



Citation: Étienne Montaigne, Samson Zadmehran, Alfredo Coelho, Yacine Messaoudène (2023). Analysis of the 2007-2008 Hérault premiumized grubbing-up campaign: a tool to better understand Fischer-Boel's 2008-2011 grubbing-up campaigns and the desire in 2022 to reintroduce locally premiumized grub-ups. *Wine Economics and Policy* 12(1): 81-99. doi: 10.36253/wep-12781

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Data Availability Statement: All relevant data are within the paper and its Supporting Information files.

Competing Interests: The Author(s) declare(s) no conflict of interest.

Analysis of the 2007-2008 Hérault premiumized grubbing-up campaign: a tool to better understand Fischer-Boel's 2008-2011 grubbing-up campaigns and the desire in 2022 to reintroduce locally premiumized grub-ups

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Abstract. In 2022, in Bordeaux due to a structural oversupply, grape growers' syndicates have asked to reimplement premiumized grub-ups in order to bring the market back to equilibrium. However, in today's CMO no legal basis exists to conduct such a policy. In this article, we go over the policy of planting rights (transformed in 2016 into planting authorization) and of premiumized grub-ups. In undertaking this historical review of Europe's grubbing-up policy, we analyze in detail Pierre Bartoli's 1982 thesis and studies of the Observatoire de l'Hérault (Dyopta) that take into account experts' opinions and statistical viewpoints. This review enables us to present the main indicators in order to "objectively" analyze data that we received from a 2007/2008 grubbing-up campaign in Hérault. Our originality is the analysis of a subset consisting of 341 Viniflor applications for grubbing-up premiums, which represents 20% of all beneficiaries receiving premiums. The applications were later sent with the applicants' consent to a development agency that transmitted them to us. Within this subset, we selected 51 grape growers with whom we conducted a qualitative and quantitative survey. Our goal was to identify their real motivations for grubbing up their vines. We then put forward synthesized results explaining the qualitative interviews and run the data through an econometric model. The main results are that many grape growers grubbed up only a small fraction of their vineyards mainly to cash in on the premiums in times of dire wine crisis. Grubbing ups of young "improving varieties" reinforces this analysis. Furthermore, the 2007/2008 grubbing-up campaign comes a year just before the 2008/2011 Fischer-Boel grubbing-up campaigns that wanted to reduce Europe's vineyard of 175,000 ha of vines by eliminating the least efficient grape growers. We thought it would be interesting to shed light on this 2008 wine CMO policy by using the results of the 2007/2008 grubbing-up campaign.

Keywords: sustainability, wine sector, CAP Reform, FADN.

1. INTRODUCTION

Unlike the New World's viticulture, the potential of the European grape production is controlled through planting rights introduced by the 1976 wine CMO and planting authorizations since 2016 and the 2013 CMO¹. Planting rights gave the EU the possibility to control the area planted in vines and therefore participated to the long-term regulation of the wine market. Historically, the UE wine market was also controlled by other short-term methods such as distillation, but it is another method that has attracted our attention: grub-ups and specifically premiumized ones. Interestingly, it seems that one could imagine grub-ups as the flip side of planting rights: the EU commission enlarges the area planted in vines by issuing additional rights and diminishes it by introducing permanent grub-ups. Currently under the 2013 CMO, premiumized grub-ups are no longer available as a policy tool to control the production potential of European vineyards. However, today in 2022, Bordeaux's grape growers' syndicates are seeking to reintroduce a legal framework to be able to use them.

In this paper we had access to data from the 2007/2008 Hérault grubbing-up campaign that consists of 341 application files that the Hérault Chamber of Agriculture received and transmitted to us. The particularities and importance of our data are linked to its rarity (individual grubbing-up data is difficult to access) and to the fact that it sits at the end of the 1999 wine CMO and right before the beginning of the 2008 wine CMO. The 2007/2008 Hérault grubbing-up campaign is part of a set of campaigns that followed the 2004 worldwide overproduction crisis and its intent was clearly to regulate supply by diminishing it. Our 2007/2008 campaign immediately precedes the three 2008/2011 grubbing-up campaigns (2008 wine CMO) that were introduced by the European commission and Commissioner Mrs. Mariann Fischer-Boel in order to improve the competitiveness of European grape growers by grubbing-up 170,000 ha. This improvement was deemed necessary before the liberalization of the market through the disappearance of planting rights in 2016.

In our work, on a given population and in a limited area, we aim to do an in-depth analysis of the grubbing-up policy at the dawn of the new EU policy promoted by Mrs. Fischer Boel. Our article's first ambition is to analyze the 2007/2008 Hérault grubbing-up campaign by looking in detail at what was grubbed up. Our second ambition is to study the motivations that directed the

grape growers' decision. To do so we conducted 51 qualitative interviews with grape growers contained within our initial sample (341 application files). Furthermore, we use these analyses as an exploratory tool in the event of a future reflection on the evaluation of the 2008/2011 EU grubbing-up policy. By doing so, it appears that the reasons put forward in European texts' recitals were focused on eliminating "old and inefficient" small grape growers and did not take into account, at least in Hérault, all of the grape grower's microeconomic and technical motivations.

2. HISTORY OF EUROPEAN WINE CMOS FOR THE PRODUCTION POTENTIAL MANAGEMENT

It has now been more than eighty years since France and Spain implemented rules commonly known as planting rights to control the planting of vines [1,2]. Following King's Law's logic [3], their aim is to prevent anarchic plantings of vines that would come to weigh on the wine supply within the next three years² and perhaps cause the collapse of prices on the wine market. Starting on January 1, 2016, planting rights became planting authorization³ and still remain a pillar of the wine CMO as they manage the capacity of wine production [4]. However, this was not always the case in the European Union (UE): originally in 1970 the UE recuperated the French market organization except for planting rights meaning that from the 1970 to 1976 planting rights did not exist in the EU except in France. In 1976, the UE decided to activate planting rights in order to face a table wine overproduction crisis induced by "wine wars" between France and Italy that caused riots [5]. As winemakers rioted in 1976 in Montredon-Corbrières (Languedoc-Roussillon, France), they faced the CRS⁴: during the clashes both a CRS captain and a winemaker died [6]. Planting rights/authorizations have gone on to become the hallmark of the UE wine policy.

² In general, it takes three years for planted vines to mature and produce grapes that will come to the market.

³ With the 2013 CMO, planting rights have been transformed into planting authorizations but have retained the same impact on controlling production. Also, the new rules forbid to transfer the title to other producers. This constraint highly affects the evolution and the capacity to control the evolution of vineyards.

⁴ *Compagnies Républicaines de Sécurité*: an elite French police force specialized in facing riots.

¹ For a historic and long-term vision of French viticulture, interventions and regulations, see Chevet et al. (2018) [1] and Meloni and Swinnen (2013) [2].

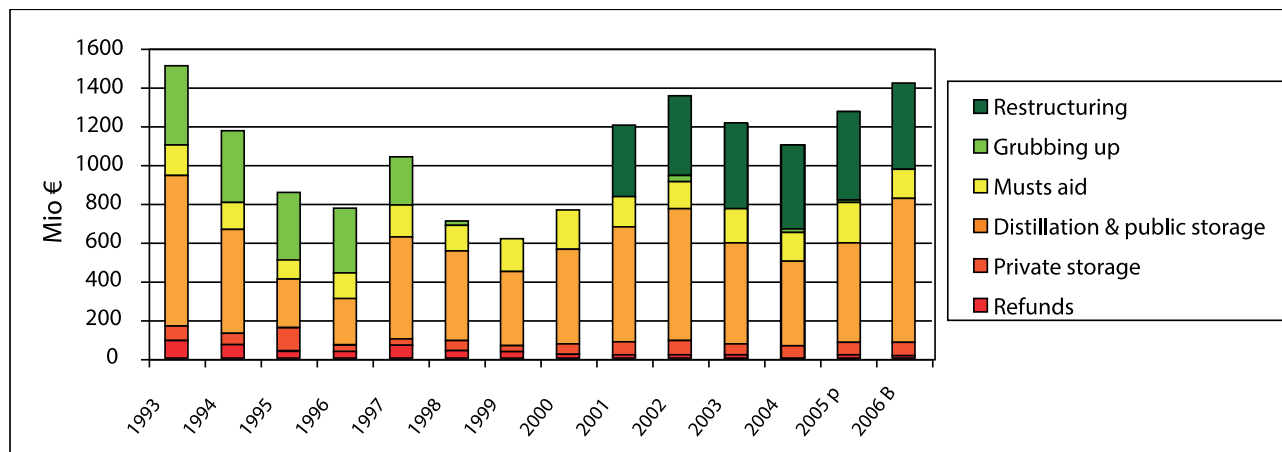


Figure 1. Evolution of the wine CMO's budget allocated to grubbing up. Source: Challenges and opportunities for European wines – 16.02.2006 – slide 42 [12].

2.1 1976 wine CMO: adoption of “(Re)planting⁵ rights and grubbing premiums

In 1976, facing social tension, the European Commission decided to manage the capacity of wine production by prohibiting the planting of any new vines and by doing so recreated de facto “(re)planting rights.” In other words, a grape grower could only plant an area of vines if he had previously grubbed up an equivalent area. Simultaneously, the European Commission created premiums for grape growers grubbing up their vines to compensate the suspension of their rights to plant for six years (Council Regulation (EEC) No. 1163/76) [7].

Later, premiums for permanent grub-ups, resulting in the permanent disappearance of planting rights, appeared and were maintained through the following wine CMOs [8]. Economically, this policy had an impact on the wine market: until the middle of the '90s grubbed-up areas brought the European wine market to a general quantitative equilibrium [9]. Other measures concerning restructuring, favoring the transition to PGI and PDO have participated in a better adaptation to the market. From the 1988/1989 campaign to the 2004/2005 one, premiumized grub-ups resulted in the permanent disappearance of roughly 500,000 ha of vines in all of the EU [10]. Figure 1 gives the share of the grubbing-up budget in the wine CMO budget from 1993 to 2005 (light green). In regard to the dimensions of the EU vineyards, on a period going from 1990 to 2007, the French ones grew on average from 4 ha to 9 ha,

the Spanish ones from 3.5 ha to 5.5 ha, the German ones from 2 to 3.5 ha and the Italian ones from 1 ha to 1.5 ha. However, there is still a large number of small vineyards left and some were even created during the 2007/2012 grubbing campaigns as a result of splitting the vineyards in order to be able to receive the premiums. From 2010 to 2020 changes appear as restructuring financed by the CAP becomes the principal policy tool affecting Languedoc vineyards instead of CMO ones such as planting rights and grubbing-up campaign [11].

2.2 1999 wine CMO: creation of the reserve for rights, reserve rights and “new” planting rights

The introduction of the 1999 wine CMO⁶ refined the management of planting vines in the EU⁷. This reform arrived in the midst of fears of an insufficient wine supply, at least in certain markets, due to: (1) the systematization of premiumized grub-ups from 1976 to 1997, (2) three consecutive small harvests (1995/1996; 1996/1997; 1997/1998) [13] and (3) flawed diagnostics made during the 1993/1994 amendment of the previous wine CMO [14,15]. In refining its management, the 1999 wine CMO created a reserve system to save forsaken or unused planting rights and clearly distinguished three categories of planting rights: (1) replanting rights (previous grub-

⁵ In 1999, this first category of planting rights will be renamed replanting right in order to differentiate it from the two newly created categories. Hence the parentheses.

⁶ Council Regulation (EC) No. 1493/1999 of May 17, 1999.

⁷ “This suppleness is comforted by the level of the community's production of wine. The 1996, 1997 and 1998 harvests were situated at levels clearly below the previous years. This was the background for the discussions that took place and that resulted in the new 1999 basic rules, which decided to create the new planting right quotas for the member States.” [13]

Table 1. Replanting rights held by the grape growers (ha, EU-15, 2000/2006).

In ha	2000/2001	2001/2002	2002/2003	2003/2004	2004/2005	2005/2006
Czech Republic	NR	NR	NR	0	154	192
Germany	3900	4235	4184	4366	4436	4285
Greece	2376	2376	560	1682	1206	987
Spain	74,189	83,315	80,949	82,814	88,475	88,412
France	45,094	47,611	51,942	44,823	43,749	43,702
Italy	42,056	44,448	41,103	47,748	46,502	52,465
Cyprus	NR	NR	NR	467	596	596
Luxembourg	0	0	0	12	0	0
Hungary	NR	NR	NR	12,509	13,525	14,266
Malta	NR	NR	NR	0	0	0
Austria	12,592	12,695	5313	5501	8897	9030
Portugal	12,809	10,737	12,045	13,541	17,124	17,124
Slovenia	NR	NR	NR	0	276	251
Slovakia	NR	NR	NR	0	500	500
Subtotal EU 15	193,016	205,417	196,097	200,488	210,390	216,004
Subtotal EU 10	NR	NR	NR	12,976	15,051	15,805
Total	193,016	205,417	196,097	213,463	225,441	231,809

Source: Communications of the Member States according to table 7.2 and, where applicable, table 7.1 of the Annex to Regulation (EC) n. 1227/2000, cited by Commission of the European Communities. Commission report to the European Parliament and the Council on management of planting rights pursuant to chapter I of Title II of Council Regulation (EC) n. 1493/1999. Brussels: Commission of the European Communities; 2007.

up required), (2) new planting rights (a new right created ex-nihilo) and (3) planting rights from the reserve.

As we've seen replanting rights already existed in the former wine CMOs: planting an area of vines was only possible if an equivalent area of vines was grubbed up elsewhere. In 2000/2001, replanting rights remaining in grape growers' portfolios represented an area of 193,016 ha. By 2005/2006 this area had increased to 216,004⁸ ha [16]. Table 1 illustrates the evolution of the area of replanting rights held by grape growers from 2000/2001 to 2005/2006 in major EU wine-producing countries.

The 1999 wine CMO created ex-nihilo an overall 51,000 ha quota (Art. 6(1) of R. 1493/1999)⁹ of new planting rights (Art. 3(2) of R. 1493/1999) which was distributed to 8 countries as

Table 2 indicates. This table also shows that only 68% of the quota equaling to 34,783 ha of rights to plant new vines were allocated and the rest were directed towards the newly created rights' reserve [16].

⁸ This number rises to 231,809 ha if we include the 10 wine producing Member States that joined the European Union on May 1st, 2004 after the Athens treaty: Cyprus, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Malta, Poland, Slovakia, Slovenia.

⁹ This handing out did not have major impact on determining the production capacity. The decrease in wine consumption has led to premiumless grub ups and reconversions in many wine-producing countries.

Table 2. Use of the newly created planting rights for planting vineyards to produce quality wines and table wines with geographical indication.

	Quota distributed (ha)	New planting rights used (ha)	Percentage of use (%)
Germany	1534	471	31
Greece	1098	1098	100
Spain	17,355	17,107	99
France	13,565	9377	69
Italy	12,933	3688	29
Luxembourg	18	0	0
Austria	737	0	0
Portugal	3760	3041	81
Total	51,000	34,783	68

Source: Communications of the Member States according to Table 2.2 of the Annex to the Regulation (EC) n. 1227/2000 and article 6 of Regulation (EC) n. 1493/1999.

The 1999 wine CMO created national and regional "reserves" to recuperate unused new planting rights and replanting rights that were set to expire. On three campaigns from 2000/2001 to 2003/2004, the reserves held 68,000 ha [16]. Members States or their regions could access these reserve rights if an inventory of their wine production showed that their wine supply was below

their demand. When applying, young and recently settled grape growers were given priority.

All in all, the three categories of planting rights represented 275,797 ha or 8.3% of the European vineyards consisting of 3,326,542 ha [16].

From the 2000/2001 campaign to the 2007/2008 one, grubbing-up was carried out with the help of limitless community (European) funding. Each Member State specified the regions where the intervention would be applied. In France, small regions and small surfaces were first concerned for the initial four campaigns and the average grubbing rate was 1,200 ha/year. Then, due to the 2004 global overproduction crisis, this measure became more widely solicited and over the next three campaigns, from 2005 to 2008, the average national grubbing rate rose to 14,000 ha/year. 70% of all grub-ups happened in Languedoc-Roussillon with 9,740 ha/year. These three grubbing-up campaigns were far superior to the following three from the 2008/2011 “Fischer Boel” Operation.

2.3 2008 wine CMO: a thirst for competitiveness

In 2006, a procedure that would profoundly modify the 1999 wine CMO appeared. It was initiated by discussions between the different European bodies—the European Commission, the COPA-COGECA and the European Parliament—and based on two documents provided by the European Commission [17,18] and three by the Commission of the European Communities [12,19,20] and completed by studies ordered by the European Commission and the European Parliament [14,21–23].

The European Commission’s proposal took into account the hardships of the European wine sector, which were linked to a never before witnessed worldwide overproduction of 50 to 60 million extra hectoliters¹⁰ [24,25]. This crisis impacted to a certain degree all wine actors, including Australia and other countries from the New World and the southern hemisphere. The economic situation worsened in the EU due to an internal decrease of wine consumption in the traditional wine producing countries and a significant increase in imports of New World wine entering northern European markets, especially the United Kingdom. The European Commission concluded that this situation existed due to a lack of competitiveness from the European producers because their farm sizes were too small [26].

In its communication “Towards a sustainable European wine sector,” the European Commission retained the scenario “Profound Reform of the CMO—Variant B—Two-step” and justified its choice by stating: “The first

phase is restoring market balance and the second phase is building improved competitiveness, including the abolition of planting rights. The principal feature of variant B would be a structural adjustment, i.e., temporarily reactivating the grubbing-up scheme. The system of restrictions on planting rights would be extended until 2013, when it would expire. The least competitive wine producers would have a strong incentive to sell their planting rights or to grub up with subsidies. Rapidly, competitive producers can be expected to focus more on the competitiveness of their enterprise, as the cost of planting rights will no longer hamper expansion. In the medium to long term this would represent a reduction in their fixed production costs” [19]. This scenario would span 5 years, aim to grub up 400,000 ha and allocate 2.4 billion euros towards premiums. Incentives were also given to grape growers to act quickly as the value of the premiums received would decrease in the second and third years of the policy. Promoting competitiveness and fighting over-supply were truly at the heart of this policy project.

However, this scenario was not validated and a second proposal was negotiated in 2007. After many debates and a parliamentary text putting forward more than 500 amendments [27], the Council of ministers approved the 2008 wine CMO¹¹ reform (Council Regulation (EC) No. 479/2008 of April 29, 2008), which included a new grubbing policy. In it, the original target of 400,000 ha was first reduced to 200,000 ha spanning 5 years and then, furthermore, to 175,000 ha on a 3-year period—2008/2009, 2009/2010 and 2010/2011—with premiums also decreasing in the second and third years.

This three-year grubbing policy is defined in the 2008 wine CMO under TITLE V, PRODUCTION POTENTIAL, CHAPTER III Grubbing-up scheme. Arguments for such a scheme are stated in recitals 3, 58 and 68: “Moreover, some of the existing regulatory measures¹² have unduly constrained the activities of competitive producers.”—recital 3; “While the transitional prohibition on new plantings has had some effect on the balance between supply and demand in the wine market, it has at the same time created an obstacle for competitive producers who wish to respond flexibly to increased demand.”—recital 58 and finally “Where producers consider that the conditions in certain areas are not conducive to viable production, they should be given the option of cutting their costs and permanently withdrawing these areas from wine production and should be enabled either to pursue alternative

¹⁰ Each year the OIV publishes data in regards to wine production.

¹¹ The new wine CMO dealt with the organization of the wine common market. It modified rules (EC) No. 1493/1999, (EC) No. 1782/2003, (EC) No. 1290/2005 and (EC) No. 3/2008, and repealed rules (CEE) No. 2392/86 and (EC) No. 1493/1999.

¹² Commonly understood as planting rights, as confirmed by recital 58.

Table 3. Level of the premium provided for in Article 98 of Regulation (EC) n. 479/2008 ANNEX XV.

Historical yield per hectare (hl)	Premium (EUR/ha)		
	requests approved in 2008/2009	requests approved in 2009/2010	requests approved in 2010/2011
(1)	(2)	(3)	(4)
≤20	1740	1595	1450
>20 and ≤30	4080	3740	3400
>30 and ≤40	5040	4620	4200
>40 and ≤50	5520	5060	4600
>50 and ≤90	7560	6930	6300
>90 and ≤130	10,320	9460	8600
>130 and 160	13,320	12,210	11,100
>160	14,760	13,530	12,300

Source: Commission Regulation (EC) n. 555/2008 of 27 June 2008.

activities on the relevant area or to retire from agricultural production altogether.”—recital 68.

Through these recitals the grubbing-up policy appears to intervene simultaneously on supply and efficiency with objectives to respectively eliminate planting rights¹³ and foster economies of scale in grape farms. It is also put forward as a way to eliminate the least productive producers, by enticing them with a premium. Article 102 “procedure and budget” defines how to target the least productive grape grower through a set of rules prioritizing the access to the premium. Priority is given to those (1) grubbing up the entirety of their vineyard or completely ceasing their wine-related activity and (2) to applicants aged 55 or higher. Furthermore, premiums increase with the yield and decrease in the second and third years as shown in Table 3. This gradualness is part of the European Commission’s tradition, as it believes that it should compensate the loss in revenue in proportion to the yield¹⁴.

This grubbing-up policy was successful as EU countries used a 100% of the available budget and seamlessly reached the 175,000 ha target and 160,550 once the application files were treated¹⁵.

¹³ Planned next was the liberalization of vine planting by making disappear all planting bans (i.e. planting rights). The start of this plan ranged from 2015 to 2018 and many reasons in the text supported and motivated their definitive disappearance. But as the deadline approached, many European professionals and many locally elected representatives questioned the soundness of this deregulation as they feared disastrous consequences.

¹⁴ Delord and al. (2016) have questioned the relationship between yield, size and profitability in viticulture [18].

¹⁵ Upon further notice FranceAgriMer determined that 160,550 ha resulted in premiumized grub-ups [28]. Dacian Ciolos confirmed the 160,000 ha of grubbed up vines in the April 19, 2012 speech [29].

Simultaneously to the implementation of three grubbing-up campaigns, the 2008 wine OCM (CE n° 479-2008) reorganized the management of viticulture by means of the NSPs, “the national support programs”. These programs provided a fixed budget for each country and gave each Member State (MS) the possibility to choose its objectives “à la carte within a menu”, and with the possibility of doing so at the regional level. By doing so, Europe was thus giving itself other means of continuing to improve its viticultural performance, in particular by three preferred means in France: restructuring and reconversion (37.8%), investment (32.3%) and promotion (14.3%) ((CE) n° 479-2008, art. 10-11-15 confirmed by (CE) n° 32013R1308 art 43-52) [30].

2.4 2013 CMO: abolition of planting rights and the end of premiumized of grubbing-up campaigns

The 2008 wine CMO introduced the abolition of planting rights by 2015, a decision that led to debates and controversies within the wine industry. Responding to the uproar, the 2013 CMO transformed planting rights into planting authorizations and introduced a yearly growth limitation corresponding to 1% of the area planted in vines. Authorizations are free, they cannot be sold on a market like planting rights could. Economically argued limits were also introduced at the PGI and PDO level. Grape growers can plant as many vines as they want as long as national and local limits are not attained. In the south of France [11], with the exception of Charentes exposed to strong growth in demand for cognac, local limits have not been very much used. Hérault area planted in vines has stabilized around 80,500 ha since 2011, after having lost 40,931 ha from 1988 to 2010 with the permanent abandonment premium [31].

Grape growers use today CAP tools, such as restructuring instruments, that let them get financial help in order to plant improving varieties, change the distance between rows, changing the canopy management, introduce irrigation, improve environmental aspect such as planting hedges. But it appears that the CAP’s tools are not sufficient to replace the effects of a grubbing-up campaign in regard to bringing the market back to equilibrium, particularly in on a regional market. Recently, in 2022, Bordeaux has been pleading for a grubbing-up campaign, but under the 2013 CMO there is no legal basis to fund it [32,33].

3. HÉRAULT 2007/2008 CAMPAIGN: A CASE STUDY TO SHED LIGHT ON THE 2008/2011 EU GRUBBING POLICY AND THE QUESTION OF THE REINTRODUCTION OF LOCALIZED PREMIUMIZED GRUB-UPS IN 2022

3.1 *The importance of Hérault and past studies in Languedoc-Roussillon*

Historically¹⁶ the Languedoc-Roussillon region, where Hérault is situated, has been very prone to grubbing up: from 1977 to 2010, this policy resulted in the disappearance of 40% of the vineyard (166,000 ha) [35]. According to the *Cour des comptes*, the grub-up of high-yield vines and vineyards being qualitatively restructured led Languedoc-Roussillon's mean yield to drop from 80 hl/ha in 1980 to a bit more than 50 hl/ha in 2009 [35]. This court adds: "The focus of the grubbing-up subsidy policy on a region traditionally prone to overproduction, added to the restructuration policy has profoundly modified this region's landscape and the wine supply. It has favored the going out of business of many small polyvalent producers and has led to an upgrade of the product range" [35, p. 24–25]. In France, the 2008 wine CMO grubbing campaign resulted in more than 58,000 ha of vines removed and not surprisingly most came from Languedoc-Roussillon and Hérault [35]. From 2005 to 2010, 69% of all grubbed-up areas in France and receiving premiums happened in Languedoc-Roussillon [35].

Past research has already been conducted in Hérault on grub-up motivation, particularly the study done by Pierre Bartoli and Marc Meunier in 1982 [36]. In "*La politique de reconversion viticole : résultats de la prime d'arrachage en Languedoc-Roussillon 1976-79*"¹⁷ [37] the goal was to examine the consequences of the *distribution of sizes* on production systems. They wanted to understand the farmers' governing motivations, their adequacy with the wine policy and analyze the socio-economic situation. This study showed the importance of the gap between the objectives set forth for reconversion premiums and the actual results. This gap appeared not only at the level of zones and farm structures, but also at the one dealing with the types of grubbing-up implemented and their reasons.

The Observatoire viticole de l'Hérault's (2005) [38] study "*Étude d'impact des arrachages définitifs dans*

l'Hérault"¹⁸ updated the 1997 works of Aigrain et al. [39] by undertaking a very precise statistical analysis, taking into account quantities and geographical areas, on a period ranging from 1988 to 2003. It showed that grub-ups were mostly located in the coastal plain, in urban and peri-urban areas. It also took note of the regression of the number of small size farms, the grub-ups within areas of appellation, the acceleration in the loss of the traditional varieties and the grub-ups of improving varieties. The study also showed "that from 1988 to 1991, the reasons for grubbing up gathered from the analysis are diffuse. Their results show that premium value arrived in first place (83% of grub-ups received a premium). A need for diversification is also very present (80%) and it is hard to dissociate decision-making elements, such as retirement (30%), family reasons (24%) from a need for cash (10%)" [38]. However, they did not precisely state their survey's sources and methodology.

Nevertheless, this study cites through "experts' statements" the possible motivations for primed grub-ups: "(1) some grape growers that are dealing with hardships, take advantage of this chance to improve finances (grubbing up small surfaces), (2) small farms (<5 ha), farmers that will retire soon and have nobody to take over, will be the first concerned, (3) for certain farms the whole area may be grubbed up" [38, p. 16]. We find the same reasoning that had been expressed by the European Commission as the study cites their arguments and explicitly leans on them.

Our analysis also aims to complete and further advance these previous works by pinpointing the real motivations (economic and social) that push grape growers to permanently grub up, partially or totally, their vines. This leads to a finer analysis of the adequacy between the actual grub-ups and the future objectives set forth by the policy within the 2008 wine CMO.

3.2 *Our analysis of the 2007/2008 grubbing-up campaign*

Any economic policy decision taken at a level as aggregated as viticulture in Europe cannot take into account all the situations of grape growers and all their motivations for grubbing up their vines. Few data have been published on either the age of grape growers or on their economic performance to justify the a priori choices made. Being considered as common knowledge was enough to make these facts relevant. Furthermore, the success of this policy according to selected criteria has substantiated the merits of the common knowledge. To us, it seemed interesting to deepen the thought process

¹⁶ For a general view of French viticulture see Alonso et al. (2019) in The Palgrave Handbook of Wine Industry Economics [34].

¹⁷ The wine conversion policy: results of the grubbing-up premium in Languedoc-Roussillon 1976-79.

¹⁸ Impact study of final grubbing up in the Hérault.

on the EU 2008/2011 grubbing-up policy by analyzing the technical and microeconomic data originating from a genuine database capturing the grape growers' motivations and behaviors adopted during the last subsidized grubbing-up campaign (2007/2008) using the previous 1999 wine CMO rules.

It should be noted that this is France's second largest grubbing-up campaign during the entire 1999/2011 period with 6,278 ha grubbed up and of which 4,040 ha happened in Languedoc-Roussillon. Also, the 2007/2008 campaign gave the possibility to introduce specific rules locally. This was authorized by the 1999 wine CMO, adopted at the French national level and defined regionally by the "interprofessions" (inter-professional organisations) as they had the possibility to exclude any appellation or any varieties within an appellation from being grubbed up¹⁹.

There are several reasons for doing so (1) because precise data on the 2008 wine CMO grubbing-up scheme is extremely hard to encounter due to privacy rules and (2) according to experts (INAO and FranceAgriMer) this data may not be representative as rumor is that some grape growers split-up their grape farms and made their elderly grandparents owners of the areas to be grubbed up in order to maximize their chances of receiving their premium. Therefore, the 2008/2009 data may be skewed and therefore the previous 2007/2008 campaign may be more representative of grape growers' natural motivation as it does not incite them to change their behavior.

Our analysis acknowledges the 2004 world oversupply crisis that impacted all wine-producing countries in the world. Falling prices created financial hardships for farms and cooperative cellars [41, 42²⁰, 43²¹, 44²²]. Our

¹⁹ "Geographical areas that can benefit from the premium for definitive abandonment of area of vineyard under the 2007/2008 campaign for the Languedoc-Roussillon region: [...] for the department of Hérault, all areas under vines, excluding areas planted with Clairette (white) grape variety in the PDO 'Clairette du Languedoc' and areas planted with Cinsault grape variety (red) in Vin de Pays des 'Côtes de Thongue'" [40].

²⁰ "The study clearly illustrates the crisis. The majority of winemaking farms from Languedoc Roussillon cannot survive with the actual wine prices. We add to this the deficiency of the yields. Sacrifices have been made to 'hold on' (few private withdrawals) but we note strong restrictions on investments (on average €10,000 per farm in 2007, €6,000 in 2008)" [42].

²¹ "The Languedoc-Roussillon economy: 90% of the grape-growing farms appears to be in financial hardship. The CER (Center of rural economy) of Languedoc-Roussillon presented this week an alarming report on the financial situation of the region's grape growing farms. According to this study conducted within the scope of the regional wine production observatory, the financial situation of the wine-growing farms has strongly deteriorated within the last three years" [43].

²² "In reality it's mostly Languedoc-Roussillon that is going to grub up its vineyards. The crisis is here, worst and more profound than anywhere else and the winemakers' cash reserves are totally depleted" [44].

complementary hypothesis is that numerous grub-ups were motivated by the consequences of the economic crisis due to falling prices and that grubbing-up premiums were also a means of survival for many grape growers, as they could use these premiums to reimburse bank loans contracted to purchase land or to plant vines in order to meet the '90s new qualitative orientation. The 2004 supply crisis was followed by a strong demand crisis in 2008 due to the subprime mortgage crisis, which extended hardships for grape growers and increased their resort to grubbing up.

3.3 Hypotheses

Using a typology of grape growers, we state the following hypotheses on their use of premiums resulting from permanently grubbing up their vines:

- Freshly installed young grape growers facing a budget and indebtedness crisis: for them, premiums will be of great help in facing current farm expenses and to pay back loans and debt.
- Grape growers near retirement: grub-up premiums guarantee them a decent retirement.
- Grape growers that can no longer face the crisis: their belief is that grape-growing has no future in the region and has become a rewardless enterprise. Therefore, they decide to grub up their vines and with the help of the premiums, they invest in other crops (wheat, fruits, vegetables, etc.). They may reorient themselves towards other sectors they deem more rewarding.
- Grape growers owning land near urban centers: their vineyards are grubbed to transform their land lots into building plots.

4. MATERIALS AND METHOD

4.1 The sources of information: 341 Viniflor application files

Viniflor²³ manages premiumized grub-ups in France and grape-growers must submit to them an application file. In addition to its administrative task, Viniflor analyzes the information in the files to compile grubbing-up statistics at the levels of the city, the department, the region and the country that are published on the site of the *Observatoire viticole (Dyopta)*²⁴. Spatialized data is highly interesting especially at a

²³ Now FranceAgriMer.

²⁴ Today this privately owned company is defunct.

fine scale, but it only allows us to randomly approach and survey grape growers that have decided to grub as Viniflor's management of grubbing-up premiums anonymizes all application files to ensure confidentiality meaning that individual grape growers are theoretically inaccessible.

An exception was made for the 2007/2008 grubbing-up campaign as professional wine organizations demanded Viniflor to insert in the application files an optional consent form for grape growers allowing their application files to be forwarded to a development agency. France directly funded 2007/2008 campaign and it was the last one before the implementation of the new EU grubbing-up policy (2008/2011). The idea was to allow an ongoing thought process to improve future targeted interventions in order to better follow up on grape growers and their grubbed-up lots. The main points were economic monitoring and managing landscapes. In the case of our study, consenting grape growers accepted that their contact information and the content of their accomplished grub-ups be transmitted to the Hérault Chamber of Agriculture (local extension service). 341 files representing about 20% of all Hérault applications for the 2007/2008 premiums were transmitted. However, on certain files, certain information was missing as some questions remained unanswered.

As the application files were handed over to us by the Hérault Chamber of Agriculture, we did not construct the survey sample. Furthermore, in regard to the French laws concerning privacy (CNIL), we do not have any information on the entirety of the population that grubbed up their vines. Therefore, we are unable to see if our 20% sample represents or not and if it is biased or not in regard to the Hérault population grubbing up their vines during the 2007/2008 campaign. It could

therefore appear, a priori, as a sample created by convenience since it is true that, within the grubbing-up application files, the choice "is favorable to the transmission of the file to a development organization" is not subject to any known statistical references.

However, a posteriori, once we look closer, this is not the case of our survey sample. In fact, we can do the hypothesis that the population grubbing up their vines is representative of the total population of grape growers in Hérault. To do so, we use the criterion "size of the vineyard". When characterized by this criterion, our sample survey comes very close to one created by quota sampling using data contained in a survey conducted in 2007 by the Hérault Department on the size of grape farms in Hérault. [45]. Our sample's variable concerning the size of grape farms when regressed against the one contained in the 2007 Hérault survey results in a coefficient of determination equal to 0.78 (R^2 using Pearson's method).

The transmitted information was limited and contained: identification of the farmer and his farm, direct or indirect farming, owner-farmer or tenant-farmer leasing land, farm's total area in vines and grubbed-up areas, winemaking location, list of lots being grubbed up including age of vines, their classification and if appellation wine was being produced, and the area grubbed up. Quite surprisingly, the farmer's age and yield were missing. These elements are essential in calculating the premium amount and should have normally been included. We assume their absence was due to the fact that Viniflor directly gathered this data on site during the field evaluation prior to the grub-ups and immediately evaluated premiums, according to Table 4, as it completed the processing of the files.

Table 4. Premium for the permanent abandonment (2007/2008 grb-up campaign, amount in euros by yield and by hectares.

Total area to be grubbed up	Vineyard area within the farm	Yield (hl/ha)	Premium amount (€/ha)
Less than 10 ares	Any area	Any value of yield	0
From 10 ares to 25 ares	Lower or equal to 25 ares	Any value of yield	4,300
	Higher than 25 ares		
More than 25 ares	Higher than 25 ares	Yield lower or equal to 20	1,450
		Yield higher from 20 to 30	3,400
		Yield higher from 30 to 40	4,200
		Yield higher from 40 to 50	4,600
		Yield higher from 50 to 90	6,300
		Yield higher from 90 to 130	8,600
		Yield higher from 130 to 160	11,100
	Yield higher than 160	12,300	

Source: Viniflor [40]

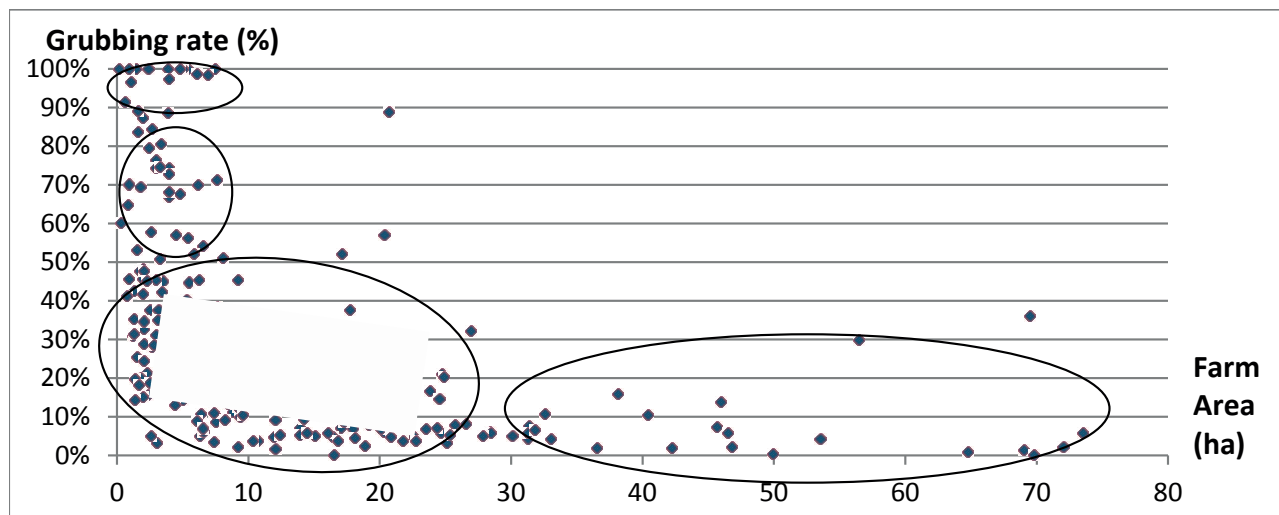


Figure 2. Grubbing-up rates according to total areas of vines (341 farms) 2007/2008 Hérault. Source: 341 Viniflor application files submitted with authorization to development agencies [4].

4.2 Sources of information: a survey of 51 grape growers

After waiting 9 months, from September 2009 to March 2010, we completed our study by individually surveying 51 grape growers. Indeed, as the 341 files were not anonymized we constituted a sub-sample containing 51 grape growers selected by size strata [46] and using telephone interviews, we were able to complete the information contained in the application files. Our survey included detailed questions on farm structure and grub-up motivations. Questions included the sex and age of the grape growers, the legal entity of their farm, how they acquired it, the size of their farm, the planted area of each varietal, the area of the varieties being grubbed up, the motivations for grubbing up, questions on the financial situation of the grape grower, questions of past grub ups, the presence of other crops on the farm, questions on grants received, questions on the possibility of an heir taking over. Included was also a non-directive qualitative commentary from grape growers on their economic situation.

The goal was to have access to a sample that best represented the concerned population. Many questions were not fully answered, but a certain number of them enabled us to confirm certain qualitative results.

5. RESULTS

5.1 The grubbing-up rates

The grubbing-up rate is an excellent indicator to measure the application of the grubbing-up policy. As shown in Figure 2, we can define four groups of applica-

tion files. The first group includes the smaller sized grape growers that grubbed up all or almost all their vines. The total area of their vineyard is 10 ha or less. The second group is similar to the first in vineyard size. Its specificity is that the grubbing-up rate is lower, between 50 and 80%. They often conserve a small land lot to grow vines to keep a link with the cooperative cellar. This guarantees grapes for family consumption and a family revenue. They are trimming down on their size. The European Commission specifically targeted these models. The third model englobes small and medium-sized farms that only grubbed up a smaller part of their vineyard: 1 to 30%. These grub-ups are limited. Many farmers justify their decision of “selling a lot with vines” because of the opportunity to sell in a land market depressed by the crisis [47] and to find cash to reimburse loans. The fourth group gathers all the large farms. The areas grubbed up are high in absolute values, but much lower in relative values. Grubbing-ups represent a sort of “option value” on the future, as it enables to balance the accounting books while they await the market’s evolution and the impact of the European grubbing-up campaign on the prices. The decision to quit, maintain oneself or again, increase in size will depend on the future sectorial situation. Figure 3 gives another illustration of this data.

5.2 The varieties

We analyzed the grub-ups of 273²⁵ grape growing farms based in Hérault and their corresponding

²⁵ Varietal data was missing from 68 wine estates.

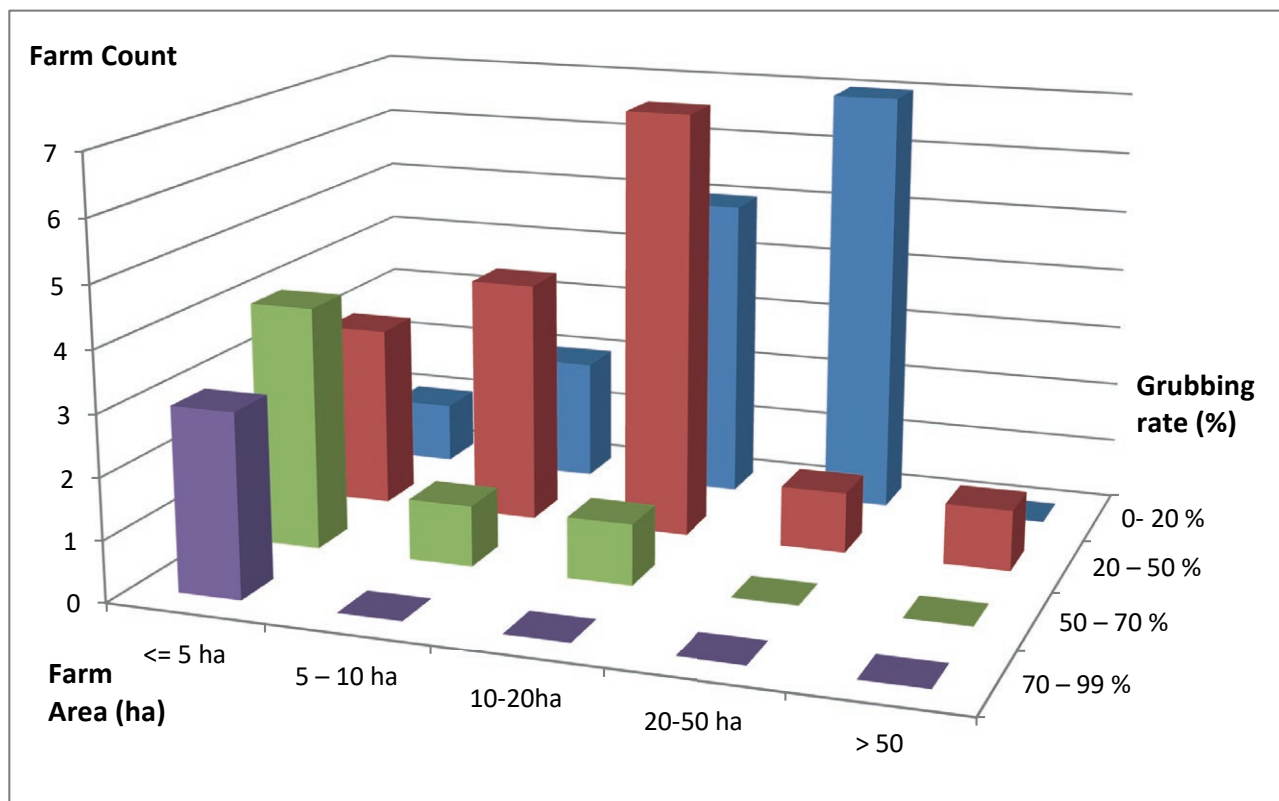


Figure 3. Headcount of surveyed farms according to their area and grubbing-up rate (341 farms) 2007/2008 Hérault. Source: 341 Viniflor application files submitted with authorization to development agencies [4].

1,029 land lots, for the year 2007 – representing 484 ha of grubbed-up vines. The grubbed-up varieties can be categorized into two principal categories: traditional varieties and improving varieties as shown in Figure 4. Among the latter, some are considered as southern qualitative varieties such as Syrah or Grenache, and are found in the PDO specifications (cahier des charges). Others, such as Cabernet Sauvignon and Merlot, are excluded from the Languedoc PDO specifications. These were principally developed for the Pays d’Oc wine category [48,49]. The traditional varieties (Carignan, Aramon, Alicante, Cinsault, Terret-Bouret, white Ugni) are considered as either too abundant or too productive when planted in the plain. The Ministry of Agriculture’s policy and subsidies for restructuring have favored the reduction in share of these varieties in the Hérault vineyards. The eight most grubbed-up varieties represent three quarters of all the grub-ups (361 ha/484 ha). Among those 83% are traditional varieties and 17% improving varieties.

More than a third of grubbed-up vines are Carignan: 184 ha (38%). Other major traditional varieties from the Languedoc vineyard are Cinsault (53.3 ha or

11%), Grenache (47.6 ha or 10%), Aramon (21.6 ha or 4%) and Alicante (46.6 ha or 10%). Added to these traditional varieties are improving varieties such as Syrah (38 ha or 8%), Cabernet Sauvignon (25 ha or 5%) or Merlot (19 ha or 4%). The remaining grubbed-up hectares are either made up of traditional varieties from Languedoc (Mourvèdre) or other improving varieties (Viognier). We even found some table grapes (Danlas or Dabovki), but their proportions remain minimal and stay below the 1% mark.

To refine our analysis, we looked at the age of the grubbed-up vines (Figure 5) and in doing so we retained 4 age categories with a 25-year interval (0 to 24 years, 25 to 49 years, 50 to 74 years and 75 to 100 years). The major fact observed is that most of the improving varieties are grubbed up before they reach 25 years. 92% of grubbed-up Cabernet Sauvignon (22.9 ha/24.9 ha) and Merlot (12.4 ha/13.5 ha) were less than 25 years old. In regard to Syrah, 85% of grubbed-up vines were under the age of 25. Oppositely, the age at which traditional varieties are grubbed up was much older: almost 2/3 of Carignan vines (108.5 ha/165.9 ha) were grubbed up between ages 25 and 49. About a 1/4 of grubbed-up

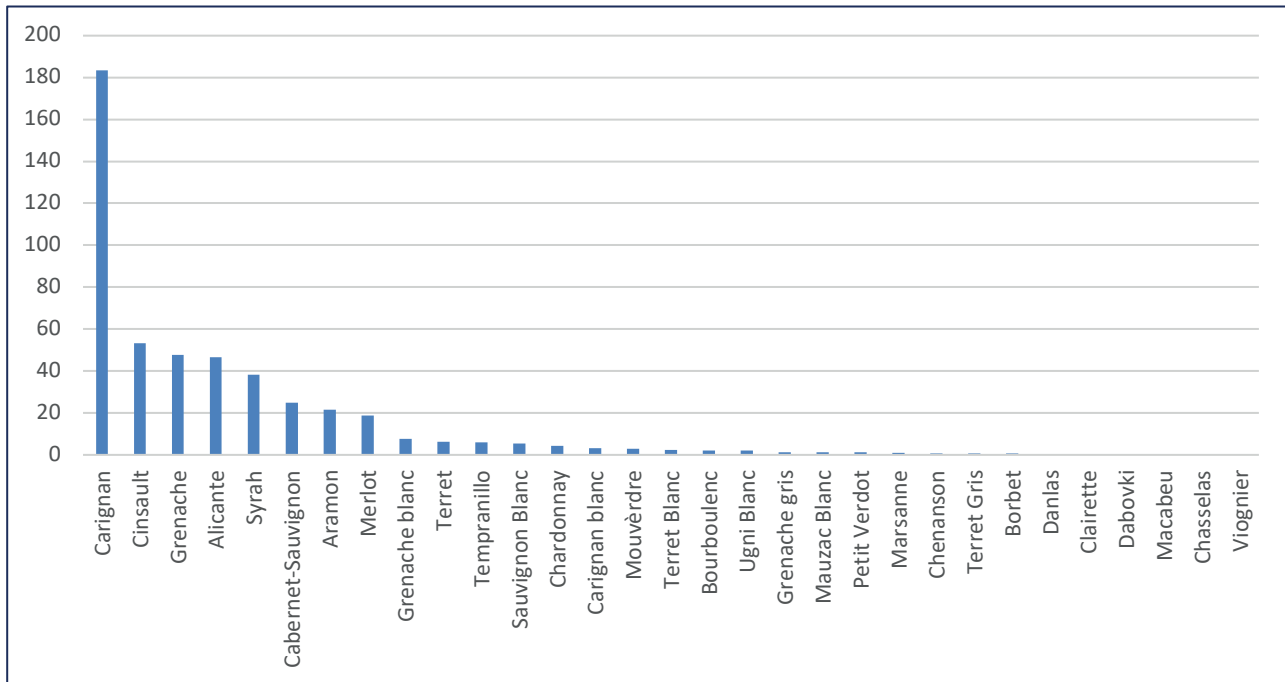


Figure 4. Grubbed-up areas (ha) according to varieties (2007/2008 Hérault). Source: Viniflor application files submitted with authorization to development agencies (273 estates as some data was missing in the files) [4].

Carignan vines were between ages 50 and 100 (46.7 ha). We find similar age ranges for other traditional varieties as the age of 93% of grubbed-up Alicante is between 25 and 49 years. 42.5% of grubbed-up Aramon is located within the same range and 53% within the range of 50 to 100 years. Only in the varieties Grenache and Syrah did we see vines under the age of 25 having been grubbed up: 46% and 28% respectively. However, when we look at the varieties between the ages 25 and 49, the grub-ups represent respectively 46.5% and 64%.

When looking at the grubbed-up varieties and their ages as illustrated in Figure 5, we can state that the main goal of eliminating the oldest vines and the least adapted to the market demand constituted the main part of the intervention. However, an important part of “improving varieties,” about a sixth were removed. This sends us to other explanations that are of a microeconomic nature that we will now study.

5.3 The motivations

The reasons why each grape grower grubs up his vines are unique, that is, if we take into account the history of his farm, the specificities of his vineyard, his outlook on the future, his financial situation, if his farming business is full time or part-time, the existence of side

revenues, etc. We conducted a survey in order to pursue our idea of testing the relevance of the “reaction” induced by the European Commission’s economic policy.

Our goal is (1) to shed light on the impact of the premiums on the behavior of grape growers during the 2007/2008 campaign (the grubbing-up policy preceding the three-year campaign of the 2008 CMO), (2) but also use these findings to reflect on the new grubbing policy born from 2008 CMO and see which of our findings appear, or not, in Fischer Boel’s decision to grub-up 175,000 ha.

We surveyed grape growers that grubbed up their vines. We recorded word for word their reasons, expressed directly from the grape growers, for their grub-ups. Twenty reasons were noted (Table 5). We have been very thorough in recording these motivations. Oftentimes we recorded two or three, near or complementary reasons coming from the same grape grower (on average two and a half).

These motivations can be placed in five large categories:

- Economic reasons are dominant: a lack of profitability and a need for cash. Almost half of the answers dealt with economic reasons. Our hypothesis of the impact of the economic crisis on the situation of farms has been confirmed. The goal can be to leave the business or simply to have access to more dis-

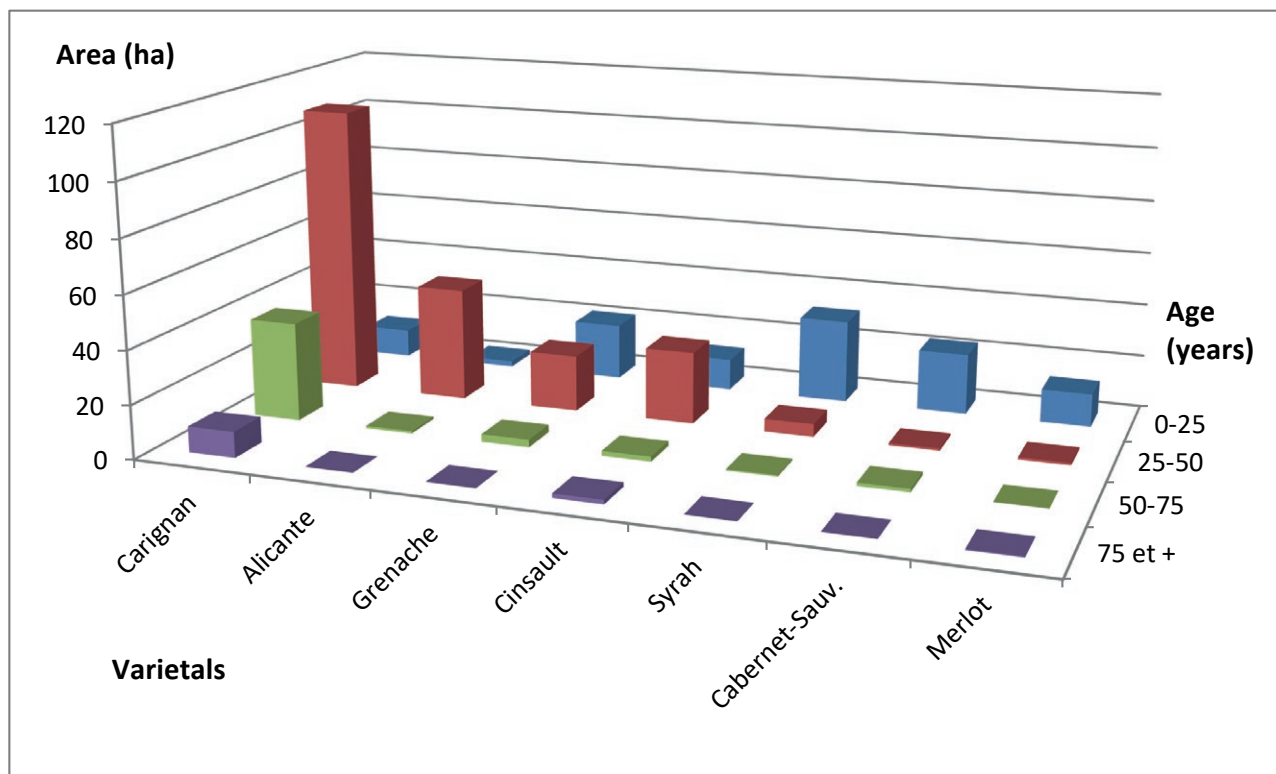


Figure 5. Grubbed-up areas according to varieties and age of the lots (2007/2008 Hérault). Source: Viniflor application files submitted with authorization to development agencies (273 estates as some data was missing in the files) [4]

possible cash. The additional cash may be used to change businesses—linked to farming or not—or reduce debt. The premium enables to transform land capital into financial capital in a period when the market for vineyard land is limited [47]. The land prices adjust themselves to the value of the premium added to the value of bare land.

- Then come the reasons associated to the farmer’s “life cycle.” These reasons are almost cited as much as the economic reasons. They are similar to the wine CMO whereas: The premiums allow grape growers to retire with additional capital. It is a type of retirement annuity²⁶. Old age often goes hand in hand with retirement and the absence of a buyer or a successor. This happens with the departure of land leasing farmers and sharecroppers. The owner due to his old age cannot himself take over the work needed for the vines. Lack of time and a second activity are motivations that are slightly different. Low profitability is the reason that leads to reevaluate the opportunity cost linked to the time committed to grape growing. Death and health problems speak for themselves.

- Farm reorganization is less frequently cited. Reducing the size can be linked to a reduction of payroll taxes, particularly by laying off a farm worker. It can free up additional time for a family member that can then take on another business. Grubbing up vines from land lot situated far away from the farm’s center will reduce the distances within the farm. This can be analyzed as a cost reduction (distance) or as a waiting strategy to purchase, at a later date, better situated land or vines. The goal is to increase the rationality of farming. Here, we are also looking at a deal that in a time of crisis is impossible to go forward with because of a lack of buyers. The nature of the investment made with the premiums is not clearly stated. But it is also linked to a strategy of future farm enlargement or reorientation of the estate. The possibility of transforming a freed-up land lot into a building lot is only cited once. The intent here to perform a double dividend: turn the estate into cash and cash in on the real estate profits. Bartoli and Meunier’s [36] study had shown that this double dividend was meaningful in the suburbs of the Languedoc plains and in many villages. For our survey, this dimension seems statistically too limited.

²⁶ In French this is called: “indemnité viagère de départ”.

Table 5. Reasons for grub-ups.

Economic	57	45%
Absence of profitability	38	30%
Need for cash	19	15%
Life cycle	44	35%
Retirement	4	3%
Old age	3	2%
Lack of workforce to hire	4	3%
Lack of time due to second activity	11	9%
Death	1	1%
Departure or absence of the land leasing farmer or sharecropper	7	6%
No buyer/successor to take over business	7	6%
Health problems	7	6%
Farm Reorganization	7	6%
Size reduction	1	1%
Recentering the farm	3	2%
Investment	1	1%
Land purchase	1	1%
Building plots	1	1%
Technical	10	8%
Old vines or in bad state	10	8%
Activity reorientation	9	7%
Direct sales	1	1%
Oenotourism	2	2%
Development of another crop	5	4%
Change of business	1	1%
Total	127	100%

Source: Data from the 51 grape growers surveyed [4].

- The age of the vines or their poor state is a technical reason that is very rational. The remaining question would be to know if it was appropriate to subsidize these grub-ups. Sooner or later these lots would have been eliminated and their contribution to the excessive supply was low. The premiums, however, were the right answer to Brussels targets. Lots that are in bad state have a low profitability and therefore coincide with the elimination of the least productive grape growers. However, we must state that this motivation is rather rare in our sample.
- A new orientation for farm activities also constitutes an answer to the objectives of the commission, but in a more indirect way. Developing a more profitable business, changing business models, developing another crop, selling directly to customers, and organizing oenotourism, all these goals meet the target of improving competitiveness and support the need for extra cash.

5.4 Econometric model: ordinary least square regression

In order to further explain the reasons for grubbing up within the data gathered from our 51 grape growers, we have used an ordinary least square (OLS) regression where X_i are the k explanatory variables and Y is the dependent variable. The model is linear and for each sample n the value y_n is:

$$y_n = \sum_{i=0}^k \beta_i x_{ni} + \epsilon_n$$

The coefficient β are found by minimizing the error of prediction.

In our model Y is the grubbing rate and the k X_i explanatory variables are: grape grower's sex and age, his need for cash and profitability, his agricultural activity, belonging to a cave coop, having an heir to take over the vineyard, if the grape grower had already previously been in a grubbing-up campaign. Other variables included are the age of the vines being grubbed up and several important varieties: Carignan, Syrah, Aramon, Grenache, Merlot, Cinsault and Sauvignon.

Our OLS model has led to interesting results that are shown in Table 6. It seems that there is an average correlation between having a tendency to grub up less and the fact of being a man (-0.172*) or of planning an agricultural activity after the grub-ups (-0.199*). This tendency to grub up less seems to be strongly correlated to being optimistic (-0.291**) and having an heir wishing to take over the family vineyard (-0.374**). These correlations are rational. The fact that a correlation exists between grubbing up and being a man is linked to the fact the low number of women (12 women, 23.5%).

The other strong correlations in our OLS regression are linked to varieties. It appears to that a strong correlation exists between a high percentage of grubbed-up vines and the grubbing-up of varieties Aramon (0.316**) and Merlot (0.369**). Conversely, it seems that the more grape growers own Cinsault (-0.259**), the less they tend to grub it up. This data on varieties should be put into perspective with the historical evolution of Languedoc grape varieties.

The grubbing-up of Aramon is logical as it is one of the old Languedoc varieties planted in the plains and linked to mass production of table wine. Today the area planted in Aramon is still deemed excessive meaning that more should be grubbed up. The explanation of grubbing up Merlot is more counterintuitive as Merlot is one of the first improving grape varieties introduced into the Languedoc vineyards. Several interpretations

Table 6. Econometric analysis using the OLS.

	(1)	(2)	(3)
male	-0.187*	-0.158	-0.172*
	[-1.95]	[-1.62]	[-1.81]
grape_grower_age	0.00803**	0.00891*	0.00621
	[2.08]	[1.93]	[1.31]
need_for_finance		0.0230	0.130
		[0.22]	[1.25]
other_agri_activity		-0.105	-0.199*
		[-0.92]	[-1.89]
coop		-0.0678	-0.118
		[-0.53]	[-0.87]
heir		-0.400**	-0.374**
		[-2.62]	[-2.49]
optimistic		-0.264**	-0.291**
		[-2.06]	[-2.31]
previous_grub_up		-0.0891	-0.128
		[-0.71]	[-1.07]
age_of_vines		-0.00322	-0.00298
		[-1.12]	[-1.09]
carignan			0.103
			[1.00]
syrah			0.0858
			[0.68]
aramon			0.316**
			[2,39]
grenache			0.0349
			[0,33]
merlot			0.369**
			[2,73]
cinsault			-0.259**
			[-2,07]
sauvignon			-0.198
			[-1,23]
_cons	0.0835	0.330	0.391
	[0,37]	[0,88]	[0,94]
N	49	49	49
R2	0.152	0.348	0.573

Source: Zadmehrán (2016) [50].

may be put forward explaining why they have a higher tendency to be grubbed up. Firstly, these may be the first generation of Languedoc Merlots introduced in the 80's probably planted in poor ecological condition (soil, microclimate, canopy management). In such a case, their grubbing-up and potential replacement are justified. Another interpretation is that the grape growers' situation is too dire to take into account the quality of this varietal. Yet another possibility is that the grubbing-up is linked to the impossibility of selling the plot planted

in Merlot. Finally, it must be noted that all three interpretations may be combined.

Cinsault is a dual-purpose varietal (it is also used to produce table grapes) traditionally found in Languedoc. Recently it has been revisited by many Languedoc PDOs, particularly in Corbières, Pic Saint-Loup and Saint-Chinian and currently benefits by the high demand for rosé wines. Furthermore, special rules in Hérault banned its grubbing-up in certain appellations [40].

It is interesting to note that our model does not show any strong correlation between the grubbing-up rate and the age of the grape grower, the financial situation of the grape grower, a participation in a cooperative, the age of the vines, the existence of the previous grub-ups. Furthermore, in regard to the varietals there appear no strong correlation between the grubbing-up rate and Carignan, Syrah, Grenache and Sauvignon.

6. CONCLUSION

Can the grubbing campaigns that followed the period we studied, i.e. after 2007/2008, be clarified or, conversely, can it enlighten the micro-economic analysis of our survey on the permanent grubbing-up awarded in Hérault?

The three campaigns that followed, 2008/2009, 2009/2010 and 2010/2011, were the implementation of Commissioner Mariann Fischer Boel's project of massive grubbing-up schemes oriented first on the equilibrium of the market, then on the improvement of the productivity of European viticulture. This orientation was formalized in the criteria required for allocating aid: the grubbing-up of an entire vineyard or the grape grower's age needed to be higher than 55 years. As such, this grubbing-up policy allowed elderly people without heirs or any economic prospects to exit their business and at the same benefit from the cashing out of their capital.

Simple criteria were needed to implement Fischer Boel's policy, however, these criteria could not take into account qualitative aspect such as the choice of grape varietals to be grubbed up (see improving grape varietals of the 2007/2008 survey), nor the financial needs of grape growers under pressure from banks due to debt stemming from the crisis of overproduction in 2004 (Cf. motivations). In fact, it is also known that the selected criteria have caused families to divide their vineyards to meet the threshold and benefit from this funding (see the partial uprooting observed in 2007/2008).

The realization of this operation was a success as it reduced the EU's vineyard production potential and allowed the early retirement of many operators. In the

years that followed, the question of premiumized permanent grub-ups was settled. In fact, at first our work only serves to improve our understanding of the impact of a “dated” agricultural policy measure.

Subsidized grubbing-up policies have been implemented since a long time in many grape-producing countries. The European Commission has finally adopted this tool to achieve an identical goal: regulate the supply through the control of the production potential. Even though the question of how to improve productivity has been set at the forefront as a justification for the intervention, the target is truly, in a first step, the impact of the reduction of supply potential on the market. From this point of view, the policy was highly efficient since 160,550 ha were grubbed up.

In our analysis, limits we faced stemmed from the sampling method as the selection of grape growers was volunteer-based and thereby affects the representativeness of our quantitative evaluation. Also, by using indirect productivity variables, age and total area grubbed up, the 2008 wine CMO rules for the 2008/2009 grubbing-up campaign gave priority to older grape growers and those grubbing up all their vines. However, it seems quite certain that these tools/variables take into account all aspects of the decision-making process to grub up and the data collected renders it difficult to analyze multifactorial motivations. Furthermore, the quality policy appears to be put on the back burner since there are no criteria taking into account the nature of the grape varieties.

As for perspectives to improve our analysis, there is work to be completed by improving the data processing, renewing the survey after 2011 (last campaign) and continuing to monitor data on the number of grape farms and their sizes, by particularly taking into account private estates and cooperatives.

Our analysis of the grubbing-up rates of the 2007/2008 campaign show that some of the least efficient farmers were eliminated through the deletion of their farms and when varieties of the grubbed-up grape are taken into account, the results merge towards those expected by the new 2008 wine CMO as most of the grubbed-up grapes are old or not sought-after varieties. However, one sixth of the eliminated lots are young improving varieties.

The analysis of the motivations encompasses a large diversity of motivation and is mainly split between economic reasons linked to the crisis and the life cycle of the grape grower. The economic crisis and the premiums led a certain number of grape growers that had established vineyards in the '90s to use the subsidies to reduce their debt. The 2008 wine CMO enabled a certain proportion of windfall for grape growers offsetting the

impacts of the 2004 global supply crises (overproduction) and the 2008 demand crisis (subprime): premiums just as much help grape growers “get by” as improve productivity.

In their 2016 article, Kim Anderson and Hans Jensen [51] criticized how the OECD interpreted the subsidies paid by the European Union to the grape-growing sector. When trying to attempt to rectify the retained values, they added in the grubbing-up premiums. Would the grubbing-up premium be a social subsidy helping the aged and non-efficient grape growers to retire? Or would it be a larger subsidy helping the “wine industry”? Our study on the 2007/2008 grub-up campaign, the ultimate one before the introduction of the 2008 wine CMO, gives us the following results: half of the grub-ups are done by grape growers for reasons that will be targeted by the 2008/2011 grub-up campaigns (the rejuvenation of the vines and grape growers) and the other half of the grub-ups are related to a windfall effect enabling grape growers to survive the crisis and wait for better days, even by grubbing up improving varieties. We can only wonder if this windfall effect will also appear in the 2008/2011 campaigns.

7. DISCUSSION

Premiumized grub-up campaigns should therefore theoretically be a policy of the past. However, news emanating from the wine market brings us back to reality. Indeed, as overproduction reappeared in Bordeaux, the question to grubbing up 8,000 to 10,000 ha of vines is again being brought up [32].

On May 23, 2022, during the general assembly of the Bordeaux Wine Interprofessional Council (CIVB), the CIVB president stated that “European texts do not currently allow to finance through public money permanent grub-ups. Reminding this does not mean that we are against grubbing up, it means that these texts must be changed to remedy it” [32]. In its subtitle, the newspaper prints: “Faced with the abandonment of vines and the depression of winegrowers, the interprofession wants to convince other French and European regions to release community funds to grub up surplus plots”.

The question to grub up a significant area of vine is again on the rise, but the mechanism for a collective financial incentive through premiums no longer exists. The possibility of reintroducing this scheme through the French NSP raises many questions such as what specific criteria to introduce (exclusion of area or grape varieties, minimum surfaces, age of the winegrower or the vines, etc.). More questions arise, notably economic and

political ones (on what budget to take the means of this campaign, at what level to ask for the individual bonus, what contribution to ask from the interprofession or the region, how to involve and obtain the agreement of the European Commission and its funding?)

At the microeconomic level, our work very modestly highlights a set of economic policy questions: how to take into account the economic situation of winegrowers, how not to destroy part of the quality grape varieties, and which criteria should be selected for a grubbing-up campaign and premiums should be directed towards which producers. The new policy of planting authorizations has had consequences on the price of land: how will this effect be taken into account in a new grubbing-up intervention? [4]

Furthermore, it appears that the question of premiumized grubbing should no longer exclusively be seen in terms of qualitative categories of wine, i.e. table wines versus quality wines. In fact, this question should take into account both national and global markets that are increasingly respectfully segmented into regions and countries. The 2007/2008 Hérault rules of excluding grub-ups in certain appellations or certain varieties in certain appellations could be used in the case of Bordeaux.

Finally, on a more general note, from a historical perspective, perhaps grub-up campaigns should just be seen as a succession of long-term stop-and-go policies essential to balancing the market?

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