Medium-Term Prospects for Portuguese Agriculture under Health Check Proposals – A Quantitative Analysis with the CAPRI Modelling System

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Jel classification: Q180, C150

Abstract

The challenges of Common Agricultural Policy are driven by internal and external factors, such as the budgetary constraints, the budget reform, the globalization and the world financial crisis.
According to this work results, CAP will continue its evolution from a sectorial to a territorial approach, with a slow re-balance of its two pillars. The Portuguese agriculture will slowly adjust itself to the disappearance of prices and markets policy and the reinforcement of rural development policy. As in the past, agriculture will accommodate the reform effects and adjust to a new framework without sudden brakes or disclosers.

Key words: Common Agricultural Policy, Health Check proposals, CAPRI model.

Résumé

Les défis de la politique agricole commune sont déterminés par des facteurs internes et externes, tels que des contraintes budgétaires, la réforme budgétaire, la mondialisation et la crise financière mondiale.
Selon les résultats de ce travail, la PAC va poursuivre son évolution en passant d'une approche sectorielle à une approche territoriale, avec un lent re-équilibre de ses deux piliers. L'agriculture portugaise va s'ajuster à la disparition des prix, à la politique des marchés et au renforcement de la politique de développement rural. Comme dans le passé, l'agriculture devra s'adapter aux effets de la réforme et à un nouveau scénario sans changements brusques ou ruptures.

***Mots-clé**: Politique Agricole Commune, Propositions du* Health Check*, le model CAPRI.*

1. Introduction

The Common Agricultural Policy is, no doubt, a policy in evolution. To analyse this evolution one must understand which factors are leading the change and which are the evolution tendencies.

The adjustments that are consequence of the new policy context – a consequence of the policy framework, as it is the case with CAP reform, and not a consequence of an isolated policy – seem to be done gradually, in an adapting way, without the sudden brakes or disclosers with the past that are often pointed out by partial analysis.

To better analyse the direct and cross effects that are consequence of changes in the policy context, the instruments of policy analysis that are able to represent the complexity of intra and intersectorial relations established within an economy seem to be the adequate ones. It is the case of multisectorial and multi-market simulation models, which anticipate in a realistic way the economy adjustment in the real world.

The paper proposes the quantitative analysis of medium-term prospects for Portuguese agriculture under health check proposals, using the CAPRI modeling system and is organised as follows: after this brief introduction, the second section presents the context of CAP, introducing the starting point to understand the reform, the challenges and vectors of change and finally some challenges for the post-2013 CAP. The third section presents the CAPRI modelling system with which the analysis is conducted. The fourth part describes policy implementation, scenario assumptions and the main results for Portuguese agriculture, for both reference and simulation run. In chapter five the main conclusions of this work are drawn.

2. The context of CAP

To analyse any CAP change, one must know exactly which is the starting point. This means that one must be aware that it is a policy which has been profoundly reformed in the recent past (EC, 2003):

- The role of intervention mechanisms has been significantly reduced;
- The support is mainly decoupled and subject to conditionality;
- There has been a reinforcement of Rural Development (CAP 2nd pillar).

This policy is also more efficient:

- The market disequilibrium and public stocks are not so common
- There has been a raise on the competitiveness and a change in the agriculture's role on commercial exchanges.
- There has been a better use of public funds with a more efficient income transference.

Finally, this policy is in constant change. The agreement reached in 2003 had already some revision clauses to be applied from 2009 to 2013 that allow new adaptations according to market and other conditioning factors evolu-

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tion. In the end of 2007, the Commission revealed its project to rationalize and continue to modernize the EU agricultural policy. The CAP «health-check» has been drawn to burden the agricultural policy functioning based on the experience acquired from 2003 and trying to adapt it to the new challenges of a 27 Member-States EU. The debate has a double objective: to promote the adjustments in the period 2009-2013, and to prepare a profound CAP reform after 2013. The «health-check» main questions are (EC, 2007a):

1. How to simplify the Single Payment Scheme (SPS)?
2. How to guarantee that the support instruments, designed for a six members' European Community, are relevant today?
3. How to face the new challenges, from climatic changes to water resources and biodiversity protection?

In the background, there are internal pressures, such as budget constraints, changes in the EU political priorities and the challenges of new enlargements (to Turkey, for instance) and external pressures, as the WTO Doha round and a profound convulsion on the agri-food world markets (Anania, 2003).

All these considerations lead us to the challenges CAP must deal with today, and the possible vectors of change. To assure the European model of agriculture survival, the future CAP must be able to accommodate external pressures (WTO), to respect budgetary discipline and to answer its legitimacy questions. It must satisfy the European citizens, who want a CAP able to (EC, 2007b):

- assure safe food and a regular market supply (in a world where irregularity and instability are raising);
- respect the environment promoting the natural resources preservation and respecting the animal welfare;
- promote a balanced and sustainable development of rural areas;
- answer new challenges, such as climatic changes, biodiversity and water management.

Finally, one must consider what is in discussion for the post-2013 CAP. Will the market policy (1st pillar) be emptied, with more decoupling, more conditionality and more modulation? Will there be a strengthening of the Rural Development policy (2nd pillar), with more environment and landscape planning concerns, more economic diversification and more life quality in rural areas? Will the new challenges be met, i.e., will the CAP be able to consider risks management, climate changes, water management, bioenergy, biodiversity, etc. (EC, 2007b)?

In the line of previous reforms, CAP will continue an evolution from a sectorial approach to a territorial approach with a slow re-equilibrium of the two pillars. The «health-check» proposals points to this, proposing (EC, 2007a):

- a more uniform support system, a revision of conditionality, total decoupling and payments limits;
- the elimination of supply control mechanisms (set-aside, milk quotas, etc.) and the identification of regions and sectors that need specific policies;
- the reinforcement of rural development (with more modulation) to answer new challenges and the creation of risk management efficient mechanisms.

3. The CAPRI modelling system

The CAPRI modelling system is a system of economic models, conceived as a simulation and projection instrument for the EU agricultural sector. It is based on (Wieck, *at al,* 2002):

1. A framework in what concerns physical consistency, in which there is balance for agricultural area, young animals and feed requirements for animals as well as nutrient requirement for crops, that are realised as constraints in the regional supply models.
2. Principles of economy accounting, according to the Economic Accounts for Agriculture (EAA). The model covers all outputs and inputs included in the national EAAs for the Member States, with revenues and costs broken down consistently to regions and production activities.
3. A description of policy in which the regional supply models capture all relevant payment schemes with their respective ceilings as well as set-aside obligations and sales quotas. The market side covers tariffs, intervention purchases and subsidised exports. The policy of non-EU regions is based on OECD PSE/CSE data bank.
4. Finally, there are behavioural functions and allocation steering strictly in line with micro-economic theory. Functional forms are chosen to be globally well behaved, allowing for a consistent welfare analysis.

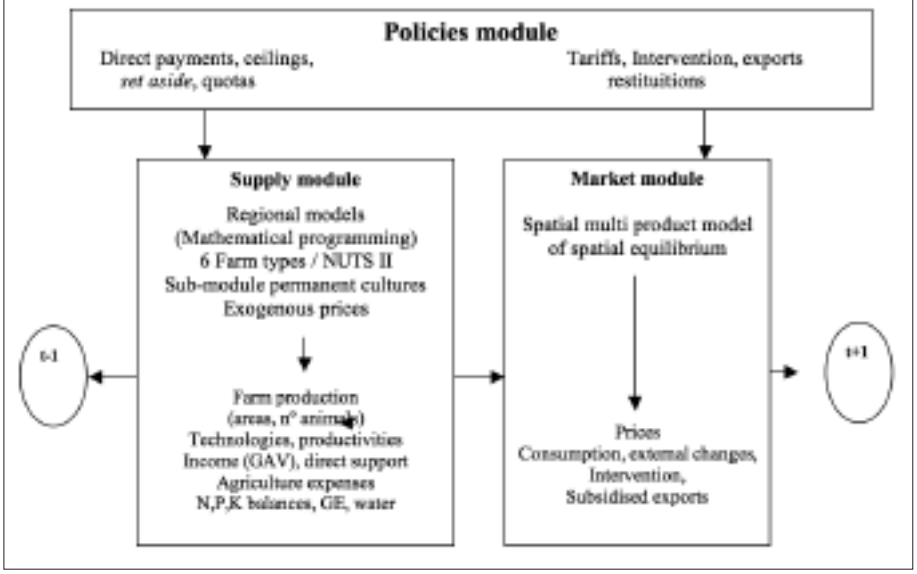
The CAPRI model allows the analysis of policy markets (administrative prices/tariffs/preferential agreements/subsidized exports), the support systems/quotas/set-aside, the environmental policies and the changes in external vectors (population/inflation/exchange rates/consumer behaviour/technical progress). The simulations results give occupied areas and number of animals, input/output coefficients, income indicators, producer and consumer prices, supply and demand to each Member State and commercial exchanges between member-States, environmental indicators (such as N, P and K balances and gas emissions) at regional level, CAP costs detailed to policy instrument, welfare analysis and other relevant agricultural aspects (Wieck, *at al*, 2002).

The model distinguishes a supply and a market module, iteratively coupled. The ***supply module*** consists of aggregate programming models at NUTS II level, working with exogenous prices during each iteration. After being solved, the regional results of these NUTS II models are aggregated into Member State level models, which are then calibrated to these results by using techniques borrowed from Positive Mathematical Programming. Young animal prices are then determined by linking these Member State models into a non-spatial EU model with market balances for y-

oung animals. Afterwards, supply and feed demand functions of the ***market module*** are calibrated to prices and results from the supply module on feed use and production of the current iteration. The market model is then solved and the resulting producer prices at Member State level drive the next iteration with the supply models. Equally, in between iterations, premiums for activities are adjusted if ceilings are overshot according to the results laid down in the Common Market Organisations (Wieck, *at al*, 2002).

The underlying methodology of supply for yearly crops and animals assumes a two-stage decision process. In the *first stage*, producers determine optimal variable input coefficients (nutrient needs for crops and animals, seed, plant protection, energy, pharmaceutical inputs, etc.) per hectare or head for given yields which are determined exogenous by trend analysis. Nutrient requirements enter as constraints in the supply models, whereas all other variable inputs together with their prices define the so-called accounting costs. The proceeding reflects the calculation of gross margins in farm management. In the *second stage*, the profit maximising crop mix and animal numbers are determined simultaneously with cost minimising feed and fertiliser mix in the supply models. Availability of grass and arable land as well as sales quotas restrict production possibilities and the crop mix is further on influenced by set-aside obligations. Animal requirements (energy, protein etc.) are covered by a cost minimised feed mix combination, whereas fertiliser needs of crops are met by either organic nutrients found in manure or purchased fertiliser. Fodder (grass, straw, fodder maize, root crops, silage, milk from suckling cows or mother goat and sheep) is assumed to be non-tradable, and hence animal processes are linked to the crop production and regional land availability. All other outputs and inputs can be sold and purchased at fixed prices. Selling of milk cannot exceed the quota and for sugar production an A,B,C quota system is embedded (Wieck, *at al*, 2002).

Figure 1 – *CAPRI: structure and functioning of the model at national level.*



The following figure (fig. 1) shows the structure and functioning of the CAPRI model at national level.

The use of a mathematical programming approach has the advantage to directly embed compensation payments, set-aside obligations, voluntary set-aside and sales quotas, as well as to capture important relations between agricultural production activities. The programming models are calibrated to observed set-aside hectares, including voluntary set-aside, and non-food production on set-aside land is treated as a separate production activity. Fallow land not falling into set-aside programs reflects the difference between land reported as idling in national statistics and data from commission services on actual hectares in set-aside programs. Not at least, environmental indicators as N,P,K balances and output of gases linked to global warming are implemented in the system (Britz, *at al*, 2003).

4. Scenarios assumptions and results

This section discusses the simulation results, both in the reference run as well as in different evolution scenarios, comparing the results under different assumptions.

Trough the modelling of different evolution scenarios, changes in CAP will be simulated. The scenarios are:

1. Reference run: present CAP
   - Implementation of Mid-Term review (decoupling and SPS rates; intervention reduction).

The starting point is the present situation, consequence of the 2003 CAP mid-term evaluation.

2. Simulation scenario:
   - Proposals of CAP «health-check».

From the identified starting point, three «sub-scenarios» were considered, to simulate the results of the changes proposed on the CAP «health-check».

The objective is to determine how the scenario for next years' European policy will influence agriculture in Portugal – activities levels, areas or heads, UAA, carbon emissions, etc. The base year for all scenarios is 2002 and the results are presented for 2013.

In each of the three «sub-scenarios» the answers to one of the questions raised in CAP health-check was considered. Answers from each scenario were analysed separately and then all together. The «health-check» scenario considers the simultaneous answer to all the questions and is referred to in the model as the HC scenario.

– HC1. How to make the Single Payment Scheme more effective, efficient and simple?

- Change from a payment system based in historic income (reference amounts) to a more «normalized» system.
- Raise of decoupling rate.

– HC2. How to render market support instruments, originally conceived for a Community of six member states, still relevant in a more globalised world and an EU of twenty-seven?

- Abolish market intervention for cereals, except in the case of bread wheat.
- Abolition of set aside.
- Gradual raise of milk quotas to allow a «soft landing» for the sector (2%).

HC3. How to master new challenges, from climate change to growth in biofuels and water management and ongoing ones such as biodiversity by adapting to the new risks and opportunities?

- Abolition of the support scheme for energy crops.

Table 1 – *CAPRI: Impacts on income, budget and welfare.*

[Mio Euro]	Base year 2002	Reference run 2013	Var. %	HC Scenario 2013	Var. %
Agricultural income (GAV)	**4.075,51**	**3.746,26**	**-8,1**	**3.801,01**	**1,5**
Premiums	583,32	712,15	22,1	653,49	-8,2
EAA Output	8.886,70	7.982,18	-10,2	7.926,59	-0,7
Output crops	4.746,58	4.510,80	-5,0	4.510,87	0,0
Output animals	3.767,37	3.127,71	-17,0	3.072,04	-1,8
Output rest	372,75	343,68	-7,8	343,68	0,0
EAA Input	5.394,51	4.948,07	-8,3	4.779,07	-3,4
Crop specific Input	690,49	603,55	-12,6	601,90	-0,3
Animal specific Input	2.601,99	2.371,50	-8,9	2.205,46	-7,0
Other Input	2.102,03	1.973,02	-6,1	1.971,70	-0,1
FEAGA budget	**645,93**	**748,95**	**15,9**	**690,12**	**-7,8**
Total Welfare		**24.701,83**		**24.821,21**	**0,5**

Source: Model results

Table 2 – *Agricultural production impacts.*

	Reference run 2013			HC Scenario 2013				
	Income [Euro/ha or head]	Ha or herd size [1000 ha or hds]	Supply* [1000 t]	Income [Euro/ha or head]	Var. %	Ha or herd size [1000 ha or hds]	Var. %	Supply * [1000 t]
Cereals	401,17	491,39	1.609,13	398,36	-0,7	495,9	0,9	1.602,17
Oilseeds	253,79	34,41	34,12	250,91	-1,1	36,81	7,0	35,42
Other arable crops	3.057,13	82,13	3191,09	3.082,03	0,8	84,23	2,6	3.226,18
Vegetables and Permanent crops	2.868,5	793,41	5.773,33	2.904,54	1,3	794,53	0,1	5.780,61
Fodder activities	118,43	1.886,22	22.617,00	121,42	2,5	1.876,06	-0,5	22.241,40
Set aside and fallow land	41,57	500,83		42,04	1,1	500,87	0,0	
Dairy cows	1.612,04	330,00	2.092,72	1.709,21	6,0	336,03	1,8	2.134,61
Beef cattle	507,20	159,63	46,21	345,28	-31,9	147,55	-7,6	39,48
Other animals	44,53	9.430,2	8.192,36	45,87	-1,5	9.369,26	-0,6	8.192,14

Source – Model results

Table 3 – *Agricultural markets impacts.*

	Reference run 2013			HC Scenario 2013				
	Supply [1000 t]	Net trade [1000 t]	Demand [1000 t]	Supply [1000 t]	Var. %	Net trade [1000 t]	Var. %	Demand [1000 t]
Cereals	1.609,1	-3.214,4	4.823,5	1.602,2	-0,4	-3.007,9		4.610,0
Oilseeds	19,5	-1.515,0	1.534,5	20,8	6,7	-1.514,2		1.535,0
Other arable field crops	901,0	-296,2	1.276,1	1.015,0	3,6	-261,2		1.276,2
Vegetables and Permanent crops	3.712,0	-311,1	4.023,1	3.719,2	0,2	-306,2		4.025,5
All other crops	4.287,2	-26,5	4.313,7	4.287,2	0,0	-26,5		4.313,7
Fodder	22.963,0	0	22.963,0	22.946,4	-1,0	0		22.946,4
Dairy products	1.120,2	-291,0	1411,1	1.140,2	1,8	-271,0		1.411,2
Meat	830	-175,8	1.014,8	834,1	-0,6	-180,8		1.014,9
Other Animal products	3.998,1	255,3	3.742,8	3.950,1	-1,2	169,0		3.781,1
Young animals	7.913,8	-790,1	8.695,9	7.896,6	-1,7	-849,1		8.693,7
Oils	402,2	123,6	278,9	402,8	0,1	125,4		277,3
Oil cakes	1.088,8	119,6	969,9	1088,8	0,0	203,1		884,5
Secondary products	165,6	-687,0	601,8	165,6	0,0	-488,0		601,8
Manure output	510,0		510,0	476,2	-6,6			476,2
Fertiliser	392,9		157,0	389,5	-0,9			141,8
Feedingstuff	19.470,1		19.470,1	18.752,2	-3,7			18.752,2

Source: Model results

4.1. Income, budget and welfare

The results to income, budget and welfare can be appreciated in table 1. The income from agriculture, measured by GAV, increases slightly from the reference run to the HC scenario because, in spite of a decrease in the premiums and a maintenance of the agricultural output, there is a considerable decrease in the inputs (especially for animal activities).

The HC scenario will lead to a decrease in the total amount of premiums compared to the reference run mainly because it is impossible to reach the SPS, based on a farm specific payment with a regional payment. The decrease in CAP expenses, financed by EU budget and linked with the 1st pillar (FEAGA), is mainly caused by a huge reduction in costs with animals. This is a consequence of a decrease in the premiums (because there is a reduction in the number of animals raised, with the exception of milk cows) and, in a small scale, also a consequence of a decrease in the subsidies to exports and in the intervention costs.

It must be stressed that there is no sensible change in the welfare.

In what concerns the differences between the base year and the reference run it can be observed that the maintenance of 2003 policies would mean a significant raise in the premiums (and, as a consequence, in the FEOGA expenses) and a significant reduction in the animal output.

As stressed above, it can be observed that the sector is globally stable, with the significant reduction in premiums and FEOGA expenses, balanced by the reduction in inputs.

4.2. Production and markets

The changes in the SPS, when considered alone, do not lead to significant changes in the various activities areas, except fodder. Nevertheless, when all the changes are considered, there is a generalized decrease in the number of animals – there is an increase in the number of milk cows but a generalized decrease in the number of all the other animals, more susceptible to total decoupling (table 2).

The rise in milk quota leads to a significant increase in the trade balance for the dairy sector, by globally diminishing the Portuguese external dependency on milk products. Neverthe-

less, this benefit on the relations between producers and consumers, due to a decrease in processing margins, together with the other health-check proposals only avoids a greater deterioration of the producers' situation. It still suffers from a generalized decrease in producers' prices (there is a decrease in the prices of butter, fresh milk products, cream, whole milk powder and an increase in the prices of skimmed milk powder, cheese and concentrated milk) and a rise in processing margin (table 3).

Anyway, it is relevant that total abolition of milk quota in Portugal would allow milk production to raise only 2,5%, which means the sector, even considering only Portuguese situation and not the abolition of milk quota all over Europe, have no capacity to raise production.

The abolition of the support scheme for energy crops decreases this activity income (in the exact amount of support) but only decreases 280 ha on the occupied area, which means the activity is competitive in the market.

The administrative prices do not change and the consumer and producer's prices remain stable.

In general, it can be stated that the production pattern remains the same in crops production and slightly changes, favouring milk, in animal production. There is a trend to production systems' extensification and the markets reflect the expansion on milk production.

The change from a historic SPS (farm specific payment) to a regional SPS (HC1), leads to a reduction in the total amount of premiums (-6%), mainly as a consequence of:

- a drop in the payments to pulses (0,08 M€), due to a decrease in the area (less 1370 ha).
- Abolishment of the farm specific payment (less 431,25 M€) substituted by a regional SPS of 375,81 M€ (which means the ceiling of 431,25 M€ is not reached, even in the HC1 scenario).
- There is no significant change in the areas devoted to different activities, although a raise on the potato area of 2270 ha and a raise on the other fruits (except apples, pears and citrus) area of 420 ha. should be highlighted
- Also important is the decrease on fodder area by 2140 ha, balanced by a raise of 730 ha on fallow land – as expected this corresponds to a slight decrease in the number of animals, especially those that are raised, at least partially, with an extensive regimen.

It is interesting to state that income from agriculture decreases, which corresponds to a generalized decrease in the various activities income (because of a profits' and Premium decrease not compensated by decrease in costs). Nevertheless, the consumer's welfare increases and there is a decrease in the taxpayers' costs with CAP (financed by EU budget and linked with the CAP first pillar). This means the overall welfare linked with agriculture raises, which is a sensible result if one thinks that payments that were previously linked with UAA are regionalized and distributed for «common welfare».

Total decoupling leads to a reduction in premiums (-6%) and in output (-2%). Nevertheless, the great decrease in inputs (-4%), especially in what concerns animal activities (-8%) leads to an increase in GAV (2%).

In what concerns the productions, there is a generalized increase in the areas produced – cereals, oilseeds, pulses, vegetables and permanent crops – and a decrease in animal activities (with a corresponding decrease in the areas of fodder activities and fallows), which means that animals are more susceptible to total decoupling and farmers change these activities with crops.

We could not find a pattern supporting that more decoupling would correspond to less area, or less decoupling to more area. What was found was a re-arrangement of the combination of activities and a generalized decrease in premiums.

The 2% increase on the milk quota provokes an answer from the milk sector that entirely fulfils the additional quota (table 4). Specifically, it:

– Raises the number of milk cows

– Raises the supply, although at different rates for different milk products, thus reducing the external dependency on these products

– The agricultural income, the premiums and the FEAGA expenses remain stable.

Table 4 – *Results from the 2% increase on milk quota.*

	Reference run 2013			HC Scenario 2013					
	Supply [1000 t]	Net trade [1000 t]	Demand [1000 t]	Supply [1000 t]	Var. %	Net trade [1000 t]	Var. %	Demand [1000 t]	Var. %
Dairy products	**1.120,2**	**-291,0**	**1.411,1**	**1.142,0**	**2,0**	**-269,2**	**7,5**	**1.411,2**	**0,0**
Butter	24,2	6,1	18,1	24,7	2,3	6,6	9,0	18,1	0,0
Skimmed milk powder	12,3	-1,4	13,7	12,7	3,5	-1,0	30,1	13,7	0,0
Cheese	95,5	-21,5	116,9	95,8	0,4	-21,1	1,7	117,0	0,0
Fresh milk products	967,9	-261,7	1.229,6	987,1	2,0	-242,6	7,3	1.229,7	0,0
Cream	11,1	-8,1	19,2	11,0	-0,8	-8,2	-1,1	19,2	0,0
Concentrated milk	0,01	-4,9	4,9	0,01	0,0	-4,9	0,0	4,9	0,0
Whole milk powder	9,3	0,5	8,7	10,6	14,5	1,9	254,6	8,7	0,0

Source: Model results

4.3. Environmental indicators

In what concerns the environmental indicators, it must be said that the health-check results are in general positive, due to the decrease in animal production activities and forage production extensification. There is a decrease in negative environmental externalities, not due to a reduction in seeded area but to a change in the land cover diversity and its extensification.

As can be seen in table 5, there is a reduction in potential lixiviation, a reduction in CH4 and NO2 emissions and a sensible reduction in the Global Warming Potential (GWP).

The changes that are consequence of health-check proposals won't affect in the same way all Portuguese regions. The differences between regions can be observed in figures

Table 5 – *Results from the 2% increase on milk quota.*

	Reference run 2013			HC Scenario 2013					
	Total	Amount per ha	Impact in GWP	Total		Amount per ha		Impact in GWP	
Nitrate surplus	165	43,55		158,05	-4,2%	41,72	-4,2%		
Phosphate surplus	79,03	20,86		75,46	-4,5%	19,92	-4,5%		
Potassium surplus	117,65	31,06		110,19	-6,3%	23,09	-6,3%		
Ammonium output	51,57	13,61		49,62	-3,8%	13,10	-3,8%		
CH4 Total emissions	156,62	41,34	3.289,0	143,22	-8,6%	37,81	-8,5%	2.987,04	-8,6%
N2O Total emissions	8,20		2.543,1	7,82	-4,6%			2.417,47	-4,7%
Global Warming Potential	5.832,1	1.539,46		5.430,35	-6,9%	1.433,42	-6,9%		

Source: model results

Figure 2 – *Results from the 2% increase on milk quota.*

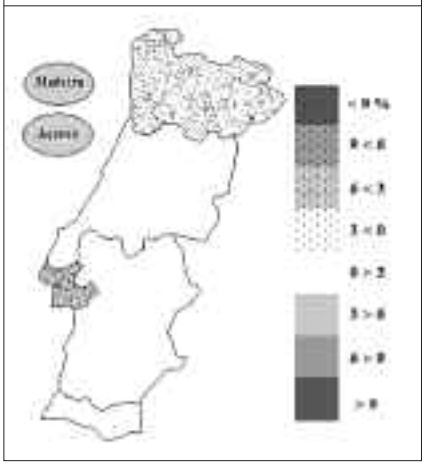
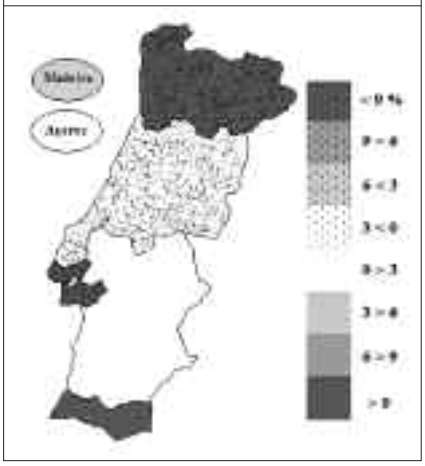


Figure 3 – *Percentage change on Premium amount.*



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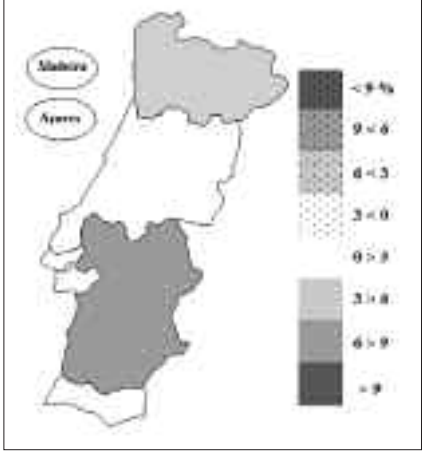

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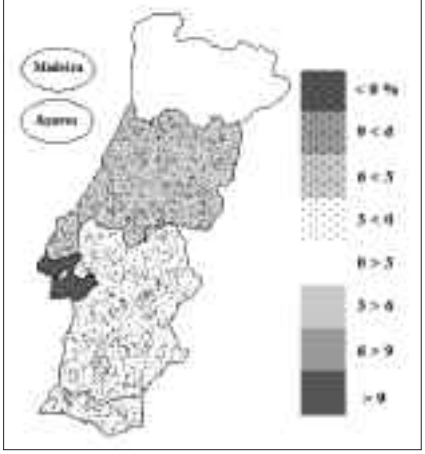
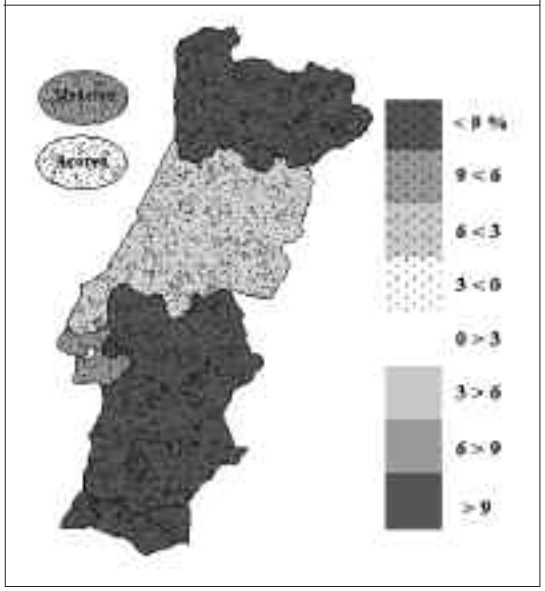


2-6, in what concerns agricultural income, amount of premiums, level of dairy cows high yield activity, the abandonment potential and the environmental effects. It can be stressed, for example, that in what concerns the premium amount the Portuguese region that benefits more of the new

Figure 2 – *Results from the 2% increase on milk quota.*



scheme is the Algarve. The predominant activities of this region – fruits and vegetables – were not supported in the past; so they have no historical rights and they will be especially benefited by a regionalised payment scheme. In what concerns the abandonment potential, it could observed in the model results that the regions of North and Lisbon, which were not able to extensify their production systems, are those which have a greater abandonment potential.

5. Conclusions

CAP is still a changing policy. The challenges ahead are driven by internal factors, such as:

- budgetary constraints: phasing SPS in the NMS until 2013 and the extrapolation of Direct payments to Turkey, the Lisbon strategy, the mid-term review on financial perspectives 2007-2013.
- The budget reform, with change in EU political priorities, and the loss of the traditional agriculture importance,
- and also by external factors, such as:
- globalization with more liberalization on world trade.
- the world financial crisis.

In the near future, CAP challenge will be to develop an European agri-food market that can survive in a world competitive market and answer the WTO pressures. It must also respect the established budget, responding to the new EU priorities, stimulating the agricultural sector competitiveness and promoting products' quality and the

respect by environmental concerns and animal welfare. Finally, CAP must ensure a sustainable use of natural resources and an effective rural development that contributes to the EU regional cohesion.

According to this work results, CAP will continue its evolution from a sectoral to a territorial approach, with a slow re-balance of its two pillars and the Portuguese agriculture will slowly adjust itself to the disappearance of prices and markets policy and the reinforcement of rural development policy. There will be small adjustments on agricultural product composition, that will raise a little. The total welfare will remain steady and there will be a pressure decrease on the environment.

A main conclusion must be pointed out: the risks and threats over Portuguese agriculture held by CAP reform and stressed by coming changes – namely production abandonment, generalized loss of competitiveness and agriculture decline are not confirmed by the results of CAPRI model.

As in the past, agriculture will accommodate the reform effects and adjust to a new framework without sudden brakes or disclosers.

7. References

Anania, G. *et al*. (2003), *Policy Vision for Sustainable Rural Economies in an Enlarged Europe*, Akademie fur Raumforschungund Landesplanung, ARL, Hannover.

European Commission (2007a), *Preparing for the «Health Check» of the CAP reform*, Brussels, http://ec.europa.eu/agriculture/healthcheck/index_en.htm, accessed March 2008.

European Commission (2007b), *Scenario 2020 – Scenario study on agriculture and the rural world*. Contract No. 30 – CE – 0040087/00-08, Brussels.

European Commission (2003), *Mid-Term Review of the Common Agricultural Policy: July 2002 Proposals, Impact Analysis*, Brussels *http://europa.eu.int/comm/agriculture/publi/reports/mtrimpact/rep_en.pdf*, accessed March 2008.

Britz, W., C. Wieck, I. Perez, T. Jansson (2003), *CAPRI model description*. University of Bonn, Department for Economics and Agricultural Policy, Bonn

Britz, W., Wieck, C., Perez, I. (2002), *Mid Term Review Impact Analysis with the CAPRI Modelling System*, University of Bonn, http://europa.eu.int/comm/agriculture/ publi/reports/mtrimpact/rep4_en.pdf, accessed January 2008.

Wieck, C., Perez, I. Britz, W., (2002), *Medium Term Prospects for EU Dairy Markets under Agenda 2000 and the Midterm Review Proposals – A Quantitative Analysis for the Spanish Dairy Sector with the CAPRI Modelling System*, University of Bonn, http://europa.eu.int/comm/agriculture/publi/reports/mtrimpact/rep4_en.pdf, accessed January 2008.