

# THE IMPACT OF THE AGENDA 2000 REFORMS ON THE GREEK FARM SECTOR. ESTIMATES USING THE NATIONAL FARM ACCOUNTING DATA

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During the past two years prices of agricultural commodities have declined in some cases to the historically lowest levels. This was the result of the growing supplies of many agricultural products and the dramatic drop in import demand due to the financial crisis of the rapidly industrializing countries of Asia and the collapse of the Russian economy in 1998.

Because of these current difficulties there is significant pressure on governments to increase trade barriers and provide additional relief for farmers. These pressures are especially pronounced in Greece be-

cause of the relative large size of the agricultural sector (about 10% in 1997) and are further due to the tight monetary and fiscal policies which are necessary for the country's economic convergence with other European Union countries.

The previously mentioned developments have renewed the interest concerning the probable impact of the Agenda 2000 reforms on the Greek farm sector. This paper examines the likely effects of these policy developments using farm accounting data obtained from the Farm Accounting Data Network (F.A.D.N.). Farm accounts in Greece are collected from a sample of 5.500 farms units, which cover all the geographical regions and are classified according to the source of their income into 18 farm types. These farms represent approximately 392.000 Greek farms with an economic size above 2 European Size Units - E.S.U. (for more details with respect to this data base and the economic statistics obtained see P. Spathis et al., 2000).

## ABSTRACT

The objective of this study is to estimate the impact of the Agenda 2000 reforms on Greek agriculture and especially on arable crops and the livestock sectors. The analysis was performed using as a basis the 1997 Greek farm accounting data (F.A.D.N.). Four scenarios concerning the expected drop in producer prices were examined using simulation techniques. The overall impact of the reforms in Greek farm incomes is estimated to be very small. It was also estimated that beef producers incomes will improve substantially while at the same time cereal producers incomes are expected to deteriorate moderately.

## RÉSUMÉ

*L'objectif de l'étude est d'estimer l'impact de la réforme d'Agenda 2000 sur l'agriculture grecque et, plus précisément, elle analyse les effets des mesures concernant les cultures arables, la viande bovine et le lait. La recherche est basée sur les données grecques du R.I.C.A. en 1997. Quatre scénarios concernant la diminution attendue des prix aux producteurs sont examinés à l'aide de techniques de simulation. L'impact total de la réforme sur les revenus agricoles familiaux grecs semble très faible. Les estimations montrent aussi une amélioration substantielle des revenus agricoles familiaux pour les producteurs bovins alors qu'en même temps celui des producteurs céréaliers va se détériorer modestement.*

The results in the analysis that follows are derived applying simulation methods considering the year 1997 (most recent available data) as the basis year.

## AGENDA 2000 REFORMS

The main thrust of the European Commission's proposals first made in July 1997 (European Commission, 1997) and part of a broader set of issues discussed in a report known as Agenda 2000, was to make changes to support arrangements for arable crops, beef and dairy that met a broad range of domestic and international objectives.

The proposals were designed to improve interna-

tional competitiveness and give the European Union a proactive stance in the next W.T.O. round while at the same time taking into account domestic objectives such as food safety, the environment and rural development (Pezaros, 1998).

Under the proposed reforms there was less reliance on trade measures to support farm incomes and more on fiscal measures and as result expenditures could increase substantially. The final policies reforms (European Commission, 1999) for the various product categories are as follows:

### Cereals

The intervention price for cereals will be reduced by 15% from 119,19 to 101,31 ecu/t over two years starting 1/7/2000. At the same time, in order to preserve farm incomes, the direct payment will increase from 54 to 63 ecu/t.

### Beef

The beef intervention price will be reduced in three stages during the period 1/7/2000-1/7/2002. The intervention price after 2002 will be fixed at 2.224 ecu/t. Taking into account that the intervention price during 1997 (the basis year) was 3.475 ecu/t, the total reduction of the intervention price during the period 1997-2003 is estimated equal to 36%. Direct payments will be

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increased for male bovine animals and suckler cows. The amount of direct payments is subdivided into a Community-wide basic payment and an additional payment according to national provisions.

The basic premia will be increased by the year 2002 to ecu 210 for bulls and ecu 200 for suckler cows. The additional payments in the case of Greece are estimated equal to ecu 13,5 for bulls and for suckler cows. Thus, the estimated total increase in the premia are shown in **table 1**.

The extensification premium will also be increased to ecu 100 (from ecu 36) at a livestock density of less than 1,4 L.M per hectare. The premium for steers is also increased but this is of very limited interest in the case of the Greek beef sector.

A new slaughter premium is introduced which is set at 50 ecu per animal slaughtered before the age of 8 months and 80 ecu per animal slaughtered after the age of 8 months.

#### Milk - milk products

For Greece, the milk quota after 2005 is increased from 629.000 to 700.000 t. However for the purpose of the present analysis it is assumed that the milk quota remains constant.

Intervention prices for butter and skimmed milk powder will be reduced by 15% in four steps during the period 2005-2007. Direct payments will be subdivided into a basic payment of ecu 17,24 per tonne of each farmers milk quota and an additional payment according to national provisions which is estimated equal to 7 ecu per tonne of milk quota.

#### Mediterranean products

In addition to the previously mentioned reforms, there are minor policy adjustments for tobacco and for olive oil. These adjustments are not expected to have a significant impact on producer prices and for this reason are not taken into consideration in the analysis that follows.

#### SIMULATION ASSUMPTIONS

The previously mentioned reduction in institutional prices is generally expected to be only partially reflected in market prices (see for example: European Commission 1998). This should also be true for the Greek producer prices especially for beef and milk which are far above intervention prices.

The decline in market prices relative to the decrease in the intervention prices following the implementation of the 1992 policy reforms (see **table 2**) provides an indication of the likely price movements which will follow the adjustment of the institutional prices according to the Agenda 2000 reforms.

For the purpose of this study, the analysis was carried out using four scenarios for the agricultural price developments following the previously mentioned cut in institutional prices (based on the Agenda 2000 reforms).

**Table 1 Premia payments for the beef sector**

	Premium (basis year 1997) (ecu)	Premium (basis year 1997) (ecu)	% change
Bulls (1)	135	223,5	65,5
Suckler cows (2)	145	213,5	47,2

(1) Per head paid once in their lifetime.  
(2) Per head per year.

**Table 2 Price movements in Greece resulting from the 1992 C.A.P. reforms**

	(1) Decrease in intervention prices	(2) Decrease in producer prices (1992-1994)	2:1
Cereals	45%	16%	0,35
Beef	11%	2%	0,18
Milk	4,5%	2%	0,44

Source: (1) Eurostat, (2) Greek Ministry of Agriculture.

These scenarios (see **table 3**) were structured taking into consideration the historical evidence mentioned in table 2.

In addition to the above assumptions relative to producer prices, the following assumptions were also made:

\* Crop and livestock production is held constant at 1997 level (basis year)

\* Input prices, except livestock feed prices (see table 3) are held constant at 1997 levels

\* Producer subsidies, compensatory payments etc, not mentioned in the Agenda 2000 reforms, are held constant at 1997 levels.

#### SIMULATION RESULTS

As a consequence of the previously mentioned reforms, the amount of the direct payments (premia payments), as a percentage of gross output, increases for the cereal and beef sectors.

As shown in **table 4** this percentage for the cereal sector increases from 32% in the basis year to around 35% after the implementation of the reforms while for the beef sector the increase is even more significant form

**Table 3 Producer price decrease scenarios used in simulations**

	1	2	3	4
Cereals	-7%	-5%	-7%	-5%
Livestock feed grains	-7%	-5%	-7%	-5%
Beef	0	0	-5%	-5%
Milk	0	0	-5%	-5%

14% to around 25%. The total economic impact on the beef and cereal sectors is a result of the previously mentioned increase in direct payments and the decline in the intervention and producer prices. The basic results of the analysis relating to the cereal and beef sectors are summarized in **tables 5** and **6**. The impact of the Agenda 2000 reforms on the Greek cereal sector (see table 5) is in general terms negative. When cereal producer prices drop by only 5% (scenario 2 & 4) the gross output of the sector remains constant while the impact on farming income is negative but very small. In this case the increase in direct payments, from 32% of gross output in the basis year to 35% after the implementation of the reforms, offsets the fall in intervention and producer prices. This is not possible when producer prices decrease by 7% (scenario 1 & 3) and as a result gross output is reduced by 0,9% (scenario 1) to 1,1% (scenario 2) and farming incomes from 6,6% to 7,2% respectively. The impact on the beef sector is strongly positive. This is due to the increase indirect payments, from 14% of gross output in the basis year to 25% after the Agenda 2000 reforms, and the significant decrease in feed costs as a result in the drop in cereal prices. More specifically (see table 6), when beef and milk producer prices remain constant (scenario 1 & 2), gross output of the beef and milk sectors increase by 12,4% and farming income by 33,8% if cereal producer prices fall by 7% (cash costs fall by 2,9%) and by 12,5% and 31,3 respectively, if cereal producer prices fall by 5% (cash costs fall by 2,1%). The gains in the beef and milk sectors are smaller but still significant when beef and milk prices fall by 5% (scenario 3 & 4). Gross output and farming income increase by 8,1% and 23,4% respectively when cereal producer prices fall by 7% (cash cost fall by 2,9%) and by 8,2% and 20,9% when cereal producer prices fall by 5% (cash costs drop by 2%).

The previously mentioned gains in the beef sector seem very robust. It was estimated for instance, that when cereal prices fall by 7%, beef prices would have to drop by about 37-40% to offset the above gains if milk prices remain constant and by 33-35% when milk prices fall by 5%. Due to the decrease in feed prices there are also significant gains for the pork and poultry sectors (see **table 7**). The increase in farming income for these sectors ranges from 9% to 18% depending on the magnitude of the drop in feed prices. For the remaining livestock sectors, mainly sheep (**table 8**) the gains in farming income are much smaller, around 1-2%, due to the limited use of feed gains. According to the simulation results, the overall impact on farming incomes in Greece (see **table 9**) of the Agenda 2000 reforms is very small and varies from

**Table 4 Impact of the Agenda 2000 reforms on the value of direct payments as a percentage of gross output**

	Basis year	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Cereals	32,0	35,1	34,7	35,1	34,8
Beef	14,2	23,9	23,8	24,8	24,8

**Table 5 Impact of the Agenda 2000 reforms on the Greek cereal sector (% change relative to basis year 1997)**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Gross output	-0,9	+0,1	-1,1	0
Cash costs	0	0	0	0
Farming income	-6,6	0	-7,2	-0,6

**Table 6 Impact of Agenda 2000 reforms on the Greek beef sector (% change relative to basis year 1997)**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Gross output	12,4	12,5	8,1	8,2
Cash costs	-2,9	-2,1	-2,9	-2,1
Farming income	33,8	31,3	23,4	20,9

**Table 7 Impact of Agenda 2000 reforms on the Greek pork and poultry sector (% change relative to basis year 1997)**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Gross output	0	0	0	0
Cash costs	-6,7	-4,5	-6,7	-4,0
Farming income	18,0	9,0	18,0	9,0

**Table 8 Impact of Agenda 2000 reforms on the Greek sheep and goat sector (% change relative to basis year 1997)**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Gross output	0	0,1	0	0,1
Cash costs	-1,9	-1,3	-1,9	-1,3
Farming income	1,9	1,3	1,9	1,3

-0,4% (scenario 3) to +0,5% (scenario 2). Despite the negative impact on the cereal sector, the result seems reasonable given the significant gains in the livestock sectors which account for around 30% of total agricultural output in Greece.

#### CONCLUSIONS

The overall impact of the Agenda 2000 reforms on the

**Table 9 Overall impact of Agenda 2000 reforms on the Greek agriculture (% change relative to basis year 1997)**

	Scenario 1	Scenario 2	Scenario 3	Scenario 4
Gross output	0	0,2	-0,2	0
Cash costs	-0,5	-0,4	-0,5	-0,4
Farming income	-0,1	+0,5	-0,4	+0,2

Greek agricultural sector is expected to be very small with a significant improvement in the incomes of livestock producers (especially for beef and milk) and a modest deterioration in the incomes of cereal producers.

Similar results using farm accounting data were derived for the farm sector in France (Colson et al., 1997).

The negative impact on the cereals sector could have a significant effect especially for farmers in the Greek mountainous and semimountainous regions where 51% of the country's wheat is grown.

This could have unfavorable social consequences due to the low farm incomes in these regions and the non-existent crop alternatives for these farmers.

The drop in corn producers income will probably lead to a temporary expansion in cotton production which

will be moderated however due to the resulting increase in the co-responsibility levies when production exceeds the maximum guaranteed quantities. The improvement in beef sector incomes is not expected to have any significant impact on production due to the existing milk quota (it is expected to increase in the future but by a relatively small amount) and the competition from low priced beef imports from E.U. countries.

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