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Agricultural Situation Report – MALTA

Dr. Marinos Markou
Dr. Andreas Kavazis
Mr. George Stavris

Agricultural Research Institute
Nicosia – CYPRUS
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DRC = Domestic Resource Cost
EAGGF = European Agricultural Guidance and Guarantee Fund
EU = European Union
FAO = Food and Agriculture Organization
GATT = General Agreement on Tariffs and Trade
GDP = Gross Domestic Product
LM = Lira Maltese = 2.30 Euro = 2.8 US$
MRA = Malta Resources Authority
SSR = Self Sufficiency Rate
UN = United Nations
UNDP = United Nations Development Program
WTO = World Trade Organization

1 – Introduction

Malta is located in the center of the Mediterranean Sea just below Sicily. It has a total area of 316 km², including the smaller island Gozo. Malta's population of 391,000 is the smallest of the EU (0.1% of the EU population). Agriculture in the Maltese Islands subsists on a small scale deriving from the small island setting of the country. About 3,000 people work in agriculture, fishery and forestry, corresponding to 1.9% of total civilian employment, an extremely low figure for the EU standards. Balanced economic development, has for some decades, been postulated as the best model that fits the Islands' economic structure and the socio-economic aspirations of Maltese society.

Balanced growth needs to evolve into the right sector balance between agriculture, industry and services as economic activity expands and real incomes rise. Such a growth path will define specific implications for the inter-sectoral terms of trade. Economic policy in Malta has always attached high importance to food and its underlying industry, i.e. agriculture. The amount that the average Maltese household spent on food in 1960 stood at 42.3% of its disposable income and remained so until 1984 when it just declined to 41.9%; it decreased to 36.77% in 1992, to 29.92% in 1995 and to 28% in 2002 (Ministry of Rural Affairs and the Environment).

For economic policy and policy makers therefore, food is of both strategic and tactical relevance: strategic in view of national food security goals and tactical in view of food price effects in the general price level and hence the real wage, competitiveness and overall growth. Besides, for cosmopolitan Malta high quality food, produced locally, enhances the tourism potential of the Islands as a particular venue. In addition, there are the multiple vocations of agriculture that emerge from the multifunctional character of land and agricultural activity with various links throughout the economy, both upstream and downstream. The value of gross output through the formal sector is estimated to have increased by an average of 2.7% per annum between 1996 and 2001 to just under Lira Maltese (LM) 55.6 million, i.e. about 1.8% of total final sales of the Maltese economy. The Islands are potentially self-sufficient in fresh vegetables, eggs, poultry, rabbit meat, pork and fresh milk. Agricultural exports stand at around LM 1.5 million, representing 2.6% of total agricultural output. Malta had achieved GDP growth, through recent years, supported by robust capital formation. The GDP grew from US$ 3.8 billion in 2000 to US$ 5.4 billion in 2004 (Table 1 and Appendix Table 1).

Table 1. Recent economic indicators

	2000	2001	2002	2003	2004(a)	*2005(b)*
GDP (US$bn):	3.8	3.8	4.0	4.8	5.4	*5.2*
GDP per capita (US$):	9,774	9,656	10,316	12,226	13,473	*13,030*
Real GDP growth (% change YOY):	6.3	-1.7	2.2	-1.8	1.4	*1.7*
Current account balance (US$m):	-470	-165	12	-275	-563	*-135*
Current account balance (% GDP):	-12.3	-4.4	0.3	-5.8	-10.4	*-2.6*
Goods & services exports (% GDP):	94.0	82.5	85.9	79.1	75.4	*n.a.*
Inflation (% change YOY):	2.4	2.9	2.2	0.5	2.8	*2.0*
Unemployment rate (%):	4.5	4.7	4.7	5.7	n.a.	*n.a.*

Source: Market Information and Analysis Section

2 – Natural Conditions and Land Use

2.1 – Land resource potential and constraints

The Maltese Islands, which represent the southernmost end of the Apennines (mountain range in Italy) that stretch from the Pyrenees, cover an area of about 312 km² and reach a maximum height of 253 meters. Malta being a country with a high population density has little to spare for agricultural land. From a total of 32,000 ha, agriculture uses 10,000 ha (31%) of which 9,000 are arable. Eighty two percent of Malta's land is without major soil constrains. Sixty seven percent of the country is steep land with a slope between 8-30%. Twenty three percent of the land is under erosion hazard and 10% suffers from shallowness. Malta do not have any dry lands thus having available almost all of its land for exploiting (FAO, Terrastat).

In Malta there are three main different types of soils. These are carbonate raw soils, xerondzinas and terra soils. The characteristics of these soils are: their close similarity to the parent rock material, their relatively young age, the general lack of soil horizon differentiation, and the influence of human activity and disturbance of soil. There are five factors in the development of soil and of these probably three: parent material, climate and time have been fundamental in the production of the soils of Malta. Topography, the fourth factor, is largely dependent on the first three, since landscape is largely molded by erosion and deposition related to the parent structure, process and time. Biological influences (the fifth factor) despite the activity of plants and animals are presently dominated by man's work the effects of which through modifications of the existing patterns are nonetheless profound (Vella, 2001).

There are various regional variations of slope in the physical landscape in the Maltese Islands. There is however, no simple correlation between steepness of slope and the presence/absence of cultivation. In fact the greater proportion of the land with a gradient greater than 1:7 is in fact still under the plough.

Soil erosion constitutes a major ongoing problem throughout the whole Maltese countryside and appears to be increasing due to a number of factors. Some of these factors are: the removal or collapsing of soil retaining rubble walls, damage to rubble walls due to snail collection, off-road motorized scrambling, infrastructure and/or maintenance interventions such as trenching, dredging and cleaning/weeding of country roads, partial removal or rubble walls to provide new access points to fields, localized deforestation, compaction of soil surfaces as a result of heavy passage particularly in popular recreational areas, undermining of watercourse banks in the course of valley engineering works, re-profiling of land into steep escarpments, excavation on sloping ground, down slope ploughing, modification of soil structure through mismanagement, lack of control and repair to incipient sheet, gully and rill erosion effects, deposition of soil and other material on sloping ground which are prone to runoff-induced erosion and on land exposed to wind erosion, reclamation of land in valley beds and watercourses, construction of impermeable surfaces on valley sides and valley catchments, and channeling of urban runoff into valleys (Vella, 2001).

Salinity is the presence of soluble salts in or on soils or in waters. High levels of soluble salts in soils may result in reduced plant productivity or the elimination of crops and native vegetation. The most striking feature of the soils in Malta is the high content of calcium and magnesium carbonates in the whole profile. The high amount of calcium carbonate influences plant growth. Typical of a Mediterranean climate, salinity in Maltese Islands is rather high thus burdening any agricultural activity and water arrangement. Although the extent of salt-affected soils is not well documented, there is plenty of evidence that salinity is indeed a soil constraint for agricultural production. The hydrological features of the Maltese Islands, the Mediterranean non-leaching climate and the scarcity of fresh water resources, constitute predisposing factors for the accumulation of salts and provide the setting for salinity-related phenomena to emerge and develop. Irrigated land is by far the most productive, however, much irrigated land has already become saline, as is the case in the Pwales Valley, where due to the seawater intrusion and over abstraction of the groundwater resources, salt crystals may be observed on the soil surface. Studies by the Department of Agriculture have indicated that the problem of soil salinity is most salient in greenhouse production systems (Camilleri, 1999).

Sodicity is the presence of a high proportion of sodium (Na^+) ions relative to other captions in soil (in exchangeable and/or soluble form) or water. The presence of Na^+ salts in soil, which can lead to soil salinity, can also act as a coagulant or flocculent of soil particles. Elevated levels of Na^+ in irrigation water can lead to sodicity problems in the soil profile under irrigation. As stated already, in Malta the high amount of calcium carbonate influences plant growth by effecting uptake of certain nutrients, it prevents the accumulation of sodium in the exchange complex and hence minimizes alkalinity hazards as a result of irrigation with highly sodic water. Throughout the Maltese Islands even though the data is judged to be insufficient there are higher than desired levels of sodicity thus impairing the crop breeding capacity of soil (FAO, Terrastat).

Soil and rock formations in Malta are associated with another problem identified as shallowness of the soil. These kinds of soils (brown and red silty soils) have medium to low productivity. To complicated even further matters for the fragile soil configuration of Malta the shallowness of soil has led to a fast track way to serious land degradation, i.e. soil erosion mentioned above. This shallowness is a major limiting factor to the productive sustainability of the available agricultural land. This important topic for Mediterranean agricultural economies was examined in a major study by CIHEAM (Centre International des Hautes Agronomiques Mediterranéennes).

2.2 – Water resource constraints

In Malta water resources are very fragile asset but worth preserving to serve the Island state's needs. Despite the relatively low rainfall and the arid appearance of the Maltese Islands, local catchment's characteristics are very favorable for the storage of surface water and the hydrological cycle provides a generous supply of fresh water. Total surface water resources are estimated at 0.5 million m^3/year, which is an obvious poor contestant to groundwater resources potential at 40 million m^3/year. The source of all groundwater

in Malta is precipitation on the Islands. In the long run, water abstraction from underground aquifers cannot be larger than the amount recharged through rainfall infiltrated into them. Average annual rainfall on the territory is 550 mm per year, however with inter-annual variations ranging from 200 mm to 1000 mm. It is estimated that, over the long term, the part of rainfall that infiltrates into the underground and recharges groundwater is about 32% with variations from 'wet' to 'dry' years. In a wet year, up to 280 mm of rainfall may recharge groundwater, while in a dry year recharge may be as low as 56 mm (16 million m^3). Average amount of renewable groundwater per inhabitant is estimated at 40 m^3 per year (FAO, Land and Water Development Division).

Groundwater resources in Malta are contained in a number of aquifers. By far the largest underground water storage capacity, yielding about 80% of groundwater extracted in the country, is provided by the sea level aquifers of the Islands of Malta and Gozo. The body of freshwater stored in aquifers of this type tends to have the form of a lens that floats on denser saltwater. Even here though serious constraints to the access and use of such water bodies persist for Malta. These freshwater bodies are fragile structures that require careful management. In practice, boreholes sunk into the sea-level aquifers outside of technical control and water extraction without regard for sustainability of the resource has resulted (FAO, Aquastat).

Even if groundwater is accessed, additional water constraints in Malta persist in the form of quality. Leading indicators of groundwater quality are: overall content of salts, nitrate content and pathogens. Contaminants have been found in many sources of previously clean water and while the situation varies from one site to another, it is clear that the overall water quality situation in Malta has deteriorated in recent years. The combination of pollution and saline intrusion results in rising cost of water treatment.

To restore such aquifers requires a long time for the natural hydrochemistry to be re-established and it is generally uneconomic to undertake aquifer remediation. Groundwater contamination is impacting the islands water economy and a policy to curb such contamination is required to avoid incurring in further water treatment costs (Margat and Vallée, 1999).

Malta has a classic problem of a small island state with limited rainfall whose main preoccupation is to create complementary solutions in gathering, storing and maintaining the limited water it manages to get. In this case, opportunities for capturing and storing rainfall water in cisterns and reservoirs need to be realized. Some years have low rainfall and it is therefore important to secure carryover of water from wet years into dry years through storing prudent reserves.

Recycling wastewater is another popular method followed in Malta through which water needs are partially met. The primary aim of recycling wastewater is to prevent the adverse impact of releasing raw wastewater into the environment. In Malta, only about 12% of wastewater is currently recycled. In the context of European directives, it is foreseen to install new wastewater treatment plants for recycling all domestic wastewater by 2007, thus ensuring protection from wastewater contamination to the terrestrial and

coastal marine environment. The only presently existing major wastewater recycling plant operates with problems caused by the high salinity of the wastewater treated. As a consequence, the recycled water is at times critically saline and its further use in agriculture subject to constraints. A policy of protection of wastewater from contamination with salts and chemicals, followed by recycling of such good quality wastewater, can provide as a bonus a significant source of water adequate for certain agricultural and industrial activities for enhancement of the rural and urban environment and, under certain conditions, for recharging aquifers. The window of opportunity opened by wastewater recycling should be used to establish the islands' water management on a sounder basis (Malta Resources Authority).

Overall, Malta is facing nowadays threats and constraints to its integrity of sustainability of water resources. A national policy is needed in Malta in order to better streamline its efforts on one of its most precious resources, that of its water resources. This national policy should consciously pursue the following purposes: prevent further deterioration of water bodies and improve their status in relation with their function and use, promote sustainable water used based on long-term protection of available water resources, protect and improve the aquatic environment, including coastal waters and groundwater, ensure progressive reduction of pollution of groundwater and prevent its further pollution and contribute to mitigation of effects of floods and droughts. The above comprehensive schedule of aims will contribute to the provision of a supply of good quality water as needed for sustainable, balanced and equitable water use. It will also contribute to achieving the objectives of the relevant international agreements that Malta has signed (Malta Resources Authority).

2.3 – Land and water use

The distribution of agricultural holdings by size class is shown in Appendix Table 2. At the institutional level advisory services offered on the important matter of land and water use in Malta come from the Ministry for Rural Affairs and the Environment's Agricultural Services section. Services offered include the following:

Farmers/Land Registration: All farmers and the land they cultivate are registered in records kept in this section. The farmer is issued with a Farmers Registration Card (FRC) which he will be asked to produce whenever necessary.

Assessments for Compensation for Loss of Crops: Assessments to compensate farmers for damages incurred during infrastructure works are made whenever the Department carrying out the work makes a request. These works usually consist of trenches, erection of electricity poles, road widening and such developments.

Soil Preservation: This Section is responsible to safeguard against illegal dumping and rendering soil infertile, according to the preservation of the 1973 Fertile Soil Act.

Land Reclamation: This Section of the Department caters for the clearing and storing of fertile soil and even supplying farmers when available.

St. Vincent de Paule Fruit Tree Nursery: This nursery is the only one on the Islands accredited to produce Virus Free/Virus Tested fruit tree plants. Every year from about mid-August the booking for the sale, at a subsidized price of these plants are accepted. The sale of thousands of disease free fruit trees and vines are carried out in January. The main aim is to control and suppress existing fruit tree diseases and also to introduce to growers new varieties, which are more productive and extend the fruit season.

Sant' Antnin Sewage Treatment Plant: This section in the Service is also responsible for the distribution of the plants' effluent to the local farmers. It controls the distribution of water from the five main reservoirs to the channels that lead to the farmers' fields. The area covered by this system is around 300 hectares in the limits of Zejtun, Marsascala and Zabbar. An average of 6,000 to 7,000 m^3 of effluent is distributed daily.

Water withdrawal used for agricultural purposes are basically the proportion of total water withdrawals that is allocated to the agricultural sector, primarily for irrigation. All water withdrawals are allocated to one of three categories; agricultural, domestic or industrial. Overall a portion of 25% of all water withdrawals is used in Malta for agricultural purposes; a ratio rather small in comparison to other countries with small agricultural sectors. If one considers the sources from which agriculture pumps its water, groundwater withdrawals are a basic source at 23.8 million m^3. Maltese agriculture uses also part of the desalinated water production of Malta (Ministry for Rural Affairs and the Environment - Agricultural Services and Rural Development).

3 – Performance of the Agricultural Sector

3.1 – Introduction

As Malta was entering its accession negotiations with the EU, it had protected up to that point in time, its agricultural sector through a policy based on keeping out competition, particularly in the form of border levies on imported goods. This protected local agriculture by making it difficult for imported products to compete and at times, even to penetrate the market. In practice though, the sector has been facing decline in several of its performance indices and even in its farming population. Yet Malta, cannot afford to entirely relinquish its agricultural sector. Not just because of the welfare of the (small) farming community of the country but also because agriculture has other roles in Malta, including the maintenance and enhancement of Malta's fragile rural landscape. This is often referred to as the 'multi-functional role' of agriculture. Thus, the cornerstones of its policies in how the agricultural sector performs have been the need to secure an acceptable level of income for farmers and at the same and to continue to promote and support agriculture's multi-functional role in the overall Maltese economy.

The two agricultural sub sectors (livestock and crop) in Malta are almost equally important sharing between them the market at 49% and 51% respectively (EUROSTAT). When we look at the sector's constraints in brief, we will understand also how it has performed and how it is bound to perform in the future. Some of the sectors´ main figures are described below:

- Declining farming population (1.7% of employment),
- Sector is not yet sufficiently organized,
- Local produce constitutes less than a third of local food requirements,
- Small fields, small farms,
- Intensive farming with significant soil erosion and general degradation incident,
- Potatoes are the only bona fide and significant agricultural export,
- Hot climate is mainly a constraint as it dictates a very short list of cultivable products,
- Water shortage and intensifying water salinity a drain on the overall water calculus of the Maltese economy.

Malta is self-sufficient in fresh vegetables, processed tomatoes, eggs and poultry, pork and fresh milk and fresh milk products. It has a low self-sufficiency rate (SSR) in wine grapes, fresh fruits, mutton, lamb and beef. It is not a producer of cereals (except for fodder), sugar, hops, rice, butter and milk powder. The only significant export in agriculture is spring crop potatoes in the tune of about 8,000 to 10,000 tons annually. Thus, Malta's agricultural trade is thereby largely dominated by imports.

Maltese agriculture consists of a relatively large number of small-sized holdings and accounts of 2.5% of Malta's GDP and 1.5% of total employment. In 2000, agriculture provided approximately for only 27% net of Malta's food requirements.

Natural conditions, especially water shortage, water salinity and land fragmentation arising from a high population density (i.e. 1,200 persons per square kilometer which is currently eight times the EU average), are not conducive to higher rates of development. The intensive production of Maltese agriculture, resulting from the special geographical characteristics of the Islands, the natural semi-arid climatic conditions and limited natural resources, limit the production capacity of agriculture and the range of products produced.

In view of all the above, a Rural Development Program in line with the provisions of Regulation (EU) 1257/99 (support for rural development from the European Agricultural Guidance and Guarantee Fund, EAGGF) was drafted in 2002. The Program basically, provided a general framework to build, over the medium to long term, a new agricultural sector deeply integrated with the rest of the economy. The Program defined projects for the restructuring of Maltese agriculture and prepared it for its full integration in the CAP that came with Malta's full accession on May 1st, 2004. It also included projects designed to render more competitive the weaker sectors of Malta's agriculture, addressed the specificities of the Island's agricultural structure as well as provide valuable impetus to building up the required institutional capacity for the implementation of the agricultural *acquis.* The valuable element of this Program was the need of involving the participation of all stakeholders.

Malta has the benefit of being an island state and thus enjoys the benefits of a somewhat insular society but economically has the handicap of additional transport costs and import tariffs hampering its development as a competitive entity. Adding to that the fact that it has severe land and water constraints then one quickly realizes that Malta is essentially a net importer of agricultural goods. A comparison thus, of prices in the EU should be made with similar net importing states to account for the additional transport costs. For reasons of better understanding the context of agricultural trade in the EU, it would be useful to think of net importing areas like Malta as deficit regions and next exporting regions as surplus regions.

Since Malta's economy is not importantly depended on agriculture, the trade figures of the country are usually negative. In 2003, the agricultural total imports were US$ 318.4 million and the total agricultural exports were US$ 15.9 million. The two agricultural sub sectors (livestock and crop) are almost equally important sharing between them the market at 49% and 51% respectively (EUROSTAT).

3.2 – Products

Despite the numerous problems Malta is facing in its small agricultural sector, production of various, good quality products continue though in decreasing quantities. The advent of EU accession on May 1st, 2004 has brought home the realization of the difficult times lying ahead for inefficient producers delivering non-competitive products to the market place. On the other hand, Malta maintains a competitive edge on specific products for various reasons (i.e. price, quality, seasonality, etc) and the vast EU market will offer substantial opportunities to trade with them. Table 2 shows the production of specific

agricultural products from 1997 to 2004. In terms of volume potatoes come in the first place (23,000 tons), followed by tomatoes (10,000 tones), fresh fruits (3,500 tones), grapes (1,240 tons) and citrus (1,000 tons).

Table 2. Agricultural production of specific products in Malta (metric tons)

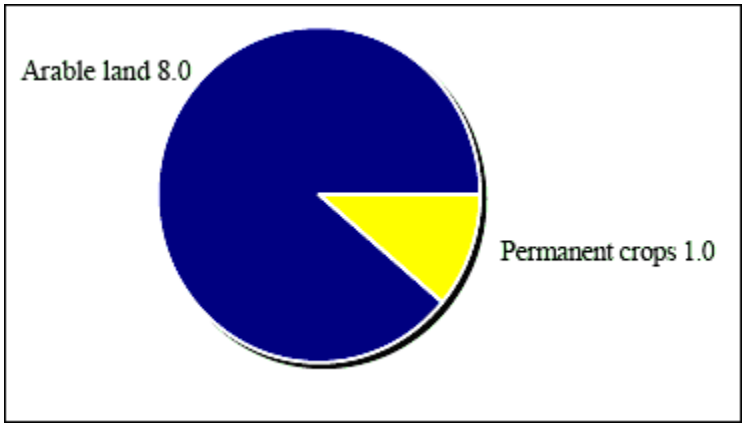
Product	1997	1998	1999	2000	2001	2002	2003	2004
Citrus	1,000	1,000	1,000	1,000	1,000	1,000	1,000	1,000
Apples	300	111	87	66	55	33	12	15
Stone Fruit	500	500	300	300	300	300	300	300
Berries	250	250	250	250	250	250	250	250
Grapes	5,500	2,021	1,750	1,306	1,315	1,208	1,236	1,240
Figs	350	342	567	549	196	192	251	250
Fresh Fruits	6,800	6,800	4,000	3,500	3,500	3,500	3,500	3,500
Tomatoes	20,854	21,555	21,763	20,738	20,459	10,952	14,333	9,000
Potatoes	20,493	36,117	36,274	34,969	25,339	27,536	22,395	23,000

Source: FAOSTAT

As mentioned above livestock and its by-products have almost 50% of the market with the main share held by cow milk, followed by pig meat for local consumption. A product that rises in importance is indigenous chicken meat.

In terms of crop production the most important crops are tomatoes and potatoes sharing between them almost 30% of the total crop production value. Another product that has a significant percentage in crop production is melons. Most of Malta's agricultural area is arable land (8,000 ha) and a fraction of it (1,000 ha) is cultivated with permanent crops (Figure 1).

Figure 1. Land use (1,000 Ha)

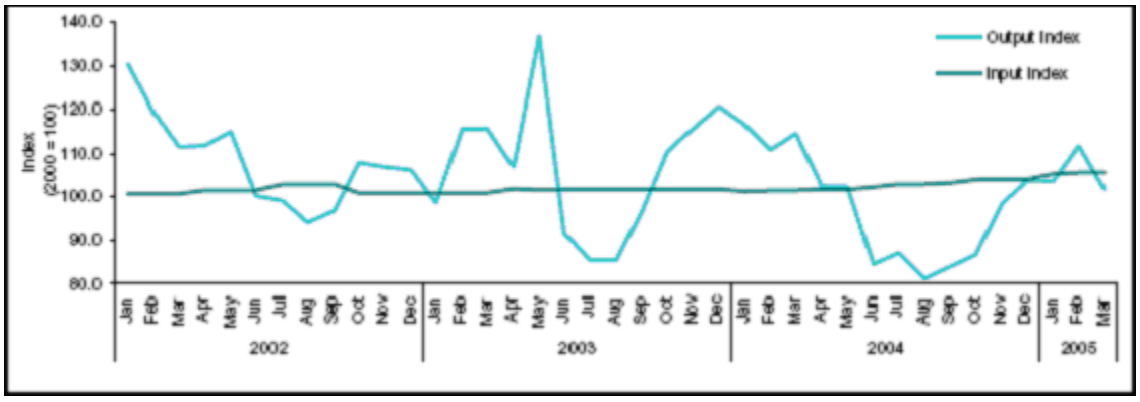


Source: FAOSTAT, 1999

3.3 – Intermediate inputs

Latest developments caused a serious increase in oil prices worldwide. This in its turn caused a serious rise in prices of many inputs such as plastic, lubricants, electricity, fertilizers, etc. These increases caused a climb in agricultural products' prices and thus a higher cost of living. Due to these changes the agricultural input value has a slight but constant increase from 2000 and on (National Statistics Office). Despite the increase in input goods prices, producer prices, and therefore farm income, decreased (Figure 2).

Figure 2. Producer price and input price index for agriculture (2002-2005)



Source: National Statistics Office

One of the most important agricultural inputs in Malta is fertilizers. All of the fertilizers used (700 metric tones) amounted to US$ 162,000 are imported. Another important input in agriculture is pesticides (including herbicides and other). Table 3 shows the agricultural intermediate inputs of Malta from 1994 to 2001. In terms of agricultural necessities Malta imports goods that amount US$ 3.6 million and exports goods that amount US$ 780 thousand (FAO) (Table 4).

Table 3. Agricultural intermediate inputs (000s metric tons)

Year	Nitrogenous	Phosphate	Potassium	Inorganic	Total Fertilizers	Fungicides/ Bactericides	Insecticides
1994	1,000	0	0	292	1,000	337	104
1995	1,000	0	0	118	1,000	157	47
1996	1,000	0	0	95	1,000	132	13
1997	1,000	0	0	163	1,000	196	52
1998	1,159	170	131	146	1,499	198	43
1999	451	131	131	80	713	89	39
2000	450	150	200	104	750	128	47
2001	300	200	200	50	700	68	23

Source: FAOSTAT

Table 4. Agricultural requisites trade

Agricultural Requisites		Year		
Imports - Val (1000$)	2000	2001	2002	2003
	5,038	4,496	1,270	3,628
Agricultural Requisites		Year		
Exports - Val (1000$)	2000	2001	2002	2003
	920	683	740	780

Source: FAOSTAT

3.4 - Machinery and equipment

Despite its size and agricultural area, Malta has a rather large number of agricultural machinery per hectare. This is one of the important factors that affect the agricultural goods' prices and also the agricultural input's value. These costs are the machineries' costs themselves, their repair and renewal costs combined, as well as their fuel consumption. FAO data show that Malta had a serious increase of total agricultural equipment in the last few years. There are currently in use: 359 harvesters/threshers, 359 milking machines and 500 agricultural tractors for a total area of 10,000 ha (Table 5.).

Table 5. Machinery equipment in use

Year	Arable Land (1000Ha)	Tractors	ha per Tractor	Harvesters-Threshers	Milking Machines
1994	12	450	26.7	15	177
1995	10	510	19.6	20	110
1996	10	496	20.2	22	210
1997	9	496	18.1	23	230
1998	8	496	16.1	24	250
1999	8	496	16.1	25	270
2000	8	496	16.1	26	300
2001	9	496	18.1	27	320
2002	9	500	18.0	359	359

Source: FAOSTAT

3.5 – Water use

As aforementioned, Malta has a low rainfall throughout the year and, therefore, the country was forced to find other ways to supply water to its people. Malta has several stations for water treatment, including wastewater treatment and desalination plans. Farmers also have built or dug small reservoirs in the rock to collect rainwater in order to use it as supplementary irrigation. Recently, several reservoirs (some with financial assistance from the government) with capacities of 100 – 2,000 m^3 were constructed for irrigation in spring or early summer. Though this water collection may seem

insignificant, it is in fact a very important supplementary source of water for the country's agriculture.

The Malta Resources Authority (MRA) is a public corporate body with regulatory responsibility on water, energy and mineral resources in the Maltese Islands. It was set up by the Government through the Malta Resources Authority Act of 2000. The MRA is responsible for the regulation of water and energy utilities. However, the local Ministry of Rural Affairs and the Environment is the governmental body that is responsible for agricultural matters and the role of the MRA is rather limited in the agricultural sector. Land and groundwater resources are stretched beyond limits and competition from other sectors is quite intense. Furthermore, saline intrusion to its water deposits is an ever-present threat but opportunities to relax some key aquifers do not appear to exist. Economic returns to water are marginal in agriculture but rural lifestyles are important and production systems are still not EU compliant in Maltese agriculture. The benefits of a more focused policy on management of water resources are worthwhile. Reducing wastes in agriculture as a technical option will propel water use efficiency to new levels since surface irrigation is only 30-50% efficient, the use of sprinklers is 50-75% efficient, while the use of localized drip systems is 85-95% efficient (Malta Resources Authority).

3.6 – Labor force and employment in agriculture

Since Malta's economy is not heavily depended on agriculture, it is observed that the agricultural population is declining constantly in the last few years (Appendix Table 3 and 4). From data shown by the Maltese Ministry of Agriculture, the total number of people employed in agriculture hardly reaches 1% of the country's total labor force. Table 6 shows the Maltese agricultural labor force for the year 2001. According to Table 3, the vast majority of farmers (almost 90%) are part-time employed in agriculture.

Table 6. Full time and part time agricultural force (2001)

	Male	Female	Total
Full-Time	1,405	119	1,524
Part-Time	10,757	1,832	12,589
Total	12,162	1,951	14,113
Work Force	110,866	47,346	158,212
% of Work Force	1.27	0.25	0.96

Source: Ministry of Rural Affairs and the Environment

3.7 – Prices and incomes

Oil price climb caused a dramatic increase in agricultural inputs prices. Strangely enough this did not result in respective increase in agricultural output prices (at least in producer prices standards). During the last few years many of producer prices decreased or remained in the same levels as in previous years. Despite these facts, consumer prices increased as oil prices rose. By analyzing these numbers it can be observed that farmers suffer from income losses and that this is responsible, among other factors, for the agricultural population decrease. Table 7 and Appendix Table 6 indicate that potatoes

suffered the highest decrease in producer prices between 2004 and 2005 (- 46%), followed by fresh vegetables (- 12%) and animal products (- 7%).

Table 7. Producer price index for agriculture by type of product - annual and monthly changes

Item	Annual change			
	Mar 2004	Mar 2005	Points change	% change
Potatoes	173.30	93.61	-79.69	-45.98
Fresh Vegetables	135.72	119.44	-16.29	-12.00
Fresh Fruit	131.93	131.67	-0.26	-0.20
Animals	90.97	91.97	0.99	1.09
Animals Products	103.34	96.07	-7.27	-7.03
Item	**Monthly change**			
	Feb 2005	Mar 2005	Points change	% change
Potatoes	90.46	93.61	3.15	3.49
Fresh Vegetables	158.61	119.44	-39.17	-24.70
Fresh Fruit	118.15	131.67	13.52	11.44
Animals	91.81	91.97	0.16	0.17
Animals Products	98.56	96.07	-2.48	-2.52

Source: National Statistics Office

4 – Upstream and Downstream Sectors

4.1 – Upstream sectors

Agricultural economics throughout the world are heavily depended in agricultural input products. Every year the value of this sector's trade amounts to several millions Euros both imported and exported. The upstream sector in Malta is the range of entities in the local industry that supply inputs to agriculture. Even though Malta manufactures a small fraction of what is needed for agricultural production, the upstream sector is a considerable player in the economy with its own additional linkages in the economy thus adding meaning to the incident of ripple effect should changes occasionally take place in the sector. A small change in the overall configuration and/or in ordering and delivering such inputs tends to reverberate throughout most of the economy.

These linkages are established through the provision of inputs to the agricultural sector (i.e. fertilizer production and consumption, pesticides, seeds etc). These are not an exhaustive list but rather an indication of the basic inputs that then break into groups and subgroups. For example, Malta exports the bigger part of its potato production. The material needed to pack these potatoes is also considered to be an input of the upstream sector along with the tapes, stickers, etc.

The linkages are innumerable and their overall impact substantial for additional reasons as well; the small Maltese Island economy imports virtually most of inputs it uses. This is one partial reason for the high prices of these inputs. Another reason is the simple fact that a handful of importers and agents control the supply that is of such small magnitude that heft profit margins must be levied in order that the actual trade makes any sense.

Malta is mainly a heavy agricultural inputs importer. Agricultural requisites' imports in 2003 amounted to US$ 3.6 million whereas exports of the same sector amounted to US$ 780 thousand (Table 2). A major part of the imported agricultural inputs is pesticides. In 2003, imports amounted to US$ 2.2 million where exports to only US$ 653 thousand (Malta Business Bureau).

According to Table 8, the input price index for goods and services consumed in agriculture recorded a yearly increase of 4.13% in 2005, while the input price index for machinery and investment remained rather stable. Table 9 shows that although the input price index increased by 4.06%, the output price index was reduced by 11.14%, resulting in further decline of farm incomes.

Table 8. Input price index for agriculture by type of product - annual and monthly changes

Item	Annual change			
	Mar 2004	Mar 2005	Points change	% change
Goods and services consumed in agriculture	101.71	105.91	4.20	4.13
Machinery and Investment	94.33	94.23	-0.10	-0.11
Item	**Monthly change**			
	Feb 2005	Mar 2005	Points change	% change
Goods and services consumed in agriculture	105.88	105.91	0.03	0.03
Machinery and Investment	94.23	94.23	0.00	0.00

Source: National Statistics Office

Table 9. Price indices for agriculture - annual and monthly changes

Item	Annual change			
	Mar 2004	Mar 2005	Points change	% change
Output Price Index	114.70	101.92	-12.78	-11.14
Input Price Index	101.61	105.74	4.13	4.06
Item	**Monthly change**			
	Feb 2005	Mar 2005	Points change	% change
Output Price Index	111.87	101.92	-9.95	-8.89
Input Price Index	105.71	105.74	0.03	0.03

Source: National Statistics Office

4.2 – Food processing sectors

One of the most important crops in Malta is tomato, largely owing to the presence of the processing industry that produces tomato products. In this sector, negotiations with the EU focused both on the tomato-growing farmers as well as on the processing industry itself. On tomato processing, Malta requested derogation from EU rules on the content of tomato products, particularly with respect to Malta's traditional tomato paste, known as *Kunserva.* The EU accepted this request and *Kunserva* was included in the EU regime. This means that tomato growers will still qualify for financial assistance when they produce tomatoes for the production of *Kunserva*. Malta agreed with the EU to remove all levies by membership and introduce instead compensatory measures for the tomatoes

(for processing) sector. The compensation will total 31.16 million Euros over a period stretching until 2014.

4.3 – Food consumption

Food consumption patterns in Malta are typical of those found in a Mediterranean country. Table 10 shows that Maltese people are consuming a diet composed of 35% of wheat and products, 14% sugar and products, and 9% milk and products.

Table 10. Food consumption

Food Consumption 2000-2002 (major items) (Share of total Dietary Energy Supply)	
Wheat and products	35%
Sugar and products	14%
Milk and products (excl. butter)	9%

Source: ESSA

The Food and Agriculture Organization (FAO) offers valuable service by gathering data on food consumption on what it calls the Food Balance Sheet for most countries in the world. On Malta, the data are revealing in terms of what is supplied and what it is consumed domestically. The consumption of cereals, potatoes, vegetables and fruits in terms of overall food utilization in thousand tons per annum are shown in Table 11.

Table 11. Food Balance Sheet (Malta Averages 1993-2002)

Products	Food domestically used (000 metric tons)
Cereals	63
Potatoes	30
Vegetables	56
Tomatoes	19
Fruits	37
Oranges	7

Source: FAOSTAT

An index to go beyond the standard practice of food consumption in caloric units as with FAO and other international agencies, it is of real value to look at the percentage of total household consumption expenditure on food in the EU-25. 'Food' here refers to food and non-alcoholic expenditure. Malta is the surprising fifth highest indicating that food expenditure and consumption is generally prevalent in the population's budget and food prices are high compared to the local household budget, which is a natural result of a small non-producing and heavily importing island economy (Table 12).

Table 12. Household Consumption Expenditure in the EU-25 in 2002* (% of total income on food and non-alcoholic drinks)

Ranking	Country	% Spent
1	UK	9.7
2	Ireland	10.7
3	Netherlands	11.2
4	Austria	12.1
5	Germany	12.1
6	Denmark	12.6
7	Sweden	12.6
8	Finland	12.8
9	Belgium	13.6
10	France	14.5
11	Italy	14.6
12	Greece	15.8
13	Spain	15.9
14	Slovenia	17.2
15	Portugal	18.8
16	Czech Republic	18.8
17	Hungary	19.4
18	Cyprus	19.6
19	Poland	19.9
20	**Malta**	**20.4**
21	Slovakia	22.1
22	Estonia	22.9
23	Latvia	25.5
24	Lithuania	31.3
	EU -15	12.8
	EU -25	13.2

*Obviously, EU of 25 did not exist in 2002 but extrapolating figures provide a good estimate. Actually, real and current figures would be a bit higher as the abrogation of all import restrictions would most probably reduce food prices and increase consumption in relative terms.

Source: Eurostat

5 – Trade in Agri-Food Products

5.1 – Structure of trade in agri-food products

As already mentioned, agriculture faces severe constraints in Malta, including acute water shortages, extreme land fragmentation and limited investment and research. Employment in agriculture and fisheries is 1.6% of the total and generally on a declining trend, although part-time employment remains quite important. Malta's agriculture is skewed towards meat and dairy farming, resulting in high rates of self-sufficiency in pigment, poultry and eggs.

Imports of frozen/chilled beef, cheese, cereals and fruits are required to supplement limited domestic supplies. Malta's principal vegetables are early potatoes, tomatoes and onions. Fish farming is growing in importance, as over fishing and pollution in the Mediterranean Sea have affected the industry negatively. The total production from fish farms has grown to over 2,200 tons, which is mainly exported to Italy and Japan. This is well over double the 908 tons from wild fisheries. Malta's main fish exports are sea bass and sea bream (from fish farms) and tuna. In order to prevent the further depletion of stocks and protect the domestic fishing industry, Malta has secured derogation from EU rules, which will allow it to maintain a fisheries conservation zone of 25 nautical miles. Table 13 shows the main imports and exports of Malta from 1999 to 2004 (FAO - Compendium of food and agriculture indicators).

Furthermore, as shown in Table 14, the trade balance for agricultural products in Malta was in deficit from 1999 to 2002. In 1999 the deficit was 232.7 million US$ and declined for the next two years (i.e. in 2000 and 2001 the deficit was 199.5 and 193.5 million US$ respectively). However, in 2002 the deficit increased again to 209.8 million US$. Furthermore, Appendix Table 7 and Appendix Table 8 show the trade of agricultural products with different countries of the world.

5.2 – Trade performance of agri-food products

Table 14 shows the trade of major agricultural and food items for Malta from 1979 to 2002. In 2002, Malta imported 74.3 thousand tons of wheat and products and exported only 1.1 thousand tons of the same products. The same trends are true for the sugar and milk and products (large amounts of imports and very small amounts for export). Malta does not export any meat and products or chicken. Also, the import of meat and products is limited, and there is no import of chicken meat.

Overall, Malta presents negative trade balance in wheat and products (- 73,2%), in milk and milk products (- 58,1%) and sugar and products (- 28.5%).

Table 13. Main imports and exports of Agricultural products

	1999	2000	2001	2002	1999	2000	2001	2002
	1000 MT				MLN US$			
Trade Balance								
Agricultural Products					**- 232.7**	**- 199.5**	**- 193.5**	**- 209.8**
Total Merchandise					- 862.0	- 955.0	- 765.5	- 708.0
IMPORTS								
Total Merchandise Trade					**2 840.0**	**3 392.0**	**2 722.1**	**2 839.0**
Agricult.Products,Total					**288.6**	**254.4**	**233.1**	**298.8**
Cigarettes	0.4	0.3	0.0	0.7	7.7	7.2	0.0	17.5
Chocolate products NES	2.8	3.4	3.4	3.7	14.8	15.6	15.2	17.1
Food preparations NES	...	...	...	...	14.5	13.9	13.8	16.8
Beef and veal, boneless	5.7	5.4	2.7	5.2	16.5	15.2	8.2	15.6
Cheese (from whole cow milk)	4.4	4.7	4.6	4.7	15.7	14.9	14.7	15.1
Pastry	3.1	3.7	3.7	3.1	12.8	13.6	12.4	10.5
Wheat	52.1	58.0	38.8	55.9	7.6	8.4	5.9	8.9
Beverages, dist. alcoholic	1.7	1.5	0.1	1.8	8.8	7.6	0.2	8.7
Tobacco products NES	1.0	1.1	1.2	0.6	12.4	13.2	16.2	8.6
Maize	62.5	73.1	69.6	56.0	6.8	8.1	7.9	6.4
EXPORTS								
Total Merchandise Trade					**1 978.0**	**2 437.0**	**1 956.6**	**2 131.0**
Agricult.Products,Total					**55.9**	**54.9**	**39.6**	**89.0**
Food preparations NES	...	...	...	...	25.9	26.8	28.0	37.1
Cigarettes	0.4	0.7	0.0	0.9	13.0	16.0	0.0	29.3
Beverages, dist. alcoholic	0.5	0.5	0.0	0.5	4.9	4.2	0.0	6.3
Chocolate products NES	0.1	0.0	0.7	1.0	0.4	0.2	3.2	4.6
Potatoes	7.1	0.0	2.2	6.3	2.8	0.0	1.1	2.2
Beverages, non-alcoholic	0.0	0.1	0.1	0.3	0.9	1.0	0.8	1.4
Tobacco products NES	0.0	0.0	0.0	0.0	0.3	0.3	0.3	1.2
Pastry	0.6	0.7	0.7	0.7	1.0	1.1	1.1	1.1
Wine	0.1	0.1	0.1	0.1	0.5	0.5	0.7	0.8
Mixes and doughs	0.7	0.7	0.6	0.7	0.8	0.8	0.7	0.7

Source: ESSA

Table 14. Trade of major agricultural and food items

	1979-1981	1989-1991	1999	2000	2001	2002
			(1000 MT)			
Wheat and products						
Import	44.5	48.1	68.1	75.3	56.5	74.3
Export	0.3	0.8	0.9	1.0	1.1	1.1
Net trade (Exports-Imports)	- 44.2	- 47.4	- 67.2	- 74.3	- 55.4	- 73.2
Sugar and products (raw eq.)						
Import	16.2	21.9	24.6	23.8	26.2	28.7
Export	0.0	0.0	0.0	0.0	0.1	0.3
Net trade (Exports-Imports)	- 16.2	- 21.9	- 24.6	- 23.8	- 26.1	- 28.5
Milk and products (excl. butter)						
Import	48.2	53.7	52.0	58.7	55.5	58.4
Export	1.2	0.5	0.5	0.5	1.7	0.3
Net trade (Exports-Imports)	- 46.9	- 53.1	- 51.6	- 58.2	- 53.8	- 58.1
Meat and products, pig						
Import	5.1	2.7	3.0	3.1	3.8	2.9
Export	0.0	0.0	0.0	0.0	0.0	0.0
Net trade (Exports-Imports)	- 5.1	- 2.7	- 3.0	- 3.1	- 3.8	- 2.9
Chicken meat						
Import	0.6	0.0	0.1	0.1	0.1	0.1
Export	0.0	0.0	0.0	0.0	0.0	0.0
Net trade (Exports-Imports)	- 0.6	0.0	- 0.1	- 0.1	- 0.1	- 0.1

Source: ESSA

Going beyond EU relations though it is also useful to state the obvious trading practices of Malta with the rest of the world in agricultural products. The following tables present a glance at that trade for further analysis in terms of an index (Table 15) and financial flows (Table16) allowing the extraction of useful conclusions on the actual structure of Malta's import trade.

Table 15. Agricultural Products – Total Import Value (Index) for Malta

Year	Index Score
1994	75
1995	102
1996	114
1997	113
1998	115
1999	111
2000	98
2001	91
2002	114
2003	117

Source: FAOSTAT

Table 16. Agricultural Products – Total Imports Value (1000$)

Year	Value
1994	194,830
1995	261,857
1996	287,208
1997	290,063
1998	295,221
1999	288,595
2000	254,413
2001	233,057
2002	298,800
2003	318,416

Source: FAOSTAT

Observing the course of data between the two tables above we notice that the index exhibits on a regular basis exacerbated volatility as it relates to the data of Table 16. From 1994 to 1995 the index jumped from 75 to 102 (45%) and the value increased from $194,830 to $261,857 (43%). The two relations demonstrate the lack of any exogenous variables affecting the state of affairs. Even in 1999 when the index was 111 and then in 2000 a substantial drop to 98 (11.71%), the calculations show a perfect symmetry between the index of imports and the value of imports in US$. Measuring value flows of imports, the drop was also in proportion; US$ 288,595 to US$ 254,413 thus demonstrating that the strong Maltese lira did not create unnecessary distortions to trade.

5.3 – Trade performance: fruits, vegetable and olive oil

The production of potatoes is an important agricultural activity in Malta. About 1,000 farmers, mainly part-time farmers, are involved in this activity. The total area cultivated is about 1,800 hectares and the total production is estimated to be 35,000 tones.

The certified disease-free seed potatoes of the yellow-fleshed varieties (Alpha, Santé, Berber, Ditta, Arinda) are imported from Holland whereas the seed potatoes of the white-fleshed varieties (Cara, Avondale, Slaney) are imported from Ireland.

In the period mid-March to Mid-May about 6,000-7,000 tones of potatoes are exported to countries of the European Union, mainly to Holland. The spring-crop potatoes from Malta are very appreciated in particular on the Dutch market. The Malta potatoes achieve premium and distinct prices from the produce of other European countries. In fact Malta potatoes are often referred to in the trade journals as the "Maltas". The Dutch consumers, especially those having the traditional eating habits, have acquired a preference for Maltese produce for which they are ready to pay high prices.

The leading supermarkets in Europe are insisting that they will only trade fresh fruits, vegetables and potatoes that are EUREPGAP Certified. The suppliers of fruit, vegetables and potatoes need to abide by the standards of Good Agricultural Practice. The Ministry of Agriculture and Fisheries has taken action to comply with EUREPGAP Standards for the development of Good Agricultural Practices in the production of potatoes and eventually other crops intended for the export market. It is therefore the duty of the Ministry of Agriculture and Fisheries to ensure that farmers growing potatoes for export are trained to be compliant with the EUREPGAP Protocol. All growers should be able to demonstrate their commitment to: maintaining consumer confidence in food quality and safety; minimizing detrimental impact on the environment; reducing the use of agro-chemicals; improving the efficiency of the use of natural resources; and ensuring a responsible attitude towards worker health and safety (Ministry for Rural Affairs and the Environment - Agricultural Services and Rural Development).

6 – International Competitiveness of the Mediterranean Fruits, Vegetables and Olive Oil Sectors

Agriculture in Malta never really received a comprehensive treatment and thus it was never a source of foreign exchange. On the contrary, Malta is a net importer of most agriculture-based products with a declining farm population. Furthermore, the agricultural sector is not yet sufficiently organized, local production is less than a third of total food requirements, small fields and small farms do not allow the generation of any kind of economies of scale, and there is an acute and permanent water shortage and water salinity. Consequently, the volume of agricultural products that Malta exports is very small.

The Domestic Resource Cost (DRC) is basically a measure of comparison of a country to produce a specific product with a cost advantage over others producing the same product in a different territory. It essentially compares a good's real opportunity cost with its aggregated value at international prices and constitutes thus an excellent tool of international competitiveness. The DRC of a specific product is obtained by dividing the cost of domestic factors of production (plus other considerations) by the value added in social prices. It is thus, a measure of efficiency or comparative advantage emanating through a core competence. Calculating the international competitiveness DRC for any of Malta's products would be of small or no significance, and therefore, these calculations are not included in this report.

7 – Policy Outlook

Despite the low income that the sector contributes to the country's economy, agriculture has always been of great importance in maintaining the cultural landscape of the Maltese islands. As a result both Malta and the EU have vested interests in supporting the sector in order to secure an acceptable level of income for the local farmers and to sustain and even increase agro-tourism in the coming years.

The most important challenge for Malta is to meet CAP provisions ensuring at the same time that all means provided by the EU to agriculture are well managed and monitored. In this respect, inclusion of Malta in objective 1 region will increase the possibility to maintain its rural areas in a sustainable manner, a strategic goal that complies with the needs of the Maltese society.

In the short-term, agricultural policies in Malta would try to limit soil erosion, limit environmental degradation, increase the level of environmental awareness and responsibility amongst farmers, and reduce the rate of decline in the number of full-time farmers.

The medium-term goals for the Maltese agriculture are to reduce the loss of agricultural land use, develop multifunctional agricultural activities, increase competitiveness through niche agricultural strategy for quality products (i.e. EUREPGAP certified potatoes), maintain the cultural landscape to generate positive externalities, and limit the negative impacts on local quality of life and tourism. The significance of agriculture to Malta is neither its economic or employment contribution, but rather its significance in maintaining the landscape, which has a secondary economic impact through tourism and maintaining a cultural tradition.

Overall, Malta's agricultural exports potential is considered very limited. It is expected therefore, that the country's priority will continue to be the coverage of its self-consumption needs as well as the support of the local tourism industry. Exception to this trend will be the production and exports of raw and processed tomatoes for which Malta has managed to secure a favor support in the frame of its EU accession.

8 – Conclusion

Agriculture in the Maltese Islands exists on a small scale due to the islands' size. Despite the low income that the sector contributes to the country's economy agriculture has always been of great importance.

Balanced economic development has for some years been suggested as the best model for the Islands' economic structure. Policy designs recognize that healthy growth needs to evolve the right balance between agriculture, industry, and services as economic activity expands and real incomes rise.

Economic policy in Malta has always contributed high importance to food. For Malta high quality food, produced locally, enhances the tourist potential of the Islands as a particular venue. In addition, there are the multiple occupations of agriculture that emerge from the multifunctional character of land and agricultural activity. The Islands are potentially self-sufficient in fresh vegetables, eggs, poultry, rabbit meat, pork and fresh milk. Agricultural exports stand at around Lm 1.5 million, representing 2.6% of total agricultural output.

Despite Malta not having direct support schemes for its farmers the agriculture sector benefits from high protection through a system of import charges applying to certain products and high transport costs. Malta is committed in principle to dismantling these charges but no progress can be reported so far. Taxes on imported agricultural products act as an indirect support scheme since they allow high prices to be maintained on the Maltese market for local products thus insuring high income for the local farmers.

Increased input costs, drought Mediterranean climate and small and fragmented agricultural plots, hamper the achievement of economies of scale. On the other hand, prices of agricultural commodities are decreasing deteriorating further the already low agricultural income, imposing environment threats to the abandoned land.

Due to the limited export potential of agricultural products of Malta, it is expected that the country's priority will be the coverage of its self-consumption needs as well as the support of the local tourism industry in a sustainable and environmentally friendly process.

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Appendix

Appendix Table 1. Malta's general indicators

INDICATORS	UNIT	1979-1981	1989-1991	1999	2000	2001	2002
Population & Agricultural Labour Force							
Population	1000	324	360	387	389	391	393
Population annual growth	percent	1.4	0.9	0.5	0.5	0.5	0.4
Rural / Total Population	percent	17	12	9	9	9	9
Density	Inh/ sq km	1 013	1 126	1 210	1 216	1 222	1 227
Agricultural Labour Force	1000	9	4	3	2	2	2
Agricultural Labour Force/Total Labour Force	percent	8	3	2	2	2	2
Land Use							
Total Land	1000 HA	32	32	32	32	32	32
Arable Land + Permanents Crops	1000 HA	13	13	9	9	10	10
Arable Land	1000 HA	12	12	8	8	9	9
Irrigated Land	1000 HA	1	1	2	2	2	2
Agricultural Production - Major Items							
Cow milk, whole (fresh)	1000 MT	29	24	49	48	47	44
Indigenous pig meat	1000 MT	0	8	10	9	10	10
Indigenous chicken meat	1000 MT	5	4	5	6	7	7
Food Production							
Food Production Index	1999-01= 100	67	81	100	99	98	97
Per caput Food Production Index	1999-01= 100	81	87	100	99	97	96
Foreign Trade - Exports							
Total	MLN US$	452.4	1 076.9	1 978.0	2 437.0	1 956.6	2 131.0
Agricultural	MLN US$	30.2	34.5	55.9	54.9	39.6	89.0
Major Exports (share in Agriculture)							
Food preparations NES	percent	13.1	23.7	46.3	48.8	70.9	41.7
Cigarettes	percent	17.3	16.7	23.3	29.1	0.0	33.0
Beverages, dist. alcoholic	percent	4.4	13.4	8.7	7.6	0.0	7.1
Foreign Trade - Imports							
Total	MLN US$	850.1	1 852.6	2 840.0	3 392.0	2 722.1	2 839.0
Agricultural	MLN US$	161.5	189.8	288.6	254.4	233.1	298.8
Major Imports (share in Agriculture)							
Cigarettes	percent	0.8	1.2	2.7	2.8	0.0	5.9
Chocolate products NES	percent	0.7	3.3	5.1	6.1	6.5	5.7
Food preparations NES	percent	3.0	4.4	5.0	5.5	5.9	5.6
Agriculture trade balance							
Exports-Imports	MLN US$	- 131.2	- 155.2	- 232.7	- 199.5	- 193.5	- 209.8
Lands & Inputs							
Total Population/Arable Land	Inh /HA	26	30	48	49	43	44
Fertilizer Use/Arable Land	kg nutrs./HA	68	55	89	94	78	78
Tractors/Arable Land	no / 1000 HA	33.5	37.4	62.0	62.0	55.1	55.6
Food Supply		1979-1981	1989-1991	2000-2002			
Per caput Dietary Energy Supply	kcal/day	3 280	3 260	3 540			
Per caput Dietary Protein Supply	g / day	102	101	115			

INDICATORS	UNIT	2002	INDICATORS	UNIT	1990-2002
Gross Domestic Product (GDP)	MLN US$	3 870	Annual growth rate:		
Agricultural GDP as share of total GDP	percent	2.8	GDP	percent	4.4
Gross National Income per caput	US$	9 260	Agricultural GDP	percent	..

Notes: Agricultural GDP and Labour Force include Forestry & Fisheries. Agricultural production and trade refer to crop and livestock products only.

Sources: FAOSTAT; Economist Intelligence Unit - Website; World Bank - World Development Indicators, 2004

Appendix Table 2. Distribution of agricultural holdings by size class of UAA (ha) by region

Size class of UAA (ha)	Maltese Islands (ha)	%	Malta (ha)	%	Gozo and Comino (ha)	%
Total agricultural holdings	**10,987**	**100.0**	**8,599**	**100.0**	**2,388**	**100.0**
of which:						
0	**206**	1.9	198	2.3	8	0.3
>0 - <0.5	**5,080**	46.2	3,801	44.2	1,279	53.6
0.5 - <1	**2,516**	22.9	1,919	22.3	597	25.0
1 - <2	**1,767**	16.1	1,475	17.2	292	12.2
2 - <5	**1,173**	10.7	1,004	11.7	169	7.1
5 and over	**245**	2.2	202	2.3	43	1.8

Source: National Statistics Office, Malta (2003).

Appendix Table 3. Average gross annual salary for employees by economic activity in December 2003

Economic Activity	Sex				Total	
	Males		Females			
	No	Average Lm	No	Average Lm	No	Average Lm
Agriculture, hunting and forestry	1,197[u]	4619.68[u]	185[u]	3067.02[u]	1,382[u]	4411.83[u]
Fishing	64[u]	5200.00[u]	-	-	64[u]	5200.00[u]
Mining and quarrying	726[u]	5139.82[u]	79[u]	7800.00[u]	805[u]	5400.88[u]
Manufacturing	19,093	4929.08	7,354	4106.73	26,447	4700.41
Electricity, gas and water supply	3,818	5487.68	298[u]	4113.69[u]	4,116	5388.21
Construction	7,896	4427.82	309[u]	3668.03[u]	8,205	4399.21
Wholesale and retail trade, repairs of household goods and vehicles	8,212	4831.13	6,416	3846.07	14,628	4399.07
Hotels and restaurants	6,802	4888.89	4,150	3888.35	10,952	4509.76
Transport, storage and communication	7,812	6348.72	2,432	5161.69	10,244	6066.91
Financial intermediation	2,670	7540.43	2,649	5839.37	5,319	6693.26
Real estate, renting and business activities	3,457	5457.22	1,440[u]	4387.40[u]	4,897	5142.64
Public admin and defence; compulsory social security	9,621	5771.99	3,340	4571.85	12,961	5462.15
Education	4,023	5670.92	6,683	4879.20	10,706	5176.70
Health and social work	4,769	5756.57	5,298	4989.31	10,067	5352.78
Other community, social and personal service activities	3,646	4708.78	1,007[u]	4218.50[u]	4,653	4602.24
Private households with employed persons	-	-	349[u]	3850.55[u]	349[u]	3850.55[u]
Extra-territorial organizations and bodies	-	-	137[u]	6270.07[u]	137[u]	6270.07[u]
Total	83,806	5299.22	42,126	4502.17	125,932	5032.60

Source: National Statistics Office, Malta (2003).

Appendix Table 4. Full-time employed persons classified by economic activity in December 2003

Economic Activity	Sex				Total	
	Males		Females			
	No	%	No	%	No	%
Agriculture, hunting and forestry	2,252	2.3	185[u]	0.5	2,437	1.8
Fishing	496[u]	0.5	-	-	496[u]	0.4
Mining and quarrying	956[u]	1.0	79[u]	0.2	1,035[u]	0.8
Manufacturing	20,004	20.6	6,575	18.0	26,579	19.9
Electricity, gas and water supply	3,818	3.9	219[u]	0.6	4,037	3.0
Construction	10,430	10.7	326[u]	0.9	10,756	8.0
Wholesale and retail trade, repairs of household goods and vehicles	13,827	14.2	6,045	16.5	19,872	14.9
Hotels and restaurants	6,907	7.1	3,043	8.3	9,950	7.4
Transport, storage and communication	8,532	8.8	2,205	6.0	10,737	8.0
Financial intermediation	2,596	2.7	2,267	6.2	4,863	3.6
Real estate, renting and business activities	4,789	4.9	1,311[u]	3.6	6,100	4.6
Public admin and defence; compulsory social security	9,700	10.0	2,621	7.2	12,321	9.2
Education	3,892	4.0	5,745	15.7	9,637	7.2
Health and social work	4,756	4.9	4,309	11.8	9,065	6.8
Other community, social and personal service activities	4,235	4.4	1,214[u]	3.3	5,449	4.1
Private households with employed persons	-	-	279[u]	0.8	279[u]	0.2
Extra-territorial organizations and bodies	-	-	137[u]	0.4	137[u]	0.1
Total	97,190	100.0	36,560	100.0	133,750	100.0

Source: National Statistics Office, Malta (2003).

Appendix Table 5. Wholesale value and quantity of agricultural products sold through official markets

Malta & Gozo													
Item	2004				2005								
	April/June		January/June		April		May		June		April/June		Januar
	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity	Value	Quantity
	Kg	Lm	Kg	Lm	Kg	Lm	Kg	Lm	Kg	Lm	Kg	Lm	Kg
Total vegetables and fruit	**12,245,661**	**1,762,009**	**19,804,885**	**3,726,815**	**3,403,762**	**712,371**	**3,752,153**	**717,064**	**5,302,379**	**766,704**	**12,458,295**	**2,196,139**	**20,187,274**
Total vegetables	**11,504,615**	**1,421,998**	**18,918,643**	**3,303,349**	**3,255,728**	**596,728**	**3,594,973**	**611,998**	**4,815,315**	**592,448**	**11,666,016**	**1,801,175**	**19,027,975**
of which:													
Artichokes Globe	103,838	5,389	335,938	93,883	81,993	4,019	5,298	201	-	-	87,291	4,220	338,170
Beans Broad	380,178	87,261	466,376	136,972	385,751	57,075	217,291	16,332	3,333	472	606,375	73,879	667,414
Bellpepper	190,369	53,845	263,392	104,535	27,486	15,807	52,361	23,532	105,789	20,876	185,636	60,215	258,489
Cabbages	662,753	17,965	1,371,566	90,729	207,675	19,514	180,540	21,222	169,525	9,302	557,740	50,038	1,232,444
Carrots	506,241	80,424	997,505	181,977	109,943	19,933	75,199	16,637	102,478	28,208	287,620	64,778	698,816
Cauliflowers	954,424	47,440	1,795,724	223,736	391,744	30,421	400,303	23,232	164,400	15,299	956,447	68,952	2,265,719
Celery	105,253	9,686	220,045	26,549	34,562	3,073	32,967	4,371	38,835	2,788	106,364	10,231	231,421
Cucumber	205,811	47,493	277,850	105,038	32,734	21,040	105,301	9,670	129,983	7,734	267,998	38,444	333,942
Eggplant	153,507	34,983	191,455	71,649	22,592	12,288	41,818	15,362	103,527	11,337	167,937	38,985	215,808
Kohlrabi	209,712	13,106	499,328	52,897	91,539	7,958	69,284	6,191	50,140	3,145	210,963	17,294	583,649
Lettuce	610,186	42,375	1,074,818	98,369	229,319	16,538	255,498	17,212	247,860	28,510	732,697	62,259	1,092,076
Marrows Vegetable	1,063,058	105,637	1,603,851	386,686	195,466	110,647	407,167	58,990	271,774	41,461	874,407	211,099	1,369,711
Melons Sugar	815,839	139,283	816,575	139,384	164	156	49,307	29,583	709,321	91,090	758,792	120,829	759,823
Melons Water	1,009,874	108,908	1,009,874	108,908	-	-	22,095	10,997	872,139	123,773	894,234	134,770	894,237
Onions Dry	318,404	48,580	685,406	109,191	52,923	23,028	100,437	13,571	261,010	20,231	414,370	56,830	747,333
Onions Green	324,525	29,602	386,316	33,805	171,770	12,823	216,315	13,254	39,716	1,667	427,801	27,743	456,785
Potatoes	1,654,093	156,501	2,896,795	370,506	459,227	55,570	687,024	64,901	696,360	42,692	1,822,611	163,163	2,732,920
Pumpkins	122,369	13,051	282,151	28,523	55,267	12,335	34,530	11,375	29,030	8,780	119,127	32,490	314,723
Tomatoes	1,331,261	234,170	1,938,127	523,995	336,388	103,666	371,439	191,226	573,223	86,413	1,281,050	381,305	1,923,584
Other vegetables	782,921	146,301	1,805,553	336,117	369,185	71,038	290,500	64,140	246,872	48,672	906,557	183,851	1,890,912
Total fruit	**741,046**	**340,009**	**886,241**	**423,466**	**148,035**	**115,642**	**157,180**	**105,066**	**487,065**	**174,256**	**792,279**	**394,964**	**1,159,400**
of which:													
Figs Dry	-	-	73	50	24	3	-	-	27	10	51	13	103
Figs Early	98,454	42,690	98,454	42,690	-	-	-	-	161,108	43,152	161,108	43,152	161,108
Grapes	-	-	-	-	-	-	-	-	-	-	-	-	-
Lemons	106,236	19,595	168,325	28,988	24,239	1,237	26,214	1,801	33,441	3,595	83,894	6,632	141,845
Nectarines	61,307	20,576	61,307	20,576	-	-	232	163	33,303	13,097	33,535	13,260	33,535
Oranges Sweet	1,782	715	43,635	19,184	13,100	2,857	1,979	510	238	56	15,317	3,223	223,639
Peaches	221,845	67,830	221,845	67,830	-	-	5,552	3,526	127,054	55,206	132,606	58,732	132,606
Plums Cherry	14,328	6,907	14,328	6,907	-	-	266	278	61,583	13,124	61,869	13,401	61,869
Pomegranates	-	-	-	-	-	-	-	-	-	-	-	-	-
Strawberries	216,686	173,667	247,118	225,442	107,454	110,952	119,259	97,847	48,226	35,781	274,938	244,579	297,603
Other fruit	20,409	8,029	31,157	11,797	3,218	794	3,858	942	22,085	10,236	28,961	11,971	107,092

Source: National Statistics Office, Malta (2005).

Appendix Table 6. Producer price indices for the main products in agriculture in March - annual changes

Item	Mar 2004	Mar 2005	Points change	% change
Potatoes	173.30	93.61	-79.69	-45.98
Peaches	-	-	-	-
Grapes	-	-	-	-
Lemons	55.06	19.62	-35.43	-64.36
Tomatoes	207.18	126.27	-80.91	-39.05
Dry onions	435.14	321.86	-113.28	-26.03
Vegetable marrows	88.47	116.58	28.11	31.77
Sugar melons	-	-	-	-
Water melons	-	-	-	-
Mushrooms	109.06	101.07	-7.99	-7.33
Bulls	92.39	93.06	0.67	0.72
Cows	68.44	77.85	9.40	13.74
Pigs	81.95	81.95	0.00	0.00
Poultry	89.80	89.80	0.00	0.00
Rabbits	113.17	116.06	2.88	2.55
Milk	114.70	103.64	-11.06	-9.65
Eggs	81.59	81.59	0.00	0.00

Source: National Statistics Office, Malta (2005)

Appendix Table 7. Trade with agricultural products: declaring country

MALTA (2000)	EXPORT						IMPORT						BALANCE (EXPORT - IMPORT)					
(million EURO)	WORLD	EU15	CC12	RF	US	ROW	WORLD	EU15	CC12	RF	US	ROW	WORLD	EU15	CC12	RF	US	ROW
All Agriculture prods.	64.5	7.1	0.7	0.0	0.7	56.0	303.5	229.7	8.2	0.9	15.4	49.3	-239.0	-222.5	-7.5	-0.9	-14.7	6.7
Live Animals	0.0	0.0	0.0	0.0	0.0	0.0	1.1	1.0	0.0	0.0	0.0	0.1	-1.1	-1.0	0.0	0.0	0.0	-0.1
Meat & offal	0.1	0.0	0.0	0.0	0.0	0.1	23.4	17.0	0.0	0.0	0.6	5.8	-23.3	-16.9	0.0	0.0	-0.6	-5.7
Dairy produce	0.7	0.0	0.0	0.0	0.0	0.6	29.8	22.2	1.9	0.0	0.1	5.6	-29.1	-22.1	-1.9	0.0	-0.1	-5.0
Prods. of animal origin	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.0	0.0	0.0	0.0	-0.1	-0.1	0.0	0.0	0.0	0.0
Trees & plants	0.1	0.1	0.0	0.0	0.0	0.0	3.3	3.2	0.0	0.0	0.0	0.1	-3.2	-3.1	0.0	0.0	0.0	-0.1
Vegetables	2.4	2.4	0.0	0.0	0.0	0.0	5.1	4.6	0.0	0.0	0.0	0.5	-2.7	-2.1	0.0	0.0	0.0	-0.5
fruits	0.1	0.0	0.0	0.0	0.0	0.1	20.2	11.1	0.2	0.0	0.8	8.0	-20.0	-11.0	-0.2	0.0	-0.8	-8.0
Coffee, tea & spices	0.3	0.0	0.1	0.0	0.0	0.2	3.4	2.0	0.0	0.0	0.1	1.3	-3.1	-2.0	0.1	0.0	-0.1	-1.1
Cereals	0.0	0.0	0.0	0.0	0.0	0.0	26.9	5.2	4.6	0.8	9.5	6.7	-26.9	-5.2	-4.6	-0.8	-9.5	-6.7
Prods. of milling ind.	0.8	0.0	0.0	0.0	0.0	0.8	3.6	3.6	0.0	0.0	0.0	0.0	-2.8	-3.6	0.0	0.0	0.0	0.7
Oil seeds	0.1	0.1	0.0	0.0	0.0	0.0	4.0	2.7	0.1	0.0	0.1	1.0	-3.9	-2.6	-0.1	0.0	-0.1	-1.0
Lac, gums & saps	0.6	0.0	0.0	0.0	0.5	0.0	0.5	0.4	0.0	0.0	0.0	0.1	0.1	-0.4	0.0	0.0	0.5	0.0
Veg. Plaiting materials	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0	0.0	0.0	0.0	0.1	-0.1	0.0	0.0	0.0	0.0	-0.1
Animal or veg. Fats	0.0	0.0	0.0	0.0	0.0	0.0	8.9	7.4	0.0	0.0	0.1	1.3	-8.8	-7.4	0.0	0.0	-0.1	-1.3
Prep. of meat	0.0	0.0	0.0	0.0	0.0	0.0	10.5	7.8	0.0	0.0	0.0	2.7	-10.4	-7.8	0.0	0.0	0.0	-2.6
Sugar	0.1	0.0	0.0	0.0	0.0	0.1	11.7	11.2	0.1	0.0	0.0	0.4	-11.6	-11.1	-0.1	0.0	0.0	-0.3
Cocoa & cocoa prods.	0.2	0.0	0.0	0.0	0.0	0.1	17.5	15.8	0.1	0.0	0.1	1.6	-17.4	-15.8	-0.1	0.0	-0.1	-1.4
Prep. of cereals	2.2	0.3	0.1	0.0	0.0	1.8	29.5	27.0	0.1	0.0	1.1	1.3	-27.4	-26.7	0.0	0.0	-1.1	0.5
Prep. of vegs.	0.6	0.1	0.0	0.0	0.0	0.5	14.2	12.3	0.1	0.0	0.2	1.7	-13.6	-12.2	-0.1	0.0	-0.2	-1.1
Miscell. Prep.	29.2	1.7	0.4	0.0	0.2	27.0	22.1	17.5	0.1	0.0	0.4	4.0	7.1	-15.8	0.3	0.0	-0.3	23.0
Beverages	7.0	0.5	0.0	0.0	0.0	6.4	23.8	22.2	0.0	0.0	0.7	0.8	-16.8	-21.7	0.0	0.0	-0.7	5.6
Residus from waste	0.0	0.0	0.0	0.0	0.0	0.0	15.9	15.0	0.0	0.0	0.1	0.8	-15.9	-15.0	0.0	0.0	-0.1	-0.8
Tobacco & Tob. orods.	18.4	1.4	0.0	0.0	0.0	17.0	23.2	17.3	0.7	0.0	0.9	4.2	-4.8	-15.9	-0.7	0.0	-0.9	12.8
Other UR prods.	1.6	0.4	0.0	0.0	0.0	1.3	4.8	3.3	0.0	0.0	0.3	1.1	-3.1	-2.9	0.0	0.0	-0.3	0.1
ALL PRODUCTS	2,655.9	884.7	17.7	0.5	727.2	1,025.8	3,695.8	2,216.4	24.5	12.4	392.8	1,049.7	-1,040.0	-1,331.7	-6.8	-11.9	334.4	-23.9
Agr. as % of All Prods.	0.24%	0.08%	0.37%	0.01%	0.01%	0.55%	0.82%	1.04%	3.34%	0.70%	0.39%							

Source : Eurostat - Comext - Phare

Appendix Table 8. Imports and exports agri products

IMPORTS:	2003			
Commodity	Quantity			Value (000 US$)
Food Prepared nes	Mt	6095	P	22227
Beef and Veal,Boneless	Mt	5519	P	18022
Cheese (Whole Cow Milk)	Mt	6678	P	17214
Pastry	Mt	3894	P	15318
Chocolate Products nes	Mt	2165	P	12506
Breakfast Cereals	Mt	2122	P	10680
Tobacco Products nes	Mt	585	P	10377
Beverages Dist Alcoholic	Mt	1690	P	10030
Sugar Refined	Mt	33276	P	9398
Food Wastes	Mt	9178	P	6932
Cake of Soya Beans	Mt	24250	P	6695
Beverages Non-Alcoholic	Mt	6188	P	6682
Beer of Barley	Mt	4754	P	6439
Maize	Mt	43785	P	6315
Pet Food	Mt	4887	P	5625
Wheat	Mt	33498	P	5526
Wine	Mt	751	P	5062
Sausages Pig Meat	Mt	1474	P	4670
Meat Canned Chicken	Mt	1124	P	4213
Potatoes, frozen	Mt	6155	P	4034

EXPORTS:	2003			
Commodity	Quantity			Value (000 US$)
Food Prepared nes	Mt	6154	P	7890
Potatoes	Mt	4288	P	1771
Pastry	Mt	508	P	787
Cigars Cheroots	Mt	10	F	720
Food Wastes	Mt	41	P	515
Beverages Dist Alcoholic	Mt	63	P	429
Fatty Acids Oils 431.31	Mt	529	P	254
Wheat	Mt	2150	P	221
Maize	Mt	2187	P	204
Macaroni	Mt	103	P	181
Beverages Non-Alcoholic	Mt	232	P	177
Oranjuice Concentrated	Mt	103	P	172
Fruit Juice nes	Mt	129	P	146
Bread	Mt	107	P	133
Sugar Refined	Mt	62	P	133
Oil of Palm	Mt	261	P	105
Seeds Fruits Spores Pl	Mt	1	P	94
Oil of Olive	Mt	46	P	94
Vanilla	Mt	34	P	91
Applejuice Concentrated	Mt	63	P	82

Mt = Metric Ton | P=trading partner estimations

Source: FAO