignon (6%), Syrah (6%), Garnacha (3%) and Merlot (3%), all of them red varieties.

Table 14: Restructuring approved surfaces for each variety (%) in Castilla la Mancha

Source: Miguel Olmeda Fernández, “El Viñedo y el Vino en Castilla la Mancha”, 2003

Distillations

As for distillations, the following chart shows the different volumes of wine and must distilled in Castilla la Mancha for the 98-99 campaign:

Table 15: Wine and must distillations in Castilla la Mancha

PREVENTIVE DISTILLATION CONTRACTS			
Regions	Number of contracts	Hectolitres	Hectogrades
Albacete	59	274,317	3,294,206
Ciudad Real	183	1,568,663	19,085,814
Cuenca	77	471,061	5,514,678
Guadalajara	4	5660	67,910
Toledo	154	1,286,625	15,318,385
Castilla la Mancha	477	3,606,326	43,280,993
España	775	4,412,485	53,130,190

Source: Miguel Olmeda Fernández, “El Viñedo y el Vino en Castilla la Mancha”, 2003

In the 2000/01 campaign, 7.28 millions of hectolitres were distilled in Castilla la Mancha, 1.90 millions corresponding to a crisis distillation.

Table 16: Distillations in thousands of hectolitres (2000/2001)

Region	Potable Alcohol	Crisis-distillation	Total	%
Castilla la Mancha	5374.6	1897.6	7272.2	75.93
España (total)	7264.8	2312.8	9577.6	100

Source: Miguel Olmeda Fernández, “El Viñedo y el Vino en Castilla la Mancha”, 2003

The 76% of the total national distillations is made in Castilla la Mancha.

There has been an increase in the number of Protected Origin Denominations in Castilla la Mancha (8 new ones):

- Almansa
- Jumilla
- La Mancha
- Manchuela
- Mérida
- Mondéjar
- Ribera del Júcar
- Valdepeñas

The total number of working wine cellars in Castilla La Mancha is 632 (Dirección General de Cooperativas, 1999). At least 384 of them are registered in an Origin Denomination.

2.3 Institutional framework of the wine production in Castilla la Mancha

European Institutions

- European Agricultural Guidance and Guarantee Fund (EAGGF)

Public Administration

Public Administrations are responsible for direct CMO planning, funding control and monitoring.

- MAPA: The Agriculture, Fisheries and Food Ministry is the national institution in charge of proposing and carrying out the Government guidelines about agricultural policies.
- FEAGA: The Spanish Agricultural Guarantee Fund is in charge of coordinating the regional administrations for payments from the EAGGF. It is in tight contact with the EAGGF.
- Subdirección General de Viticultura: This section belongs to the General Directorate of Agriculture and its main function is elaborating state rules and regulations as well as coordinating activities related to wine production and markets. It must also cooperate with the Spanish regions in the elaboration of proposals for the Spanish position in the presence of the European Institutions.
- I.N.E: National Statistical Institute. It works in the elaboration and perfection of demographic, economical and social statistics of municipal and regional areas.
- Junta de Comunidades de Castilla la Mancha.
- IVICAM: Vineyard and Wine Institute of Castilla la Mancha. Its main objectives are:
 - Expert training in wine sector
 - Investigation
 - Quality wines control for improving
 - Support to Origin Denominations in Castilla la Mancha

Associations and Unions

- ASEVICAMAN: Regional Association of wine employers in Castilla la Mancha.
- UCAMAN: Union of Agrarian Cooperatives in Castilla la Mancha.

Regulation Councils of the Origin Denominations

- Almansa
- La Mancha
- Manchuela
- Métrida
- Mondéjar
- Valdepeñas

2.4 CMO implementation context in Castilla la Mancha

Legislation in Castilla la Mancha takes into account the existent regulations coming from the European Union and from Spain.

In Spain, current rules are in R.D 2352/2004, where it is said that aids and premiums are linked to cross-compliance (Good Agricultural and Environmental Practices).

For vineyards, it is banned to cultivate in 15% or higher slopes; besides, it is banned to grub up any vines. There are many other measures for environment protection.

In Castilla la Mancha there is an Operational Integrated Program, financed by ERDF (European Regional Development Program), EAGGF (European Agriculture Guidance and Guarantee Fund), and ESF (European Social Fund); it is integrated under the Community Support Framework for structural measures in the Spanish Objective 1 regions from 2000 to 2006.

The Union of farmers in Castilla la Mancha has elaborated a ***Good Environmental Practices in Agriculture Code***.

As for environmental measures related to wines, it is important the ***Good Agricultural Practices Code*** in Castilla la Mancha.

3. ANSWER TO EVALUATION QUESTIONS

3.1 Vertical questions related to the wine CMO

3.1.1 Wine – Theme 1: supply control

Question 1 (V1): Which is the environmental incidence of the ban of planting new vineyard except in regions with growing demand?

Measure description

The ban of planting new vineyard exists in the European Union since 1976. This ban tries to control the surplus existing and the increase of vineyard surface that there was before 1976, but in Spain, as official statistical data of MAPA say, the objectives have not been achieved because there are still wine surplus. This ban will continue in Spain until 2010 but it will probably continue after 2010. Regulation 1493/99 of European Commission assigned some quotas to each Member State and a vintage community quota of 17,000 hectares to let zones with growing demand take advantage of the possibilities that the market gives.

Moreover, planting rights do exist and they can be transferred from one region to the others. For the management of these planting rights, a national stock of planting rights was created (REAL DECRETO 196/2002 of MAPA, 15th of February). This stock must be distributed among the different regions. The purpose must always be the promotion of the quality wine production in order to getting the highest competitiveness.

Level of implementation

As the experts consulted affirm, new vineyard is not being planted in Spain (except in regions that buy planting rights). This ban of planting new vineyard is considered as a good measure for them. Just those vineyards that come from planting rights are being planted nowadays in Spain. In our country, the region of La Rioja is buying these rights to other regions like Castilla La Mancha and Extremadura. Most of the regions except La Rioja and some zones of Duero's bank are transferring planting rights to these areas. However the regions of Cataluña and Galicia are being rather hermetic in this way as experts consulted affirm, although, as they say, last two years have been less right transferences in all the country.

Table 17: Transference of planting rights, 1997-12/05/2004

CCAA	TOTAL NUMBER OF ACCEPTED APPLICATIONS			
	BOUGHT		SOLD	
	FILES	SURFACE (thousands of hectares)	FILES	SURFACE (thousands of hectares)
ANDALUCÍA	-	-	574	683.32
ARAGÓN	91	110.49	691	778.37
ASTURIAS	-	-	-	-
BALEARES	63	120.39	6	10.76
CANARIAS	1	0.62	-	-
CANTABRIA	-	-	-	-
CASTILLA-LEÓN	809	1520.53	785	664.46
CASTILLA-LA MANCHA	100	181	2110	3382.75
CATALUÑA	274	553.10	75	80.84
EXTREMADURA	56	82.96	157	281.53
GALICIA	446	309.91	-	-
MADRID	4	9.86	142	254.15
MURCIA	43	111.45	437	1112.66
NAVARRA	1885	2143.26	547	336.74
PAIS VASCO	381	423.91	44	30.30
LA RIOJA	2120	1740.87	2	6.59
VALENCIA	13	19.64	686	717.92
TOTAL	6256	7328.05	6256	8340.43

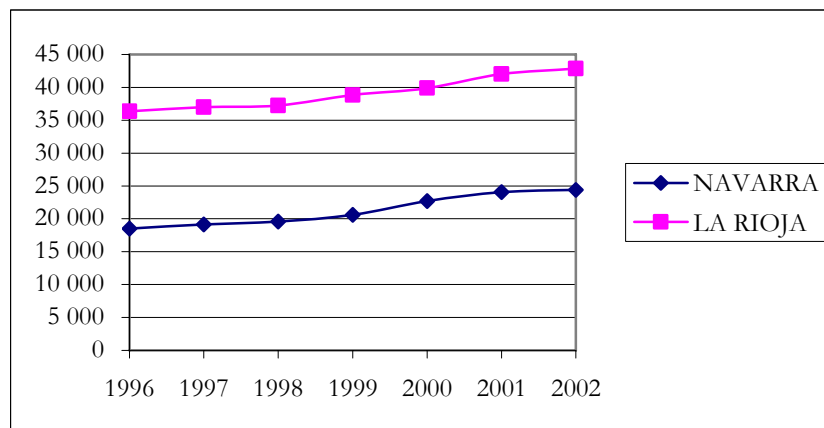
Source: Own work from official statistical data of MAPA

Analysis

As we have said, the existence of planting rights is allowing new plantations in zones like La Rioja and Ribera del Duero. The criteria of the quotas are based on the demand and, as the experts consulted affirm, wine market is very clear. As technical experts of the MAPA affirm, there were some criteria to administer the national quotas. Some of them were petitions, distillations, territorial value, used surface, etc. Then, a mathematical formula was used to decide the agreement regions. All regions of Spain received a part of these quotas but the most agreement regions were Castilla La Mancha, la Rioja and Navarra. Each region is administering its rights on its own. Most of them are trying to distribute these rights among the young farmers. This can help these people to stay in rural zones.

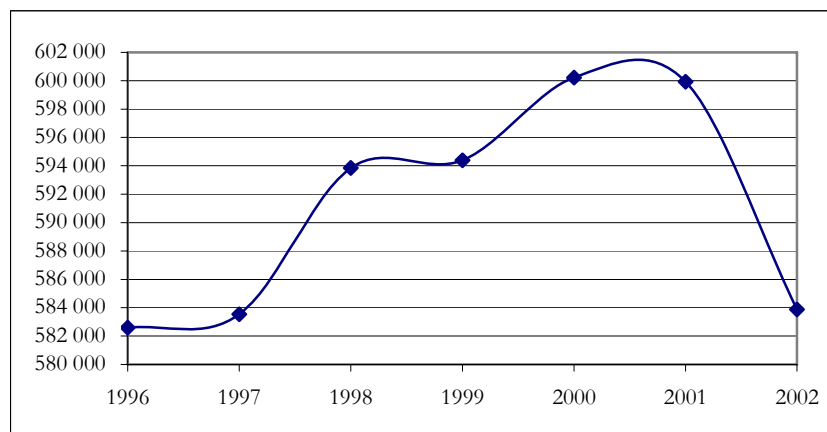
Many times, planting rights have been bought in Castilla La Mancha and it has not been possible to produce Q.W.P.S.R. as some experts consulted affirm. Other times, some white wine producers have changed their farming systems to produce quality wines in Ribera del Duero, what has saturated this market. Most of the planting rights have been used for legalizing some illegal farms that there were in our country. This process continues nowadays. It is important to say that Spain has not used the European reserve yet and it is thought that this reserve is not going to be used in a short term, because of the growth of the wine production caused by the market crisis.

Next tables and charts show the evolution of the vineyard surface distributed by regions and kinds of wine:

Chart 12: Evolution of the vineyard surface in Navarra and La Rioja (1996-2002)

Own work from INE data

As it can be seen, the vineyard surface in La Rioja and Navarra has experienced an increase in the number of hectares cultivated from 1996 to 2002. Between 1996 and 1999, the region of La Rioja has grown 2501 hectares and the region of Navarra has grown 2095 hectares. However, between 1999 and 2002, after de CMO measures, the growth has been bigger. The region of La Rioja has grown 4006 hectares and the region of Navarra has grown 3819 hectares (roughly twice the surface of last period).

Chart 13: Evolution of the vineyard surface in Castilla La Mancha (1996-2002)

Own work from INE data

These tables show the decrease of the vineyard surface that the region of Castilla La Mancha has experimented. From 1996 to 1999, this surface increased on 11,809 hectares but from 1999 to 2002, after the last CMO measures, the surface decreased on 10,536 hectares, therefore it can be affirmed that Castilla La Mancha is a “donor” region.

Table 18: Vineyard surface by regions and kinds, 1996

	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	28,583	45	28.628	–	28.620
ASTURIAS	95	–	95	–	95
CANTABRIA	40	–	40	–	40
PAÍS VASCO	11.153	105	11.258	–	11.258
NAVARRA	11.634	6.868	18.502	–	18.438
LA RIOJA	34.069	2.279	36.348	–	36.348
ARAGÓN	45.202	3.782	48.984	347	48.637
CATALUÑA	62.499	2.321	64.820	85	64.612
BALEARES	1.606	–	1.606	78	1.528
CASTILLA Y LEÓN	68.659	1.531	70.190	652	69.538
MADRID	16.364	3	16.367	215	16.152
CASTILLA LA MANCHA	545.397	37.194	582.591	80	582.426
C. VALENCIANA	78.128	16.418	94.546	21.426	71.267
MURCIA	36.630	7.836	44.466	4.981	39.485
EXTREMADURA	79.587	–	79.587	999	78.543
ANDALUCÍA	50.428	3.294	53.722	5.623	44.400
CANARIAS	12.091	60	12.151	230	11.921

Own work from INE data

Table 19: Vineyard surface by regions and kinds, 1997

	1997				
	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	27.801	45	27.846	–	27.838
ASTURIAS	95	–	95	–	95
CANTABRIA	42	–	42	–	42
PAÍS VASCO	11.222	110	11.332	–	11.332
NAVARRA	11.742	7.388	19.130	–	19.080
LA RIOJA	34.590	2.379	36.969	–	36.969
ARAGÓN	44.235	3.864	48.099	314	47.785
CATALUÑA	62.334	2.330	64.664	57	64.489
BALEARES	1.574	–	1.574	66	1.508
CASTILLA Y LEÓN	68.637	1.529	70.166	565	69.601
MADRID	20.194	8	20.202	209	19.993
CASTILLA LA MANCHA	545.234	38.303	583.537	89	583.363
C. VALENCIANA	73.962	16.356	90.318	20.275	68.752
MURCIA	37.202	11.399	48.601	5.132	43.469
EXTREMADURA	76.320	300	76.620	1.039	75.536
ANDALUCÍA	48.301	2.764	51.065	4.898	40.600
CANARIAS	12.689	75	12.764	247	12.505

Own work from INE data

Table 20: Vineyard surface by regions and kinds, 1998

	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	28.523	45	28.568	–	28.560
ASTURIAS	85	–	85	–	85
CANTABRIA	42	–	42	–	42
PAÍS VASCO	9.186	2.462	11.648	–	11.648
NAVARRA	11.014	8.578	19.592	–	19.532
LA RIOJA	34.665	2.578	37.243	–	37.243
ARAGÓN	43.743	4.559	48.302	191	48.111
CATALUÑA	62.173	2.403	64.576	54	64.406
BALEARES	1.567	–	1.567	66	1.501
CASTILLA Y LEÓN	68.150	1.545	69.695	450	69.245
MADRID	19.048	5	19.053	25	19.028
CASTILLA LA MANCHA	554.577	39.261	593.838	37	593.716
C. VALENCIANA	73.333	15.727	89.060	20.487	68.573
MURCIA	36.022	11.108	47.130	5.136	41.994
EXTREMADURA	76.136	310	76.446	714	75.687
ANDALUCÍA	42.858	2.696	45.554	4.112	38.196
CANARIAS	12.616	53	12.669	142	12.515

Own work from INE data

Table 21: Vineyard surface by regions and kinds, 1999

	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	30.794	45	30.839	–	30.831
ASTURIAS	80	–	80	–	80
CANTABRIA	42	–	42	–	42
PAÍS VASCO	9.339	2.562	11.901	–	11.901
NAVARRA	11.260	9.337	20.597	–	20.460
LA RIOJA	35.894	2.955	38.849	–	38.849
ARAGÓN	43.555	5.341	48.896	195	48.701
CATALUÑA	61.946	2.808	64.754	38	64.587
BALEARES	1.763	–	1.763	66	1.697
CASTILLA Y LEÓN	68.067	1.569	69.636	237	69.399
MADRID	18.551	5	18.556	31	18.525
CASTILLA LA MANCHA	548.331	46.069	594.400	74	594.261
C. VALENCIANA	72.979	15.911	88.890	18.420	70.390
MURCIA	34.859	11.370	46.229	5.399	40.830
EXTREMADURA	85.779	310	86.089	734	85.260
ANDALUCÍA	42.653	3.067	45.720	4.274	38.200
CANARIAS	12.627	57	12.684	163	12.509

Own work from INE data

Table 22: Vineyard surface by regions and kinds, 2000

	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	32.457	—	32.457	—	32.457
ASTURIAS	96	—	96	—	96
CANTABRIA	42	—	42	—	42
PAÍS VASCO	9.825	2.575	12.400	—	12.400
NAVARRA	12.563	10.131	22.694	—	22.395
LA RIOJA	36.644	3.236	39.880	30	39.850
ARAGÓN	43.683	5.748	49.431	273	49.158
CATALUÑA	62.825	2.789	65.614	64	65.431
BALEARES	1.855	—	1.855	66	1.789
CASTILLA Y LEÓN	68.179	1.666	69.845	238	69.607
MADRID	18.603	5	18.608	20	18.588
CASTILLA LA MANCHA	524.349	75.880	600.229	49	600.162
C. VALENCIANA	72.216	14.866	87.082	11.878	75.204
MURCIA	37.881	11.790	49.671	5.757	43.914
EXTREMADURA	85.973	312	86.285	742	85.498
ANDALUCÍA	42.553	3.428	45.981	4.573	38.455
CANARIAS	11.632	1.224	12.856	216	12.640

Own work from INE data

Table 23: Vineyard surface by regions and kinds, 2001

	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	32.966	—	32.966	—	32.966
ASTURIAS	99	—	99	—	99
CANTABRIA	42	—	42	—	42
PAÍS VASCO	10.230	2.575	12.805	—	33.107
NAVARRA	12.381	11.676	24.057	—	23.712
LA RIOJA	38.422	3.608	42.030	30	42.000
ARAGÓN	43.721	5.933	49.654	267	49.387
CATALUÑA	61.483	3.006	64.489	53	64.318
BALEARES	1.956	—	1.956	66	1.890
CASTILLA Y LEÓN	67.912	1.636	69.548	116	69.386
MADRID	18.487	156	18.643	15	18.628
CASTILLA LA MANCHA	518.441	81.492	599.933	49	599.866
C. VALENCIANA	70.638	15.636	86.274	11.616	74.658
MURCIA	36.586	11.652	48.238	6.051	42.187
EXTREMADURA	85.798	612	86.410	732	85.633
ANDALUCÍA	42.895	3.265	46.160	4.524	38.683
CANARIAS	17.682	1.281	18.963	126	18.825

Own work from INE data

Table 24: Vineyard surface by regions and kinds, 2002

	Dry land	Irrigated land	Total Surface	Table wine vineyard	Vineyard for tranformation
GALICIA	33.326	–	33.326	–	33.326
ASTURIAS	110	–	110	–	110
CANTABRIA	42	–	42	–	42
PAÍS VASCO	10.589	2.625	13.214	–	13.214
NAVARRA	12.635	11.781	24.416	–	24.416
LA RIOJA	38.795	4.060	42.855	–	42.855
ARAGÓN	34.078	8.497	42.575	285	42.290
CATALUÑA	61.819	3.221	65.040	48	64.876
BALEARES	1.956	–	1.956	66	1.890
CASTILLA Y LEÓN	68.040	2.604	70.644	128	70.516
MADRID	18.314	156	18.470	15	18.455
CASTILLA LA MANCHA	490.450	93.414	583.864	231	583.585
C. VALENCIANA	70.454	15.644	86.098	11.627	74.471
MURCIA	37.793	13.953	51.746	6.211	45.535
EXTREMADURA	86.473	1.012	87.485	732	86.713
ANDALUCÍA	42.238	3.051	45.289	4.298	38.439
CANARIAS	17.671	1.306	18.977	132	18.826

Own work from INE data

As it can be seen, La Rioja and Navarra are the two main regions where there has been a growing demand in all the studied years. There has been an important increase in the surface of irrigated lands in the Canary Islands since 2000, with the new CMO entering into force.

Effects on agricultural practices

Vineyard surface has decreased in the last fourteen years in Spain, although in the last five years it is not decreasing at all (see chapter 1.1). However, wine production and yields are growing so much. As next tables show, in regions like La Rioja and Castilla La Mancha the average size of the farms has grown since 1989. Since 1999, after CMO measures, this size has kept on growing very slowly. It is important to say that the maximum average size of farms in La Rioja was reached in 1997. This information has been taken from the RICA data.

Table 25: Evolution of the average size of farms in Spain distributed by regions (1989-1993)

Year	1989	1990	1991	1992	1993
	SE050- vineyards-ha	SE050- vineyards-ha	SE050- vineyards-ha	SE050- vineyards-ha	SE050- vineyards-ha
A1-Region	Average	Average	Average	Average	Average
(500) Galicia	.	.	.	.	.
(515) Pais Vasco	7.48	.	.	8.55	8.69
(520) Navarra	.	.	.	.	.
(525) La Rioja	6.02	.	.	.	.
(530) Aragón	.	.	.	.	.
(535) Cataluna	.	.	.	.	.
(540) Baleares	.	.	.	.	.
(545) Castilla-León	.	.	.	.	.
(550) Madrid	.	.	.	6.58	.
(555) Castilla-La Mancha	14.36	.	14.31	21.82	14.21
(560) Comunidad Valenciana	12.00	10.49	11.03	11.77	11.82
(565) Murcia	.	.	.	.	.
(570) Extremadura	.	.	.	.	.
(575) Andalucía	.	2.59	2.97	.	.
(580) Canarias	.	.	.	.	.
TOTAL	11.39	11.07	11.42	15.94	13.02

Source: RICA

Table 26: Evolution of the average size of farms in Spain distributed by regions (1994-1998)

Year	1994	1995	1996	1997	1998
	SE050-vineyards-ha	SE050-vineyards-ha	SE050-vineyards-ha	SE050-vineyards-ha	SE050-vineyards-ha
A1-Region	Average	Average	Average	Average	Average
(500) Galicia	.	.	.	.	.
(515) Pais Vasco	.	.	.	.	.
(520) Navarra	.	.	.	.	.
(525) La Rioja	.	.	9.43	9.55	.
(530) Aragón	.	.	.	.	.
(535) Catalunya	.	.	.	.	.
(540) Baleares	.	.	.	.	.
(545) Castilla-León	.	.	.	.	.
(550) Madrid	.	.	.	.	.
(555) Castilla-La Mancha	12.90	14.62	13.42	13.22	13.77
(560) Comunidad Valenciana	12.23	12.38	13.23	9.77	12.72
(565) Murcia	.	.	.	.	.
(570) Extremadura	.	.	.	.	.
(575) Andalucía	.	.	.	.	.
(580) Canarias	.	.	.	.	.
TOTAL	12.53	14.19	13.00	12.05	12.23

Source: RICA

Table 27: Evolution of the average size of farms in Spain distributed by regions (1999-2002)

Year	1999	2000	2001	2002
	SE050-vineyards-ha	SE050-vineyards-ha	SE050-vineyards-ha	SE050-vineyards-ha
A1-Region	Average	Average	Average	Average
(500) Galicia	.	2.97	2.88	.
(515) Pais Vasco	.	12.40	11.06	10.69
(520) Navarra	12.81	12.83	13.57	9.56
(525) La Rioja	7.40	7.31	7.48	7.46
(530) Aragón	.	.	.	.
(535) Catalunya	.	.	.	.
(540) Baleares	.	.	.	.
(545) Castilla-León	.	.	.	.
(550) Madrid	.	.	.	.
(555) Castilla-La Mancha	16.53	16.84	16.90	16.77
(560) Comunidad Valenciana	10.00	10.78	10.50	10.02
(565) Murcia	.	16.95	17.19	.
(570) Extremadura	.	.	.	.
(575) Andalucía	.	.	.	.
(580) Canarias	.	.	.	.
TOTAL	13.05	14.63	14.85	14.36

Source: RICA

The regions of La Rioja and Navarra can be considered hill regions and the region of Castilla La Mancha can be considered a planed region. Therefore, it can be said that vineyards surfaces are increasing in hill regions and decreasing in planed regions, as last tables and charts show. Spanish vineyard is undergoing a big intensification during these years. Many new varieties are being planted as you can see in

Table 28: Evolution of vineyard surface by varieties (hectares). These new varieties try to fight against losses of biodiversity that crop intensification usually causes.

Table 28: Evolution of vineyard surface by varieties (hectares)

MOST REPRESENTATIVE VARIETIES	1979	1999
AIRÉN	451,326	425,974
GARNACHA	229,355	104,241
BOBAL	90,201	103,828
TEMPRANILLO	69,497	79,034
MONASTRELL	107,214	67,056
PARDINA		49,212
MACABEO	48,311	42,753
PALOMINO FINO	28,088	21,399
GARNACHA TINTORERA		16,746
PEDRO XIMÉNEZ	34,026	16,509
MANTÚA		12,969
PARELLADA		11,039
MENCÍA	19,100	10,656
MOSCATEL DE MÁLAGA	22,149	10,451
XARELO	41,409	10,110
MALVASÍA	18,779	9604
ZALEMA	20,865	8691
MAZUELO		8496
CALAGRAÑO		8068
MESSEGUERA	32,742	7643
PARDILLO	25,038	7203
ITALIA		7031
BLANCA CAYETANA	34,668	6994
PRIETO PICUDO	16,853	6809
LISTÁN NEGRA		6188
LISTÁN BLANCA		5897
BEBA		4936
TINTO DE LA PÁMPANA BLANCA		4750
GARNACHA BLANCA	24,396	4317
ALEDO		4004
ALBILLO		3997
VERDEJO BLANCO	18,618	3991
CABERNET SAUVIGNON		3448
GARNACHA PELUDA		3428
CARDINAL		3260
VERDONCHO		3172
TINTO VELASCO		3097
MORAVIA DULCE		2726
FORCALLAT TINTA		2300
ALFONSO LAVALLE		2079
PLANTA NOVA		2071
TINTO BASTO		2067
BORBA		1926
PERRUNO		1828
ALARJE		1780
NAPOLEÓN		1715
NEGRAMOLL		1466
SUMOLL		1370
ROYAL		1347
ROJAL TINTA		1317
CHARDONNAY		1289
JUAN GARCÍA		1973
TREPAT		1159
ROSETI		1141
MIGUEL DE ARCO		964
RUFETE		960
MORAVIA AGRIA		937
MERLOT		881
JAÉN TINTO		857
NEGRA COMÚN		854

DOÑA BLANCA	822
DOMINGA	804
MORISCA	733
OHANES	732
PANSE VALENCIANA	606
ROBAL	570
COLORAILLO	528
FORASTERA	525
GODELLO	458
PLANTA MULA	411
GRAN NEGRO	395
TORRONTÉS	362
MOLINERA	333
SAUVIGNON BLANCA	325
MALVAR	263
MANDÓN	238
VIJIRIEGO	231
GARRIDO FINO	221
ALBARÍÑO	205
CAÍÑO	179
TINTA GORDA	179
BONICAIRE	178
GRACIANO	175
CAÑORROYO	158
PINOT NOIR	153
TREIXADURA	151
MOURATON	149
PALOMINO SUPERIOR	96
CONCEJÓN	85
CHASELAS DORADA	49
MARISANCHO	38
CARIÑENA BLANCA	26
DORADILLA	24
ONDARRABI BELZA	22
ONDARRABI ZURI	11
DIEGO	5

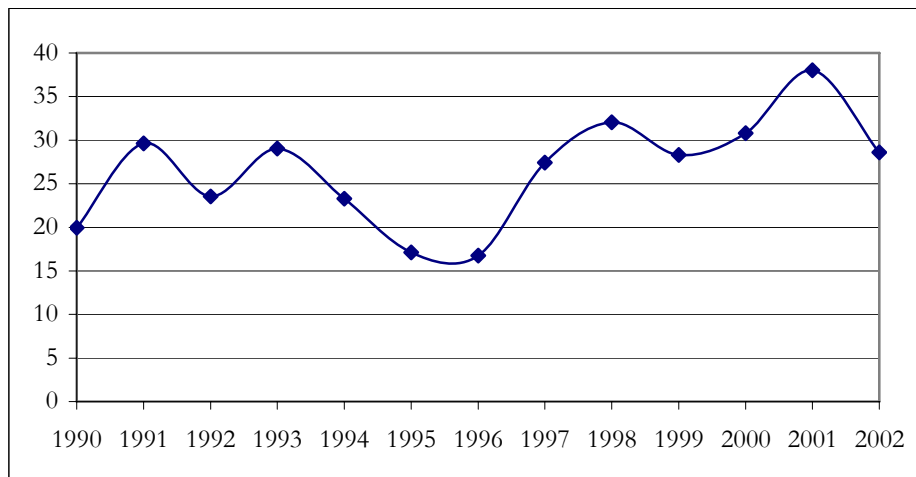
Source: IMIDRA

As these tables show, there have been many changes in Spanish vineyard during last years. These changes include crop and soil uses, yields, productions, varieties, etc. Landscape, biodiversity, soil erosion, fauna and other environmental aspects can be affected by these changes, especially in arid zones with particular climatic conditions. Next table shows the evolution of the vineyard yields. It is easy to realize that yields oscillate a lot, but Chart 14 shows that during last eight years, the yields are growing so much. Between 1999 and 2002, the yields have oscillated a lot, but these oscillations mainly depend on the production of each year. These yields are growing because of the research, development and new licences.

Table 29: Evolution of the vineyard surface, production and yield

Years	Total vineyard surface (thousands of hectares)	Total Production (millions of hectolitres)	Vineyard yield (hectolitres/hectare)
1990	1.453,7	29.0	19.95
1991	1.430,5	42.4	29.64
1992	1.380,0	32.5	23.55
1993	1.280,4	37.2	29.05
1994	1.232,8	28.7	23.28
1995	1.196,2	20.5	17.14
1996	1.158,0	19.4	16.75
1997	1.155,9	31.7	27.42
1998	1.161,4	37.2	32.03
1999	1.176,1	33.3	28.31
2000	1.194,6	36.8	30.81
2001	1.201,7	45.7	38.03
2002	1.186,0	33.9	28.58

Source: Own work from official statistical data of MAPA

Chart 14: Evolution of the vineyard yield (hectolitres/hectare)

Source: Own work from official statistical data of MAPA

Effects on the environment

These surfaces of regions like Castilla La Mancha and Extremadura where planting rights have been sold are usually used for planting cereal. Cereal crops need more water than vineyard as they are arable crops. In these arid zones, arable crops yields are very poor, so that many farmers usually stop farming these lands and leave them. Moreover, most of the farmers that sell these planting rights are not professional farmers and they are owners of small farms. Usually, these owners never cultivate their farms after the rights sale. The desertion of these farms usually entails terrible consequences for the environment. Rates of soil erosion of left farms are very high. Moreover, the stability of the agrarian systems falls and it has many bad consequences to the landscape and the biodiversity of the flora and the fauna.

The new plantations in regions that have bought planting rights have been done in different ways. Some times, these new plantations have been done in the framework of the CMO, but other times, these new plantations have been done without any control. These new plantations have entailed some new farming practices, especially during the harvest. Technical experts of the MAPA affirm that in general, best farmers usually act on their own, and they have planted the varieties that they have considered the best in each moment. They have chosen their farming practices too.

Conclusions

The experts consulted affirm that permanent cultures are essential in these arid zones like Castilla La Mancha because they do not need as much water as arable crops do, and they give a higher stability to the agrarian systems. Moreover, permanent cultures provide shelter, protection and food for many animals, which guarantees the biodiversity of the fauna. As they say, the ban of planting was necessary because vineyard surface was growing so much and wine market was in danger. But a real problem exists related to the planting rights. There is not a regulation of the varieties and the methods that farmers must use. Each farmer is choosing the varieties and the farming practices according to productive criteria. Moreover, vineyard surfaces left in seller regions are not being conserved by the owner in most cases and new plantations are entailing a big intensification, what can cause a great damage to the environment. A real replanting policy does not exist. Replanting should be controlled according to criteria of biodiversity, soil and landscape conservation.

The CMO should have an active role on the control and monitoring of planting rights exchanges, applying a real replanting policy, following environmental, economic and social criteria. It is important to stand out the role that regional administrations play on this issue.

Question 2 (VI): Which is the environmental incidence of the by-products distillation mechanisms and other market measures like aid for the use of concentrated grape must?

Measure description

As CMO regulation 1493/1999 says, farmers must hand in all by-products for distillation. Alcohol quantity of these by-products must be at least the 10% of the alcohol of the produced wine. Main objectives of the by-products distillation are: firstly, the increase of the wines quality, avoiding excessive pressing of these by-products; secondly, the profits that this distillation yield to the environment by means of the spread of the mud and thirdly, the use of the distilled alcohol that other industries can do.

Level of implementation

As you can see in table 14, grape must production has grown during last ten years in Spain. The number of beneficiaries of private storage of grape and concentrated must aids has grown so much because of the growing aids that there have been in our country since 1998. As experts consulted affirm, there is not a specific vineyard aimed to the grape must elaboration. These musts are elaborated with the remaining table grapes not marketed as table wine. The most used varieties for the grape must elaboration are Airen and Jaen. These are white grapes varieties, but they are not specific for the grape must elaboration. Usually, wine cellars and distilleries are not so far away. For example, in the middle region of Spain, there are some distilleries between Madrid and Toledo, so that they can work with the wine cellars of both regions.

Table 30: Evolution of the use of concentrated must

Year	Grape Must Production (millions of hectolitres)	Beneficiaries of private storage of grape and concentrated must aids	Use of must aids (millions of EUR)
1990	-	-	-
1991	-	-	-
1992	-	-	-
1993	-	62	-
1994	-	68	-
1995	1.9	29	-
1996	0.9	40	-
1997	3.1	70	-
1998	4.4	72	12.2
1999	4.0	79	10.9
2000	4.1	92	12.1
2001	4.5	134	14.4
2002	3.4	106	15.4
2003	5.9	177	18.8
2004 (forecast)	6.7	-	-

Source: Own work from official statistical data of MAPA

Farmers interviewed affirm that there are not more than 30 km between wine producers and storage areas. Moreover, they affirm that there are about 25 km between storage areas and distilleries. They also affirm that the length of time for by products storage is no longer than 50 or 60 days.

Analysis

There are many differences between the by-products obtained in the red wine elaboration process and those obtained from white wine production process. Fermentation technique of white grape produces fewer dregs and by-products produced in it are less sensitive to the acidification, so they have different treatments. For example, 590.000 tons of marc, 2.9 millions of hectolitres of lies and 11,000 hectolitres of wine were given for by-products distillation during 2001 in Spain. 47.5 millions of litres of pure alcohol were produced and used later in the fuel sector and in other industries of the European Union (MAPA, 2004).

As you can see in Table 31, the tips coming from wine production have a high organic composition and an acid character. They have most of the micro and macronutrients for being biologically degraded. Lies have a higher organic composition and high quantities of solids in suspension, but with a simple physical treatment (centrifugation, filtration etc.) an effluent very similar to the marc can be obtained and treated with the same techniques (R. Solera et al., 2004).

Table 31: Average characteristics of the tips coming from wine distilleries

Indicator	Wine (Open system)	Wine (Closed system)	Lies
pH	3.38	3.39	3.28
QDO (g O ₂ L ⁻¹)	21.1	17.0	181.0
BDO ₅ (g O ₂ L ⁻¹)	14.6	12.0	49.3
Solids in suspension (mg L ⁻¹)	140	120	180
Polyphenols (mg gaelic acid L ⁻¹)	500	500	580

Source: R. Solera et al., 2004

These tips can be purified by some different systems: physical systems that reduce the volume of effluents and separate a great part of the solids in suspension, chemical treatments that prepare the water for getting a better purification in later processes, and biological treatments where an effective reduction of pollutant charge of the tips is achieved. As you can see in table 13, after these treatments, marc has an organic character with solid matter concentrations of 2-15% organic matter concentrations higher than 30% (Vladan Milisic et al., 2004).

Table 32: Composition of wine mud

	Unit	Average	Maximum	Minimum	Value threshold heavy metals European regulation of 2002 on mud spreading
Dryness	%	7.1	24.3	0.5	-
pH	% S.M.	7.1	7.9	5.9	-
Organic matter	% S.M.	64.0	87.9	23.8	-
Kjedahl nitrogen	% S.M.	4.24	6.06	0.81	-
Ammoniacal nitrogen	% S.M.	0.08	0.17	0.00	-
Organic nitrogen	% S.M.	4.16	6.03	0.71	-
C/N ratio	% S.M.	9.1	40.9	5.1	-
Phosphore (P ₂ O ₅)	% S.M.	2.38	6.90	0.77	-
Potassium (K ₂ O)	% S.M.	1.81	7.12	0.22	-

Magnesium (MgO)	% S.M.	0.80	6.20	0.18	-
Calcium (CaO)	% S.M.	4.33	10.98	1.47	-
Chromium	S.M. mg/kg	37.3	103.0	7.3	1000
Copper	S.M. mg/kg	523	3104	65	1000
Nickel	S.M. mg/kg	27.1	73.9	6.9	300
Zinc	S.M. mg/kg	680	2285	106	2500

Source: Vladan Milisic et al., 2004

The marc is extracted and stored during roughly two months. 100 kg of marc produce 12° or 13° degrees of alcohol, 4 or 5 litres of alcohol and 3 or 4 kg of tartaric acid. When they are well fermented and their humidity is low, they can be spread. During the storage, they can cause few bad smells and probably some little lixivates. Then, after the storage, the marc can work as a good fertilizer. The spreading process is not easy. As the experts consulted affirm, the most effective method of marc spreading is by hand. This method is very expensive and it involves a long time and a high cost. Moreover, traditionally marc has been used for animal feeding but just as a complementary food because of its low nutritive value and its bad digestion. The rest of the by-products can be used for making low quality vinegars, oil from grape pips, etc. (R. Solera et al., 2004).

As for distilleries, the following table shows the authorized distilleries in Spain which are in charge of distilling the resulting by-products:

Table 33: Main authorized distilleries in Spain

PROVINCE	DENOMINATION	PROVINCE	DENOMINATION
Albacete	Destilerías Manchegas, S.Coop Aceites, Vinos y Alcoholes, S.A Vda. Joaquín Ortega S.A	La Coruña	Dest. Compostela, S.A
		Huesca	Aguardientes y licores Colungo S.L
Badajoz	Comercial Industrial de La Serena, S.L Vinícola del Oeste, S.A Vinialcoholera de Badajoz, S.A	León	Los Prietos C.B
			Alcoholes León, S.L Luisa González González Ana María Jul Martínez
Barcelona	Miguel Torres, S.A Cades Penedés, S.A Alcoholera Vinícola Mediterránea S.A Hermanos Olive, S.L Antonio Mascaró, S.L		La Rioja	Amador González Tojal Alcoholera de La Rioja, Ebro y Duero, S.A
		Lugo	Sidrería Gallega, S.L
		Navarra	Agralco S.Coop. LTDA
		Orense	Destilerías de Galicia S.A
Ciudad Real	Gral. De Destilaciones, S.A Alcoholeras Reunidas, S.A Alcoholera de la Mancha, S.A Mostos, vinos y alcoholes, S.A Alcoholera Vinícola Europea, S.A Alcoholes de Tomelloso, S.A Alcoholes y Vinos, S.A Bodegas Osborne, S.A D.V.T España, S.A Allied Domecq. S.A	Toledo	Alcoholera de la Puebla, S.A Algarve 1914, S.L
		Valencia	Coop. Del Campo Nueva Alcoholera Vinícola del Oeste, S.A
		Valladolid	Destilerías de Duero, S.L Valentín Carbajal García
		Zamora	Destilerías J.Panizo S.L Hermanos de la Fuente, C.B
		Zaragoza	Destilerías San Valero S.Coop.

Source: MAPA

Effects on the environment

As the experts consulted say, there are not scientific studies that prove that wine marc spreading has negative impacts on the environment whenever the heavy metal level is under the limit value. Lixivates and smells must be controlled during the fermentation and storage process. So that, the marc can be a good fertilizer and can contribute to improve the environmental conditions. Moreover, the quality of the wines produced from treated soils gets improved and so, one of the most important objectives of this regulation is achieved.

Conclusions

Wine marc spreading has not negative effects for the environment whenever it is done under the regulation, with strict controls of the heavy metal levels. Moreover, this spreading can be positive for the soil fertility.

In this case, the CMO plays a very important role since it contributes to improve quality wine avoiding excessive grapes pressing and at the same time it benefits the environment by improving soil fertility

It is necessary to develop integrated management systems for organic wastes. When these residues are aimed to soil fertilizing, an appropriate treatment must be applied in order to get quality products. Then, a management residues plan must be elaborated. Composting and anaerobic digestion are two processes to bear in mind.

3.1.2 Wine – Theme 2: structural measures

Question 1 (V2): Which is the environmental incidence of the abandonment grant?

Measure description

The main objective of this measure was to control the surplus of product. The abandonment grants were given to some farmers to eliminate the worst wine varieties because of their yield and their low production. This decision was supposed to make the quality improve.

Level of implementation

This measure appeared in Spain during last 80s to control the wine production, which was growing each year, as it can be seen at tables in first chapter. With the CMO of 1999, this measure is not being applied in Spain anymore.

Effects on the agricultural practices

The main effects are those related to the change of culture: tillage, irrigation systems, harvesting methods, etc...These changes take place when a different culture substitutes the abandoned vineyard. The other effect is the lack of agricultural practices when the abandon is total and no labours are made.

Effects on the environment

Soil erosion and loss of biodiversity are the most serious effects derived from this grubbing up practice.

Analysis

In Spain, from last 80s to last 90s a great quantity of vineyard was uprooted because of these grants. Since the new CMO regulation of 1999 came into force, vineyard has not been uprooted in our country.

This process had been developed in accordance with some criteria. These criteria were, as the specialists of MAPA affirm, the following ones:

- Quality wine,
- Rainfall and
- Depopulation.

There were more than these three ones, but these are the most important of them. The maximum quantity of uprooted vineyard was the 10% of the production. The abandonment took place in many different zones, especially where yields and productions were low and where population was growing so much (regions as Madrid and Catalonia).

The 55% of the grubbed up vineyard was made in Castilla la Mancha, where 110,834 hectares were uprooted until the 95/96 campaign. Almost the 75% of the abandoned vineyard belonged to an Origin Denomination, more specifically, a 63% of the abandoned surface belonged to La Mancha Origin Denomination. The other 25% were destined to table wines.

This measure has a direct incidence on the environment, since it means the total abandon of any agrarian activity in many cases.

With the vineyard culture, there is a vegetal cover in the summer dry months which preserves soil from erosion and draught. When this protection disappears there is a loss of macro and micro organisms.

The experts consulted affirm that the main problem is the left of the farms that the owners are doing. Cereal planted after vineyard was not as profitable as they would have liked. Even when the regulations did not include environmental measures, farmers interviewed think that the abandonment grants have been positive for the environment when a reforestation process has taken place.

Some technical experts consulted affirm that there have not been great environmental problems because of this measure. New varieties are being planted every year, so that biodiversity is not being affected. Probably, soil erosion is the main negative consequence that this measure has caused, but people interviewed do not think that this is a transcendental problem.

Conclusions

The abandonment grants measure has been harmful for the environment at a low level, being soil erosion and loss of habitats and biodiversity the main worrying questions. Its main objective, the control of production, has not been reached. Some farmers and other technical experts agree with a new phase of abandonment grants and defend the green vintage.

The negative environmental effects are mainly due to the lack of control of the abandon programs, which should have been a priority.

Question 2 (V2): Which are the environmental effects of restructuring and conversion of vineyards (variety conversion, relocation, adoption of new production techniques)?

Measure description

Since the CMO of 1999 many hectares of vineyard have been restructured in our country (more than 100,000 hectares). This process was developed with the objective of the vineyard renovation.

A new mechanization process, new irrigated lands, new farm technical practices and new varieties are the main tools for this implementation. Many old vineyards have been substituted in the last five years.

Level of implementation

As we have said before, more than 100,000 hectares of vineyard have been restructured and converted since the CMO of 1999 came into force. More specifically, and as it can be seen in table Q2 V2-1 about the evolution of vineyard restructuring plans in Spain, a total of 127,128 hectares are included in the restructuring plans.

Effects on the agricultural practices

Restructuring and conversion plans include a varietal change (to more commercial varieties), a transformation into espalier production system, replanting of vineyards and soil treatments (mainly disinfection treatments).

Effects on the environment

Once again, the main potential negative effects on the environment would be those related to soil erosion. As we have said before, with the vineyard culture, there is a vegetal cover in the summer dry months which preserves soil from erosion and draught. When this protection disappears there is an important loss of macro and micro organisms in the soil.

Analysis

Spain is the country with the biggest surface of restructured vineyard in the European Union. As the table of varieties evolution shows in chapter 1, there are some varieties as Airen and Garnacha that are being reduced so much. However, varieties as Cabernet Sauvignon and Merlot are growing so much. This restructuring has been appreciated by producers. They think that this conversion should have been impossible without grants. They affirm as well, that this conversion was necessary and that it must continue.

Next table shows the evolution of the restructuring plans in the different Spanish regions in the last five campaigns. As it can be seen, Castilla la Mancha is the region where a major surface is being restructured.

Table 34: Evolution of vineyard restructuring Plans in Spain (2000-2005)

REGION	TOTAL VINEYARD SURFACE	CAMPAIGN 2000/01	CAMPAIGN 2001/02	CAMPAIGN 2002/2003	CAMPAIGN 2003/04	CAMPAIGN 2004/05	TOTAL
(hectares)							
Andalucía	39,993	849	729	749	704	432	3463
Aragón	48,232	1790	2080	2183	1279	1016	8348
Asturias	218		2	2	6	0	10
Baleares	1631	149	137	42	58	16	402
Canarias	19,921	247	335	109	212	220	1123
Castilla y León	77970	1903	1833	1027	1146	1111	7020
Castilla la Mancha	519,472	12,137	11,507	11,169	11,158	10,956	56,927
Cataluña	64,374	2559	2415	1774	1550	1377	9675
Extremadura	97,599	3776	4236	3003	2812	2028	15,855
Galicia	32,327	293	334	330	332	348	1637
Madrid	17,634	151	374	267	138	43	973
Murcia	40,568	409	747	581	653	512	2902
Navarra	24,416	1303	655	627	490	416	3491
Pais Vasco	13,216	1630	220	89	187	215	2341
La Rioja	42,231	2084	593	694	562	414	4347
Valencia	77,792	2652	2353	1289	1189	1120	8603
Total	1,117,594	31392	28550	23935	22477	20,224	127,118

Source: MAPA

As it is mentioned in chapter 2.2 (level of implementation of the various measures of the CMO in Castilla la Mancha), the objective was to restructure a total of around 100,000 hectares through 340 approved plans.

There are no environmental considerations in these plans, and no preservation measures have been developed. These plans cause some significant environmental effects: On one hand, intensification is being produced in order to get better yields per hectare, with an increase in the use of inputs (pesticides, fertilizers, tillage, mechanization, etc...) as a result; on the other hand, a change of habitats is produced, which directly influence the ecosystems, with a special incidence on the steppe birds. Besides, restructuring plans imply an irrigation system in general, which causes a serious problem due to the lack of water in the area.

According to the experts' opinion, there has not been a real environmental plan to develop this measure. They have worked just with small local plans made by the producers' organizations. Each region has administered the grants on their own. There have not been environmental measures associated with this process. Farmers interviewed affirm that, in general, this measure has not been negative for the environment because agricultural practices, yields and productions have been improved. There has only been a real problem: soil erosion.

Q.W.P.S.R. regulations are favouring this conversion because of their own production rules, such as the limitation of the yields and irrigation, as well as their regular controls.

Conclusions

The application of this measure has some negative effects for the environment and it should be regulated in the future, taking into account more strict environmental considerations and improving the restructuring plans, which must be linked to environmental preservation plans, with a special attention to water availability.

Question 3 (V2): Which is the environmental incidence of uproot aids and compensations for uproot cost and loss of income? [In special those concerning the countries that are entering in the EU in a long deadline]

This question can be answered with the reasoning of the question before. As the experts consulted affirm, New Estate Members are not a risk for the Spanish vineyard, because they are not real competitors in this crop. The problem would appear if the reorganization of no developed zones carries the grants from Spain to other countries. The value of the vineyard for rural development should be a good way to keep people in rural zones.

3.1.3 Wine – Theme 3: other regulatory measures and especially those for QWPSR

Question 1 (V3): Which are the environmental effects of the CMO requirements for QWPSR? [In special those concerning: traditional conditions of production, cultivation methods, yield per hectare and demarcation of product]

Measure description

The Council Regulation N° 1493/1999 on the common organization of the market in wine establishes the requirements that a quality wine produced in a specific region (QWPSR) must comply; there are national provisions adapted to this respect. The Member State shall communicate the list of recognised QWPSR following certain basis.

Level of implementation

In Spain, this measure is totally implemented through the Spanish Law for wine and vineyard (Ley 24/2003) which establishes the different categories for this kind of products. QWPSR includes all the origin denominations.

Effects on the agricultural practices

There are some yields and irrigation limits for the QWPSR. These limits must be established by the regional administration affected. The cultivation methods are affected since there is a change into the espalier system, which permit a mechanized harvest.

Effects on the environment

There are no remarkable effects on the environment, since there are few differences between this wines and common table wines elaboration processes.

Analysis

Q.W.P.S.R. existence is the responsible of the wine market balance. These rules allow the farmer to sell the high quality wine cheaper than the others. This kind of wine is produced under Origin Denominations. As the experts consulted affirm, this measure is holding the wine market.

As chapter 1 shows, there are 60 Origin Denominations in Spain. They produce the Q.W.P.S.R. wine and it supposes more than 10 millions of hectolitres each year in our country. This measure has a great development in this sector and it is something that all the experts and farmers consulted

would keep in their opinion. This measure guarantees high quality wines, and this is the real advantage that it causes.

The CMO regulation demands certain practices that can have some impacts on the environment:

- Limitation of the production area: this measure may cause a potential abandon of lands and a possible vineyard delocalization from traditional productive areas to more economically attractive zones. The use of new lands, geographically accurate but needing specific treatments to adapt to consume, may cause an impact for the environment (use of inputs).
- Use of specific varieties: only *vitis vinifera* species is admitted, so there is a restriction in the use of varieties that may cause an impact on the biodiversity.
- Yield limitations: when exceeded, wines are declassified, so it is possible that a turn to non intensive production systems is produced.
- Minimum alcoholic degree: later treatments to modify alcoholic degree are permitted; these treatments could cause environmental impacts of industrial contamination due to the products used in this process.

All the technical experts consulted affirm that the measure concerning quality wines produced in specific region (Q.W.P.S.R.) do not have real positive effects on the environment. Probably, yields and irrigation limitations can be positive for the soil and the environment, but it is not an important benefit.

Conclusions

This measure guarantees high quality wines and is essential to keep the correct development and balance of the market. The positive effects on the environment are reduced; each region can adapt to the rules depending on its environmental characteristics, water availability, soil conditions, etc...

Question 2 (V3): Which is the environmental incidence of the oenological practices regulation?

Measure description

The wine CMO of 1999 includes certain authorised oenological practices and processes whose main objective is to improve wine quality. Some of the most important ones are the ban of water addition, the ban of coupage and the enrichment practices limitations.

Level of implementation

All the different practices have not been implanted at the same time in the different Member States. In Spain for example, coupage will be permitted until 31 July 2005 since this is an area where such a practice is a traditional one; other practices like the ban of water addition was implanted when the regulation entered into force. Enrichment is not permitted in Spain.

Effects on the agricultural practices

The main effects are linked to the spread of mud on the soil as a fertilizer.

Effects on the environment

The application of mud as a fertilizer for the soil could potentially contaminate water due to lixiviation when the content of

Analysis

These treatments are directed to obtain better wines and the possible environmental effects can be distinguished between:

- Direct impact on soils
- Impact of industrial practices

There is not a real influence on the environment because of the implantation of these measures as the experts consulted affirm. These measures were elaborated to improve the quality of the wines.

The farmers consulted defend that it is not possible to change the production process because of this regulation, but they affirm that there are not bad consequences on the environment.

By-products are very similar and, nowadays, they are treated with some different processes as it is explained at question 2. Mud is more and more treated in a purifier and it is spread on the soil for fertilizing. This practice is being more frequent each time as farmers consulted affirm. They think that there could be some influence in the water contamination because of these measures, but this does not seem a real problem by now.

Conclusions

As we have said, there are not direct consequences on the environment because of these measures; they seem to influence just in wine quality.

As the experts consulted affirm, neither of the regulations that include oenological practices is helping the conditions of the vineyard of arid zones of Spain. Organic farming is not so much developed in Spain.

3.1.4 Wine – Theme 4: accompanying measures

Question 1 (V4): Are the accompanying measures to preserve vineyards in certain regions effective in terms of a positive environmental impact?

Measure description

The wine CMO defines some description, designation, presentation and protection rules with the following objectives:

- protection of the legitimate interests of consumers
- protection of the legitimate interests of producers
- the smooth operation of the internal market
- the promotion of the production of quality products

This question refers to the possible positive environmental impacts derived from the products whose elaboration techniques are respectful with the environment, and if a specific label (organic farming or integrated production) may have any effect on the environment.

Level of implementation

Both organic farming and integrated production systems have low levels of implementation in Spain, but the trend seems to be rather positive, since the number of organic products is increasing, as well as the number of products coming from integrated production systems. As for the level of preferences of consumers for this kind of products, it is difficult to find studies which show this data.

Effects on the agricultural practices

The main observed effects are those related to the use of organic fertilizers, the reduction of tillage, and the reduction in the use of pesticides. The production of organic wine in Spain does not imply strong requirements and is not difficult to achieve, since the current traditional methods are almost organic.

Effects on the environment

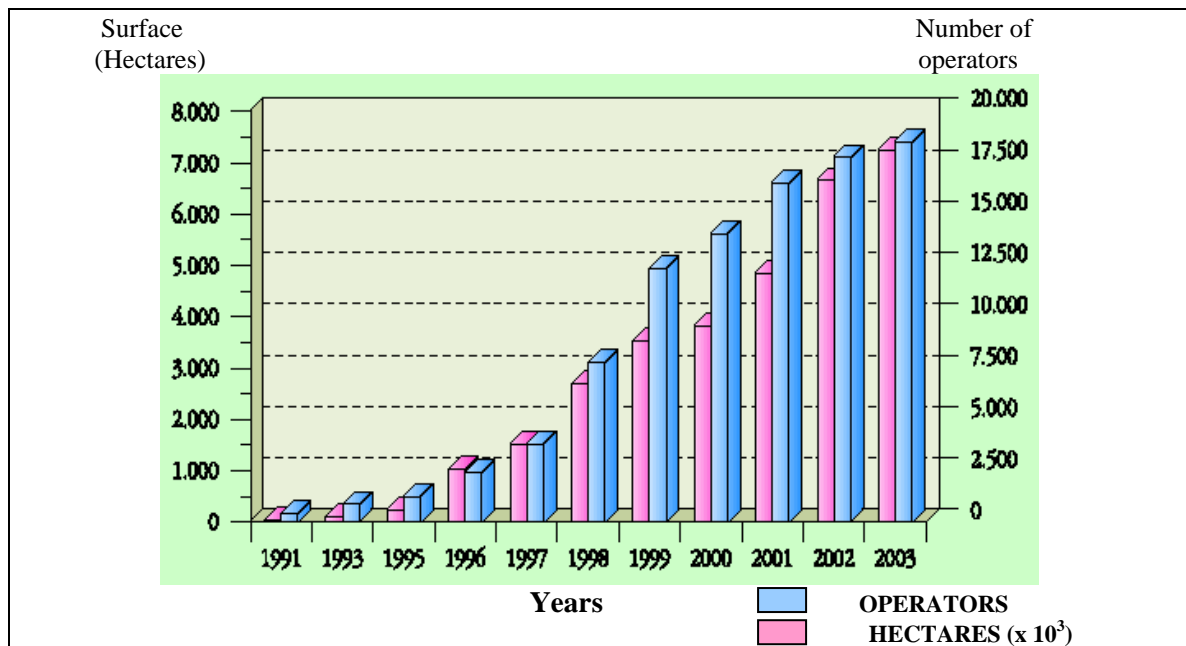
Organic farming and integrated production systems have some interesting benefits for the environment, mainly for the reduction in the use of pesticides and mineral fertilizers, as well as for the tillage reduction, but in Spain there are no big differences between these methods and the traditional ones, since the production systems are almost organic, as we have said before.

Analysis

These protected vineyards are not very common in Spain; according to the consulted experts, there are some protected areas in Lanzarote (Canary Islands) and some slope areas where vineyards are kept to avoid soil erosion, even when they have no productive interest. In Castilla la Mancha, protected vineyards are mainly located in the arid zones of Ciudad Real.

The following chart shows the evolution of organic farming in Spain from 1991 to 2003; there has been an important increase in the numbers of operators and in the number of hectares affected, as it can be seen:

Chart 15: Organic farming evolution in Spain (1991-2003)



Source: MAPA publication, Hechos y Cifras de la Agricultura, la Pesca y la Alimentación en España, 2004

From a total organic surface of 725,254.43 ha, the organic wine surface in Spain represented a 5 % in 2003. As we can see in the following table, Castilla la Mancha has a 30 % of the total organic wine surface of Spain, followed by Murcia, Extremadura and Comunidad Valenciana.

Table 35: Organic farming surfaces in Spain for vineyard (2003)

Region	Hectares of vineyard
Andalucía	372.16
Aragón	243.83
Asturias	-
Baleares	96.24
Canarias	439.65
Cantabria	-
Castilla la Mancha	4829.14
Castilla y León	315.86
Cataluña	915.00
Comunidad Valenciana	1849.00
Extremadura	1916.63
Galicia	7.13
Madrid	206.70
Murcia	3954.22
Navarra	934.44
País Vasco	51.48
Rioja	321.66
TOTAL IN SPAIN	16453.14

Source: Statistical data from MAPA

As for integrated production, the next table shows the percentages in which it is represented in Spain. Vineyard has only a 0.4 % of its production under the integrated production system.

Table 36: integrated production in agriculture in Spain (2002)

Culture	Integrated Production (Hectares)	Total Agriculture (Hectares)	Percentage (%)
Rice	49587.00	109,175	45.4
Citrus Fruits	18226.60	33,227	6.1
Strawberry	4260.00	9446	45.1
Fruit trees	37015.03	305,209	12.1
Edible Vegetables	11979.40	205,823	5.8
Olive	47072.33	2,411,151	1.9
Vineyard	5401.30	1,208,152	0.4
TOTAL	185974.17	4,166,067	4.5

Source: MAPA publication, Hechos y Cifras de la Agricultura y la Alimentación en España, 2005.

Conclusions

In the last ten years, there has been an important increase in the number of organic wine producers and in the volume of organic wine in Spain, but this is still a low demanded product, since consumers are not very fond of it, in spite of their interest in the environment, which is higher each time.

The incidence of organic farming and integrated production systems in the wine sector is not very relevant for the environment in Spain, since there is a low difference in the production process compared with the traditional one, as experts consulted affirm. Nevertheless, it is important to maintain some protected areas where the main interest is to avoid soil erosion and to keep the landscape value.

Producers are for the green vintage as a way to protect soils and reduce surplus productions. Actually, it would be very positive to protect the vineyards of the central arid zones of Spain (Castilla la Mancha, Murcia, Levante).

More promotion for these products is needed in Spain, since consumers are more familiar to the Origin Indications as a quality system, and are not very conscious of the organic wine importance; only the specialised restaurants and shops work with this kind of products, and the number of interested consumers is still very scarce.

3.1.5 Wine – Theme 5: environmental promotion

Question 1(V5): Has the promotion realized by Member States and regions of environmentally friendly production techniques with the help of producer organizations and sectoral organizations been effective?

Measure description

Producer organizations and sectoral organizations usually promote cultural practices, production techniques and waste management techniques friendly with the environment in order to accomplish some of their constitutional requirements.

According to the wine CMO, one of the producer organizations particular aims is: “Promoting the use of environmentally sound cultivation practices, production techniques and waste-management practices, in particular to protect the quality of water, soil and landscape and preserve and/or encourage biodiversity”. Besides, they must enable their members to obtain technical assistance in using environmentally sound cultivation practices.

As for the sectoral organizations, they must develop some measures taking account of the interests of consumers: "Seeking ways of restricting the use of plant-health products and other inputs and ensuring product quality and soil and water conservation; promoting, in particular, integrated production or other environmentally sound production methods".

Level of implementation

There are three sectoral organizations in Spain in the wine sector and sixteen producers' organizations at national level (see 1.3.2 Private Organizations in the first part of the document).

One of their common aims is the development of environmental programs. The ATRIAS (associations for integrated treatment in agriculture) help to achieve this aim, using the biological control of pests.

Effects on the agricultural practices

The main changes are those related to soil management: a decrease in the use of pesticides and mineral fertilizers, as well as a tillage reduction. In addition, organic fertilizing is promoted.

Effects on the environment

A tangible effect of these actions is the reduction of some residues coming from different treatments, above all in soils more than in water.

Analysis

There are three sectoral organizations in Spain in the wine sector:

- INTERMOSTO: For must and grape juice elaboration.
- IVIM: For table wine elaboration
- OIVPR: For the wine produced in La Rioja.

Besides, there are sixteen producers organizations at national level (see 1.3.2 Private Organizations in the first part of the document).

Apart from the private initiative, there is a national Strategic Plan for Organic Farming in Spain; this Plan will be carried out from 2004 to 2006 and consists of eight basic objectives and 55 single actions. One of its objectives is to increase the consumer's confidence in this kind of products by means of information, training, promotion and control.

The ATRIAS (Associations for integrated treatment in agriculture) promote integrated production in vineyard, with programs for the biological control of pests. As we have seen in question 1 (V4), the level of implementation of this kind of system is still very low in Spain, only a 0.4 % of the total vineyard surface is cultivated under this system.

The producers consulted affirm that these organizations do help in the promotion of these methods, but they consider that the level of producers who get involved in its implementation is still rather low.

Conclusions

The producers' level of motivation for organic wine farming and integrated production systems is higher each time, above all among young producers and in the private sector. The integrated production is being promoted among producers thanks to the aids given by the regional governments to the ATRIAS (associations for integrated production in agriculture), which are independent and different from Producers Organizations.

In spite of this trend, this level of motivation is still very low, since there is a generalized lack of promotion at both national and regional levels. In addition, consumers' interest for organic wine is still rather low, and its consume is some times limited to specialized restaurants, what does not encourage producers to improve its production.

3.2 Horizontal questions

3.2.1 Horizontal – Theme 1: land use over time

Question 1(H1): Does the CMO lead to substantial changes in land use over time (abandonment, expansion and set-aside) and if so: what are the positive and negative environmental impacts? [This question should preferably consider typical patterns of alternative status/use after or before use of the land for the permanent crop to which the CMO relates.]

Measure description

Abandonment has been a very used measure by wine producers in Spain in the nineties as a way to limit the productive potential of wine. This measure implies the change of the land use, which can have both positive and negative effects on the environment. This question tries to determine if there are any statistical data reflecting these changes in Spain and which type of cultures have substituted the vineyards.

Level of implementation

From 1999, the premium for permanent abandonment has not been used in Spain any more. Nevertheless, it had a great importance in the latter CMO (R (CE) 1442/88).

Effects on the agricultural practices

The main effects are those linked to the specificity of the new implanted culture, which can vary from one to another and from among different regions.

Effects on the environment

The application of the premium for permanent abandonment can have different effects on the environment, above all on the productive capacity of soils and on a potential erosion process. Besides, there are some implications related to the irrigation requirements of the new substitutive cultures.

Analysis

From 1990 to 1995, due to an important crisis in this sector, there were around 200,000 hectares of abandoned vineyard in Spain, implanting new cultures instead, such as cereals, grain legumes, and permanent crops like fruit crops, olives and almond trees. An important part of the surface was simply abandoned. After 1999 there has been no use of the premium for permanent abandonment.

The next table shows the abandoned vineyard surface in Castilla La Mancha from 1998 to 1996; as it can be seen, almost 111,000 hectares were abandoned in this region; this number means approximately a fifty per cent of the total abandoned surface in Spain.

Table 37: Abandoned vineyard surface in Castilla la Mancha (1988-1996), R (CE) n°1442/88

Provincia	Campaign								
	88/89	89/90	90/91	91/92	92/93	93/94	94/95	95/96	TOTAL
Albacete	1194.6	1695.2	2761.6	5824.2	5163.8	2967	823	1320	21749.4
Ciudad Real	1183	1610.2	2811.5	8741.5	9546.5	6285	4291	8819	43287.7
Cuenca	456.4	987.3	2010.9	4035.3	3564.4	2400	1975	1915	17344.3
Guadalajara	29.9	43.8	58.8	220.4	169.1	140	140	64	856
Toledo	541.1	1336.5	1973.5	4140.8	5028.6	6787	4281	3494	27586.5
TOTAL	3409	5673	9616.3	22962	23472	18579	11510	15612	110833.9

Source: Own work from MAPA statistical data

These changes in land use affect to some important environmental aspects, for example the different water requirements of the new implanted cultures tend to be higher, since vineyard takes only 1/5 of the water compared with cereal crops. When changing vineyard to cereal crop, there are major water requirements and this can affect to the environment. The loss of permanent crops is negative for the environment, and the change of varieties must be done together with a germoplasma conservation system.

Plantings rights are bought and sold among the different regions in Spain. Rioja, Ribera del Duero, Rías Baixas and Catalonia are buying planting rights from other regions, specially the first two ones. In some cases, they look for planting rights coming from marginal lands with low yields. This practise implies changes in the land use.

Conclusions

There was an important influence over the land use in Spain when the premium for permanent abandon was in force, but this has changed with the current CMO, since this measure is not being applied anymore.

As for the potential environmental impacts, the most important are soil erosion when land is not reforested and increase in the use of water when changing to arable crops.

The experts suggest more exigent environmental requirements as a way to avoid these risks.

3.2.2 Horizontal – Theme 2: adequate spending level and method

Question 1 (H2): Are there indications that a change in total spending on the CMO in its present form would have a substantial positive or negative environmental impact? [This question should preferably address the claim of the literature that CMO's for permanent crops differ with respect to their overall environmental impact.]

Measure description

In this question, we need to find out whether some changes in the distribution of expenditures within the total budget for this CMO would help to reduce the negative environmental effects or to improve the positive ones.

Level of implementation

The total budget distribution among the different measures from 2001 to 2003 is distributed as follows:

- Nearly 50 % to the measures related to distillation
- 33 % to measures related to restructuring and conversion
- 12% to the use of concentrated must
- 5% to the aid of private storage
- 2% to export refunds
- 1% to premium for permanent abandonment

Effects on the agricultural practices

A budgetary increase in the measures related to restructuring and conversion would imply an improvement of the agricultural practices through the change to high espalier vineyards, the soil disinfection and treatments, replanting, harvest mechanization, etc...

Effects on the environment

The application of some measures of the current wine CMO could have some effects on the environment. The most representative ones would be those related to the premium for permanent abandonment and the restructuring and conversion measures.

Analysis

When asked about this question, experts agree that a reduction of grants would lead to the abandonment of many hectares of vineyard. A hypothetical increase of the premium for permanent abandonment would cause a massive grubbing up, which would cause a high damage on the environment, mainly on the soil, which is very vulnerable to erosion in Spain.

The following table shows the main environmental impacts that can be caused by the application of the wine CMO measures.

Table 38: Significant environmental impacts in the wine CMO

Evaluation Parameters	Notation Type			
Impact nature	Effluents	High water waste during elaboration	Soil Erosion after removing	Packing wastes
Target	Water	Water	Soil	Land
Spatial range	Regional	National	National	National
Level	Primary	Primary	Primary	Secondary
Duration	Long term	Long Term	Long term	Mid term
Intensity	High	High	High	Medium
Reversibility	Reversible	Irreversible	Irreversible	Reversible
Sensibility	Medium	Medium	High	Low
Width and gravity of the impact with all factors combined	Negative	Very negative	Very negative	Negative

Source: Own work

According to the experts consulted, there is a lack of regulation about environmental measures in the present wine CMO, and it is necessary to implement some aids linked to friendly environmental agricultural practices, especially those related to soil conservation, energy, efficient use of water, etc...

Some producers' recommendations for future reforms are related to green vintage, irrigation limits reduction, special aids for quality vineyards, special aids for organic wines, etc...

Conclusions

A reduction of grants would lead to the abandonment of many hectares, with its negative implications on the environment.

There is a lack of environmental regulations for the wine sector, so this is a very important point to stand out for future reforms, since there are several important impacts that could be watched in order to cut them down. Anyway, it is very difficult to determine, from the interviews, which would be the necessary changes in the current budget distribution in order to get better environmental results.

Question 2 (H2: Are there indications that decoupling of spending at its present level would have a substantial positive or negative environmental impact?

The wine CMO does not contain any aids linked to production but the ones related to the use of concentrated grape musts, rectified concentrated grape musts, and a fixed minimum price for distillation. But these are not direct payments in the strict sense of the CAP aids; therefore, we can't talk about decoupling of spending in this case.

Experts interviewed agree that a reduction in the concentrated musts aid would cause an increase of surpluses and abandon. The reduction of distillation aids would have the same effects.

Anyway, it would not have any important implication on the environment other than potential soil erosion if abandon is not linked to a conservation program or similar.

3.2.3 Horizontal – Theme 3: subsidiarity of agri-environmental schemes and horizontal measures

Question 1(H3): Have the agri-environmental schemes and any environmental requirement [“cross-compliance” ex CE 1259/1999] related to these CMOs been sufficiently targeted by Member States and regions at hotspots of environmental degradation or possibilities for environmentally friendly production?

Measure description

Regulation (EC) No 1259/1999 establishing common rules for direct support schemes under the Common Agricultural Policy, says in Article 3 that “Member States shall take the environmental measures they consider to be appropriate in view of the situation of the agricultural land used or the production concerned and which reflect the potential environmental effects” and that “Member States shall decide on the penalties that are appropriate and proportionate to the seriousness of the ecological consequences of not observing the environmental requirements referred to”.

Level of implementation

Vineyard crop is not affected by Regulation (EC) 1259/1999, so there are no cross-compliance implications to accomplish in this case, since wine producers do not receive direct payments. The main objectives targeted in Spain and Castilla la Mancha are based on organic farming, integrated production systems and Good Agricultural Practices Codes.

Effects on the agricultural practices

The environmental requirements can influence the agricultural practices. The Good Agricultural Practices Codes have special requirements for the fertilizing process and for erosion levels control.

Effects on the environment

The establishment of environmental requirements is supposed to be good for the environment, since producers have to adapt their ways to the regulations if they want to receive any aids. Some positive effects can be observed when organic farming and integrated production are promoted by Member States and regional regulations.

Analysis

It is very important to keep a direct link between grants and environmentally friendly ways of production in order to keep the environment safe. To this respect, the Good Agricultural Practices Codes are one of the most important instruments used, together with the promotion of organic farming and integrated production systems.

The case study shows an important increase in the organic farming surface, mainly due to the regional government initiative, who has promoted organic farming because of its respect for the environment, its good quality products and its commitment to rural areas.

A new line of grants was developed in 2002 from the Agri Environmental Program in Castilla la Mancha. This region had a total of 3948 hectares of organic wine in 2002. This surface has increased to 4829 hectares in 2003, which represents a 29% of the national number of total hectares (16453 in 2003).

On the other hand, the Good Agricultural Practices Codes guide the producer to better agricultural practices for the environment.

As we have said before, vineyard crop is not affected by Regulation (EC) 1259/1999, so there are no cross-compliance implications to accomplish in this case. The application of the CMO measures related to wine do not provide for any obligation related to AE actions, such as those provided for by REG. (CE) N° 1257/1999.

The application of REG. (CE) N° 1257/1999 has two measures (3, 4) concerning wine production:

- Measure 3: Environmental techniques or rationalizing chemical products use
 - o Measure 3.2 Integrated Control
 - o Measure 3.3 Integrated Production
 - o Measure 3.4: Ecological agriculture
- Measure 4: Fight against erosion at fragile environments
 - o Measure 4.1: Woody crops at slopes or terrace.

Measures like Good Agricultural Practices (GAP) are not specifically made for vineyards, but Council Regulation 91/676/CEE mentions some good agricultural practices for this crop. In Spain, each region has its own GAP code, although most of them use the national one. In the case of the region of Castilla la Mancha, there is a Good Agricultural Practices Code, with some recommendations about nitrogen fertilizing which affects vineyard crops. Another good agricultural practise in Spain refers to soil protection, due to the high erosion risk of Spanish soils. These are the main environmental worries in Spain, together with the lack of water.

As for organic wine, Spain shows rather good conditions for this kind of environmentally friendly production, since vineyard crop gets well adapted to dry lands. According to the experts, there has been an increase of production in this kind of wines, but it is still developing. Different promotion activities are being carried out, above all in the regions of Madrid and Valencia and people is getting more conscious of this possibility. The proportion of registered farmers who produce organic wines is around 5 %, although there is an important number of not registered ones. The same thing happens with the integrated production, with the same percentage of registered producers.

Conclusions

There are some agri-environmental requirements, different from cross- compliance, which are being correctly implemented in Spain and in Castilla la Mancha, where there has been an important promotion of organic farming and a Good Agricultural Practices Code application in the last years. Avoiding environmental degradation must be one of the main measures to be implemented in a country like Spain, where there is such an important problem with soil erosion and water. Nevertheless, there is a lack of rules and regulations about integrated production in Castilla La Mancha; only eight regions in Spain have a completely developed a regulation to this respect: Catalonia, Comunidad Valenciana, Andalucía, Navarra, Murcia, Extremadura and La Rioja.

From the producers' point of view, environmental requirements are completely necessary, as well as a better promotion of organic farming and integrated production methods, which have still a very low level of representation in the national context.

Matrix of possible environmental impacts of the wine CMO and the RDR measures

Measures Effects	Measures													
	Ban of new plantations	New planting rights creation	Definition of production and analysis practices	Keep of the premium to permanent abandon	Restructuration and reconversion	Surplus storage	Ban of over pressing	Distillation	Use of concentrated musts	QWPSR creation	Import and export regulations	Export refunds possibility	Definition of producer's organizations and sectoral organizations tasks	Definition of labeling and communication rules about the products
Change in the technical production: intensification increase		-			-					=			=	
Change in the technical production: reduction/increase of specialization					+				=	++			+	
Use of water increase		-			-					-			=	+
Use of fertilizers increase		-			-					-			+	+
Use of pesticides increase		-			-					-			+	+
Change in the by-products treatments								+					+	+
Changes in soil use (biodiversity)		-		-									=	
Changes in soil use (landscape)	+	=		-									=	
Changes in land use (marginal lands)	-			-										
Changes in land use (new plantations)		+							=	+				
Change of the type of land maintenance	=	+		-	=								=	
Total elimination of certain productions				-	-					+				
Change in the specific agricultural practices					+								=	=
Effects of culture substitution					-				=				+	
Trend to monoculture					-					-			+	
Competition, synergy or interference with AE measures of the RDR													+	=
Competition, synergy or interference with other RDR measures like investment and irrigation ones					+					+			+	
Influence on the first transformations at local level, little transformation units and transports					+			+		-			+	+

+: positive for the environment

-: negative for the environment

=: It does not affect

APPENDICES

Annex 1a: List of people met

Annex 1b: List of people contacted

Annex 2: Main bibliography identified in relation with the study

Annex 1a: List of people met

- **D. José Antonio Muñoz Valero.** Doctor Ingeniero Agrónomo. Departamento de tecnología de los Alimentos de la Escuela Técnica Superior de Ingenieros Agrónomos de la Universidad Politécnica de Madrid.
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- **D. Félix Cabello Sáenz de Santa María.** Doctor Ingeniero Agrónomo. Jefe del Departamento de Producción del Instituto Madrileño de Investigación y Desarrollo Rural Agrario (IMIDRA).
- **D. Carlos Hernández Díaz-Ambroa.** Doctor Ingeniero Agrónomo. Departamento de Producción Vegetal: Fitotecnia de la Escuela Técnica Superior de Ingenieros Agrónomos de la Universidad Politécnica de Madrid.
- **D. Francisco Montero.** Fondo Español de Garantía Agraria (FEGA).
- **D. Jacinto Ayuso González.** Subdirector General de Zonas Desfavorecidas. Ministerio de Agricultura Pesca y Alimentación.
- **D. Pedro Castaño.** Jefe de Servicio de Medidas Agroambientales. Consejería de Medio Ambiente y Ordenación del Territorio de la Comunidad de Madrid.
- **D. José Ramón Lissarrague García-Gutiérrez.** Doctor Ingeniero Agrónomo. Departamento de Producción Vegetal: Fitotecnia de la Escuela Técnica Superior de Ingenieros Agrónomos de la Universidad Politécnica de Madrid (Especialidad Viticultura).
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- **D. José Manuel Delgado Pérez.** Gabinete técnico de UPA (Unión de Pequeños Agricultores).
- **D. Javier Merino Sierra.** Secretaría técnica de COAG (Coordinadora de Organizaciones de Agricultores y Ganaderos).
- **D. José Carlos Caballero.** Director técnico de ASAJA (Asociación Agraria de Jóvenes Agricultores)
- **D. José María Gallego.** Jefe del área de vitivinicultura del Ministerio de Agricultura, Pesca y Alimentación (MAPA).

Annex 1b: List of people contacted

- **D. Angel Luis Álvarez Fernández.** Director General de Agricultura. Ministerio de Agricultura Pesca y Alimentación.
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