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# Food, Rural, Agricultural and Fisheries Policies in Malta

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## Introduction

In 1992 a comprehensive study entitled “Malta Agricultural Policy and EC Membership: Challenges and Opportunities” was conducted by FAO and presented to Government of Malta. This project had the objective of carrying out an agricultural sector review aimed at the implementation of the new international and domestic policy changes necessary for eventual EU membership. This report made particular emphasis on the proposal for dealing with key agricultural policy deemed to be crucial for the survival of the sector. Despite that a certain degree of restructuring and amelioration has occurred, the agricultural sector in Malta has not reversed its long-term decline, nor does it appear to have attained sustainability. Furthermore, the Maltese structural and geographical features of the territory are not so conducive to investment, and are, in part, responsible for imparting a “dampening” effect on investment potential. Nonetheless issues of markets, production organization and policy have a significant role. The lack of efficiently functioning markets for outputs as well as inputs; conservative attitudes in the sector towards modern, efficient and effective business practices; the pattern of land ownership and tenure, that curtails productivity and the entry of new operators into the sector; these all act together to create a complex matrix within which investment has its limitations. To further complicate these issues, the sector has no clear long term policy direction, thus resulting in uncoordinated actions in terms of effort, time and investments towards established goals.

The objective of this paper is to portray the developments in the Maltese agro-food sector in conjunction with related policy changes.

## I - Overview of the national economy and its perspectives

The Maltese economy was performing below its potential as from 2001. Real GDP fell by 0.4% in 2001, while it increased by 2.2% in 2002. In 2003, a negative growth rate of 2.4% was registered while in 2004 the growth rate was negligible. Nonetheless, the 2005 registered real GDP increased by 2.2%, fuelled by an increase in domestic demand particularly in the recovery in private consumption as well growth in investments. On the other hand, the decline in exports of goods and services contributed to the contractionary effect of the external sector. In terms of GDP at market price in Purchasing Power Standards (PPS), the Maltese economy showed a decrease as from 2000 to 2005 compared to the EU average. On a per capita basis, Malta’s GDP per capita, expressed in PPS, as percentage of the EU-25 (EU 25 = 100) on a three year average (2001-2003) reached 74.7%.

This unfavourable economic environment impinged significantly on domestic economic conditions. Exogenous shocks stemming from rising energy prices also negatively effected the Maltese economy and the international economic environment also become increasingly competitive due to stronger market positions by emerging low-cost countries. On the domestic front, was dampened by the fiscal consolidation underway, whilst a number of economic sectors have faced competitive challenges both in domestic and export markets.

Competitiveness is a function of labour productivity. Labour productivity as measured by GDP in PPS per person employed, relative to EU-25 (EU 25 = 100), fell by 1.3 percentage points in 2005 over the previous year. Over the 2000-2005 period, Malta's productivity relative to that of the EU-25, as shown in the table below, declined by 9.8 percentage points, highlighting the need for improvement.

**Table 1. Malta's labour productivity per person employed**

| | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|---|
| EU-25 | 100 | 100 | 100 | 100 | 100 | 100 |
| Malta | 90.2 | 85.5 | 86.9 | 84.4 | 81.7 | 80.4 |

GDP in Purchasing Power Standards (PPS) per person employed relative to EU-25 (EU25 = 100).
*Source: Eurostat.*

# II - Main economic sectors

Economic growth in Malta is highly dependent on the tertiary sector. Accounting for 74.1% of the GVA in 2005, the tertiary sector covers tourism, financial intermediation, transport, public administration, health and education amongst others, is followed by the secondary sector comprising the manufacturing and construction industry, and accounting for 23.4% of total GVA. The primary sector includes agriculture and fisheries and excludes forestry. This sector contributes just 2.4% to the total GVA, for which agriculture is the major contributor. Although agriculture has a minimal contribution to the national economy, its importance goes far beyond that captured by economic figures.

## 1. Manufacturing

Maltese small and medium enterprises (SMEs) have proved to be a major engine of growth and provide a major contribution to the development of our economy. Manufacturing activity in Malta is characterised by a prevalence of small enterprises, with micro enterprises constituting approximately 94%[1] (NSRF, 2006) of the total number of firms that prevalently operate in the manufacturing and tourism industry. Overall, the fragmented composition of Malta's industrial landscape, the economic openness, insularity and high export concentration of goods and services, underpins the vulnerability of the Maltese economy. Malta's manufacturing enterprise base consists of locally-owned small and medium-sized enterprises operating alongside a small number of relatively large foreign-owned export orientated subsidiaries of multinational companies. Table 2 shows the number of manufacturing enterprises and the total employed by size of enterprise.

The manufacturing industry faced the need to restructure in order to compete better at international levels. This need was underpinned by the prospect that protective measures would be dismantled, and by

[1] Based on 2004 data.

the need to face better the challenges posed by developments in international markets, particularly, the intensified competition from emerging countries.

**Table 2. A profile of manufacturing enterprises**

| | Employment size | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | Large | Medium | | Small | | Micro | | Grand Total |
| | 250+ | 100-249 | 50-99 | 20-49 | 10-19 | 6-9 | 0-5 | |
| No of enterprises | 18 | 25 | 40 | 112 | 147 | 219 | 2,519 | 3,080 |
| No of persons employed | 13,234 | 3,761 | 2,741 | 3,450 | 2,009 | 1,589 | 3,874 | 30,657 |

*Source: abstract from NSRF, 2006.*

The manufacturing industry has changed priorities by shifting from traditional low-cost manufacturing towards higher value added activities. Cases in point are the contraction of the textiles sub-sector and the emergence of generics manufacturing activities in the pharmaceutical sub-sector, in which the operators' competitive advantage lies in value added. A sector review of the manufacturing industry shows that the radio, TV and communications equipment sector is the major contributor towards manufacturing value added at factor cost, followed by the food, beverages and tobacco sector and thirdly by the furniture and other manufacturing sector.

## 2. Tourism and other services

The tourism industry in Malta contributes to 24.3% of GDP and 29% of full time employment, amounting to a total of 40,050 direct, indirect and induced full time and part-time jobs2 (NSRF, 2006). The island's tourism industry has been significantly affected by the adverse geopolitical situation that characterised the international environment, as well as the economic situation in a number of major tourism markets. The Maltese tourism industry is also facing increased competition from new emerging tourist destinations. Nevertheless growth rates remain relatively modest as Table 3 shows.

**Table 3. Tourist departures, by air and by sea**

| | Tourist Departures | |
|---|---|---|
| | Air | Sea |
| 2001 | 1,145,166 | 35,589 |
| 2002 | 1,096,827 | 35,450 |
| 2003 | 1,089,089 | 29,147 |
| 2004 | 1,127,407 | 30,275 |
| 2005 | 1,150,769 | 19,853 |

*Source: NSO, 2006.*

Tourism is characterised by strong seasonality, with the summer months accounting for almost half the tourist departures with profits made in summer having to make up for winter losses or reduced profits. Malta needs to qualify better its tourism offer, through improved quality and presentation, and also by

[2] Based on Blake, A.; Sinclair, M. T.; Sugiyarto, G., 2003, "The Economic Impact of Tourism in Malta: Computable General Equilibrium Analysis", in *Report for the Malta Tourism Authority*.

increasing marketing efforts to achieve a better seasonal spread. The islands' tourism product is intrinsically linked with the promotion of Malta's cultural heritage.

## 3. Labour market

It is widely recognised that human resources are Malta's main resource and thus, providing support for people to realise their full potential, is crucial for Malta's socio-economic development.

In 2005, the proportion of employed persons in the working age bracket stood at 53.8%. Employment levels remained relatively stable in recent years. The full-time gainfully occupied population reached 137,937 in 2005, a marginal increase of 0.3% over the previous year. Meanwhile, the number of persons with a part-time employment as their main occupation rose by 10.5% to 22,711 between 2004 and 2005. There is a tendency for females to join the workforce on a reduced basis with 60.4% of workers on part-time basis being females. Closing the male-female labour force gap is of outmost importance for improved gender relations, gender equality and economic development. The major employer is the tertiary sector, absorbing 68.3% of the total gainfully occupied, followed by the secondary sector with 28.3% of total gainfully occupied (context indicator 20). This division of the employed between sectors, compares well with the EU-25 average, which stood at 68.8% and 26.2% in the same order. Unemployment, as a share of active population stood, at 7.4%.

Human resource development is a determinant factor to economic growth and quality of life. Education, including vocational training and tertiary education is provided free. Additionally students following full-time post secondary courses receive a basic student maintenance grant to encourage further education. Nonetheless, only 24.1% of the persons aged between 15 and 64, have at least a medium level of education.

## 4. The agricultural and food sector

Malta is handicapped by a number of structural constraints limiting its competitiveness in agriculture and agro-industry. The most obvious is the opportunity cost of land due to land scarcity, resulting in a high economic rental value of land. The land issue is further compounded by fragmentation, tenure issues and poor soil quality. The second constraint is the lack of fresh water reserves, resulting in the farming community tapping all water aquifers for irrigation. Thirdly, labour costs are high in a situation where the rate of unemployment is only about 5%. In view of these constraints, Maltese agriculture cannot attain the high productivity standards achieved elsewhere in Europe. Labour productivity in agriculture, measured as GVA per AWU stands at 14,443 Euros, compared to the EU25 average of 16,862 Euros. On the whole, the agricultural sector accounts for only 2.4% of the total GVA generated by the Maltese economy, and it employs the same proportion of the gainfully employed. Notwithstanding this minimal direct contribution to economic growth, the role of agriculture in the Malta goes far beyond that captured in figures. Agriculture has been particularly important in shaping the rural landscape and the environmental character of the islands. Agricultural and rural areas constitute a green lung and a venue of recreation to many. Today agriculture remains a major contributor in maintaining the quality of the landscape. It is also an integral component of the cultural heritage and a crucial backdrop to the tourism industry. In short, agriculture exhibits multiple functions and values beyond its economic contribution.

### A. The food sector

The Maltese food manufacturing sector is typified by a large number of micro enterprises. These small firms have a number of characteristic features: high level of motivation, high degree of flexibility and

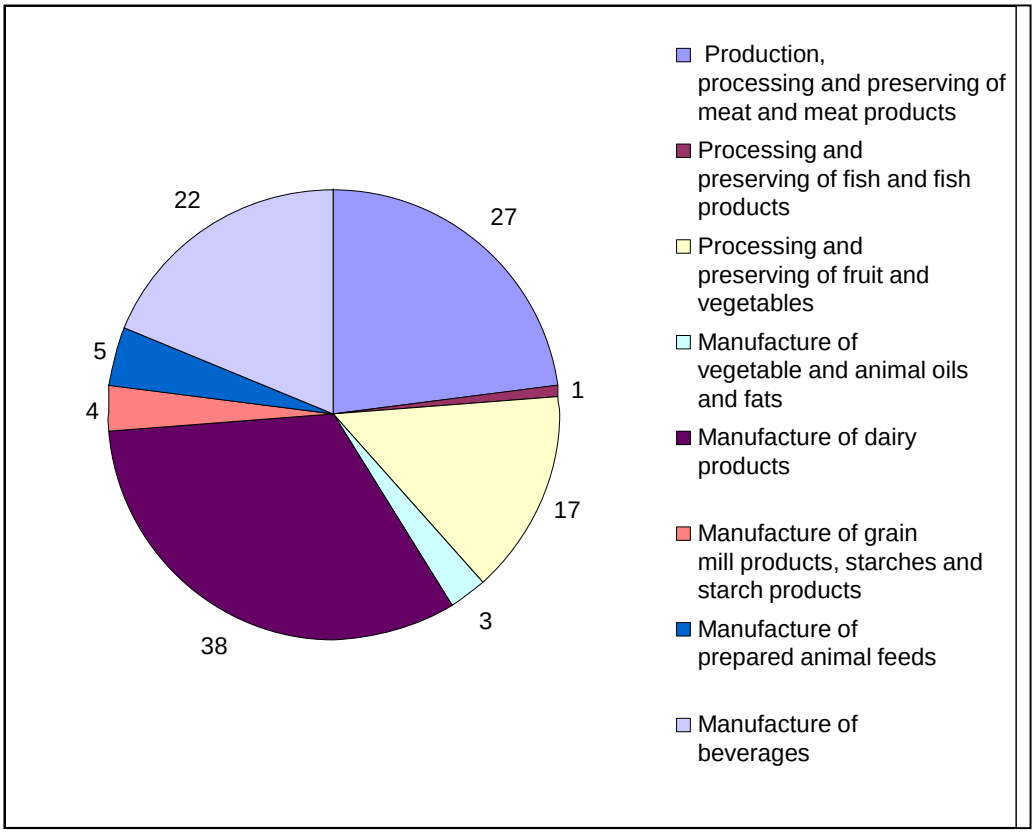
adaptability to sudden changes, a low degree of bureaucratic time wasting, and minimal industrial relations problems. Due to their smallness these firms do not have the capacity to exploit the cost advantages of mass production and standardisation. These small firms therefore tend to find market niches by offering special services or by giving personalised attention, or by creating individually designed products. They take advantages of proximity, especially when the product is perishable, and compete by catering for a small local market. They do not enjoy the advantages of specialisation, spread of overhead costs, and access to borrowed funds as easily as larger firms. They also find it difficult to utilise technologically advanced machinery because their small production runs may not warrant buying state of the art equipment that is very often designed for mass production. These positive and negative features are not mutually exclusive, and may offset each other. But the fact that many small businesses have survived, and seem to be able to compete, suggests that, in many cases, the positive aspects associated with small size outweigh the negative ones (Briguglio, 2004).

In Malta, the agro-food processing industry, accounts for only 2.7% of the value added generated by the total economy. The employment situation in the food and beverage industry, as of 2005, stood at 4,760 of which 3,828 were in full-time employment. It has an average annual turnover (years 2000 and 2005) of Lm115 million, of which around 84% is derived from domestic sales and only 16% from exports. Investment levels are very sporadic, ranging from two to eight million Maltese Liri per year.

The food and beverage industry has 117 operators with an additional 200 associated with bread making. The bakery operators are not included in this segment because it could distort the analysis. Around 16 of these operators source their raw materials completely from other EU and third countries, using no local agricultural input. As to the remaining 100 firms, a significant element of importation is also present although this cannot be quantified. Although locally grown beef, pork, rabbit and poultry, as well as fruits and vegetables, mainly tomatoes for processing, olive and grapes are tapped by agro-processors, local production is not sufficient to meet their demand and seasonal production may not be enough to keep the processing line fully utilised. The contained size of the local market can support only a limited number of agro-processors operating in a particular product line. It is therefore a common occurrence that only few firms can therefore absorb the local farmers' production and produce a given product. This translates into increased vulnerability to farmers and livestock breeders. A case in point is dairy milk, where there is only one processor.

The sector has both the potential and the need to innovate not only on the level of the product, but also on the processes employed. Since use of recognised quality products is still in its infancy, exploitation of EU quality labels and possibly the setting up of national schemes could enhance this situation. Cottage industries are well established in rural food products, such as cottage cheese, honey, olive oil and sun-dried tomatoes. There is room for further development of the cottage industry, especially in synergy with agricultural, tourism and heritage sectors.

**Figure 1. Number of enterprises according to NACE 15 sub-categories**




*Source: NSO (2003), customised data request.*

### B. Self Sufficiency and Competitiveness

Malta is considered as being self-sufficient in fresh vegetables and potatoes, processed tomatoes. It is also classified as being self–sufficient in the production of eggs, poultry meat, rabbit meat, pork, and dairy milk. Self sufficiency in animal products is somewhat of a misnomer and a misleading statement since Malta lacks any significant production of cereal and fodder crops to meet the nutritional requirements of the livestock herd. In fact, it relies heavily on imports of cereals for the feed and bakery industry. Fruit, sugar, vegetable oil, rice, butter, cheese, and beef are imported in bulk to meet national needs. Prior to Malta's accession to the EU the agri-food chain was pinpointed as the sector offering most resistance and postponement to change (Borg, 2004) This has changed to some degree now, as with higher import penetration and enhanced competition, operators were left with no option other than to adapt to survive. Opportunities were also present for those operators who gradually switched towards high quality, premium products. With accession and the dismantling of protective levies, the livestock sector experienced a surge in imports in segments that were formerly local strongholds. Consequently production fell drastically, in particular for the poultry sector, as did producer prices. Fruit and vegetables imports also experience a rise since accession, and although local production volumes did not fluctuate dramatically, producer prices recorded significant fluctuatios. With accession, the local production-imports balance became less set.

Malta ranked rather low in innovation and knowledge transfer at the Lisbon Review of 2006, classifying the 19th place out of 25 Member States. There is, however, a strong national drive to ameliorate in this respect, as it is widely understood that the competitiveness of the country rests on how fast it can increase its innovative capacity. The National Strategic Plan for Research and Innovation for 2007-2010 outlines national priorities and courses of action that should lead to significant improvements in the innovative capacity of the country. For the past fifty years, Maltese agricultural activity survived as a result

of a series of protective measures aimed at encouraging production by ensuring a regular income flow to local farmers and animal breeders through a system of price guarantees and quota restrictions on imports. There were practically few incentives for active full-time farmers to rationalize production through the constant upgrading of plant and produce as well as through a consumer-orientated system of product selection and distribution. It may be claimed that it was tradition more than marketing that dominated the growth of agriculture in the past. Despite limited innovation, the ultimate marketing framework remained focused on the domestic markets with exports featuring relatively low in producers' hierarchy of planning and risk (Delia, 2005).

This situation, where local farmers are finding it increasingly difficult to compete in an open market is, to some degree, a result of past Maltese agricultural inward-oriented policy, where domestic supplies were secured to the maximum possible extent. The ensuing mediocrity and exclusively quantity oriented approach induced repercussions on product quality and diversity, environmental compatibility, and sustainable use of natural resources. Paradoxically, even traditional specialties, crop varieties and skills were progressively neglected as a result of excessive focus on a limited variety of "quantity crops", with an accompanied widespread toleration of shoddy short-term approaches, in sharp contrast to other Mediterranean delicacies and practices that have been successfully marketed as gastronomic and agro-touristic attractions in their respective regions and localities. Because of the protection provided, the sector did not develop a solid marketing approach. Very little produce was exported and, in some sectors, the quality of produce accessing the domestic market was not of a high standard. In many cases, farmers marketed their produce individually rather than collectively, thereby limiting their ability to receive a higher return from the market. High mark-ups on producer prices at retail level, further cepitomized an inefficient distribution system. Till recently, there were no attempts to market Maltese produce as a distinctive brand or to market on the basis of the guaranteed quality of Maltese production. Quality standards have been virtually non-existent for Maltese agricultural produce. There is a heavy dependence on traditional wholesale markets and little effort to identify and market produce through new marketing channels resulting mainly in poor collaboration between farmers and other stakeholders in the sector.

Maltese agriculture cannot compete on the basis of the quantity of the produce, and will need to establish specialty niche markets for a number of products. All this will require a major change in the marketing and the processing approaches of the main agricultural commodities in Malta. This should incorporate the very short supply chain from producer to consumer, as well as the additional market of over a million tourists a year and the potential offered by niche markets. Malta needs to offer differentiated, high quality produce that promotes the distinctive Maltese nature of the produce being sold. The promotion of Maltese produce through the use of quality identification marks necessitates cooperative marketing approaches primarily amongst producers and agro-processors. This should be coupled with improved educational and marketing strategies that focus on sustainable practices, care for the environment and landscape, appreciation of traditional delicacies and artisan methodologies, cultivation of indigenous varieties, and an all-round quality orientation that is increasingly sought after by more demanding consumer markets, both current and potential, locally and internationally.

### C. Agricultural Land Use Issues: 1955 to1983 and 2001 to 2005

Data from the Census of Agriculture for the period 1955 to 1983 indicated that as at 1955, 20701 hectares or 65.5% of the total land area of the Maltese islands pertained to agricultural holdings. By 1983, this area had decreased by 37.1% to 13017 hectares or 41.2% of total land area. In 1955 agricultural land consisted of 83.1% dry land, 4.1% irrigated land and 12.8% waste land, by 1983, 83.8% was dry land, 3.6% was irrigated, 0.9% semi-irrigated and 11.7% was waste land indicating minimal changes. It can be seen that between 1955-83 the overall trend was a decrease of all the agricultural land types. However, the total loss of 7684 hectares of agricultural land indicates a trend for depletion of agricultural resources. The continuous presence of over 12,000 holdings in the 1955-83 period, despite the considerable loss of agricultural land, indicates the deleterious effect of fragmentation. This factor has led to a continuous subdivision of agricultural land to such an extent that most of the remaining land parcels can only sustain their holders with difficulty.

Figures for the 2001 to 2005 period indicate the Utilizable Agricultural Area increasing from 9656 hectares to 10254 hectares whilst holdings decreased from 11959 to 11071 during the same period. The number of holdings under 0.5hectares although decreasing from 5596 to 5330 effectively registered a 46.79% to 48.14% increase with average size from 0.2507 hectares to 0.2497 hectares. On the other hand, the number of holdings larger than 2 hectares increased from 1121 or 9.37% to 1197 or 10.81%. This indicates that whilst holdings less than half a hectare are getting smaller, more positively, larger holdings are increasing, with resultant average holding size increasing from 0.8765 hectares to 0.9424 hectares.

Land use and utilised agricultural area

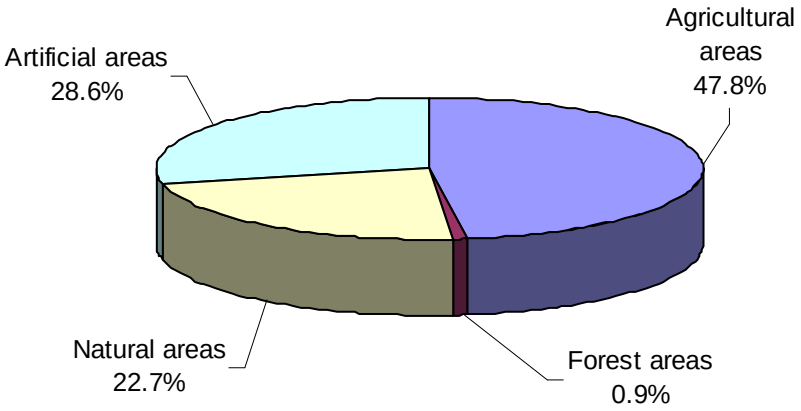
Agriculture is the largest land user, accounting for 47.8% of the total area of the islands. This compares well with the European average (EU25) of 46.7%. The lack of forest and natural areas, which only account for 0.9% and 22.7% respectively compared to the European average of 31% and 16% however provides a sharp contrast. Artificial areas in Malta occupy 28.6% of the total land mass, a staggering amount compared to the European average of 4%, stressing the influence of human activity and further underlying the significance of agricultural areas as a green lung. Figure 3 shows the distribution of land cover in the Maltese Islands according to the Corine Land Cover.

In 2005 the total agricultural land amounted to 11,791 hectares (ha), of which 87% or 10,254 ha constituted Utilisable Agricultural Area, whilst around 1% constituted unutilised agricultural land and 12% other areas included garigue land (NSO, 2005).

Utilised agricultural area is in turn categorised into three land uses:

1. Arable area – land cultivated under a system of crop rotation.
2. Kitchen gardens – small plots of land intended for self-consumption.
3. Land under permanent crop – area of land not worked under a system of crop rotation but occupying the same field for a period of five years or more.

**Figure 2. Land cover of the Maltese Islands – Corine Land Cover 2000**




*Source: MEPA, 2005.*

Of the total UAA of 10,254 ha, arable area is the dominant category with 79.9% or 8,196 ha, followed by 1,090 ha or 10.6% of permanent crops and the remaining 9.4% or 968 ha of kitchen gardens. Albeit constituting only a small proportion of UAA, kitchen gardens recorded a significant increase in the two years to 2005, from 4% to 9.4% of the total UAA. As to extensive arable crops as a proportion of UAA, this has been estimated at 55.5% by taking into account area under forage and fallow land. In the local context forage and fallow land represent extensive agriculture because differently from the remaining

arable areas, the areas under forage and fallow land are not normally irrigated and employ the least consumables. Analysis of areas under different cropping systems indicates that for the 2001/2005 period the area under forage increased from 4464 ha to 4574 ha comparatively decreasing from 46.23% to 44.60% of total utilised agriculture area. For the same period the area under potatoes decreased from 1154 ha to 820 ha or from 11.95% to 8.0%. Similarly area under permanent cropping decreased from 448 ha to 429 ha or from 4.64% to 4.18%. With a similar decrease in trend the area under gardening decreased from 1920 ha or 19.88% to 1594 ha or 15.54%. On the other hand the area under vineyards increased from 483 ha or 5% to 661 ha or 6.45%. Fallow land also decreased from 1187 ha to 1115 ha or from 12.29% to 10.87%. Presently, about 11,000 hectares of different land classes are available for agriculture. Pressures from the non agricultural sector are the main reasons for the encroachment of the agricultural area.

***Permanent pastures***

Permanent grass areas or pastures and extensive grazing are practically non-existent in Malta. Given the prevailing semi-arid climate, geology of the island, relatively shallow depth of soil and small agricultural land parcels, extensive permanent grass areas or pastures that is typical of most temperate European countries is no t present. The closest to such land is the *'xagħri'*, characterised by a variety of low aromatic shrubs surviving on expanses of limestone bearing numerous depressions and fissures. Effectively, in the past grazing was practiced on such land, as well as on steppe, and this but resulted in the further degradation these areas. However following the 1950s, with the transition from extensive goat and sheep herds to cattle, grazing has been constantly decreasing and is now rarely practised, whilst the dairy industry has become mostly reliant on cereals harvested as forage crops other than pelleted feed.

***Irrigated land***

Irrigated land has more than doubled since 2001, from 1,509 ha to 3,527 ha in 2005 or 34.4% of the total UAA. Through increased irrigation, output and yield per hectare are increased, and in turn, intensive cultivation practice brings about increased fchemical inputs. On the negative side, fertilisers particularly, nitrates and some elements in organic matter, find their way into the ground water leading to higher nitrate levels, especially in perched aquifers that lie unconfined in important agricultural districts. Agricultural use of water is estimated to account for some 14.5 million $m^3$ or 37% of the total estimated water consumption in Malta (MRA, 2004). Adding this figure to the billed water consumption for farms which stands at 2.2 million $m^3$, increases the share to 43% of total estimated consumption, making agriculture the primary consumer of water in the Maltese Islands. A large proportion of this water, although not quantified as yet, is assumed to be sourced from groundwater through a number of either registered or unregistered private boreholes. Thus perched aquifers tend to be over-exploited and the small stored volume of water and springs that formerly arose from these aquifers has dwindled down significantly.

***Arable land***

A large proportion of arable land, 55.8% is used for forage plants, followed by 20.1% for vegetables, 10% for potatoes, and 0.5% for flowers and seeds production. The remaining 13.6% is fallow land. Although a drop was recorded in the proportion of arable land used for both the cultivation of potatoes and of vegetables; potatoes still remain the major crop and an important cash crop due to the significant quantities exported every year to mainland European markets.

***Fallow land***

The share of fallow land has increased from 7.5% to 13.6% of the total arable area in 2005 absorbing the decline in the cultivation of potatoes and vegetables. The percentage of area cultivated with forage plants has remained practically unchanged. The main forage crop nowadays is primarily wheat rather than the sulla legume crop (*Hedysarum coronarium)*.

***Permanent crops***

The area under permanent crops has increased in recent years from 917 ha in 2001, to 1,090 ha in 2005 or 10.6% of UAA, mainly due to an increase in land under vines and under olive trees. In 2005, the area under vines reached 840 ha from 490 ha in 2001. Likewise the area under olives increased substantially in the last few years from a few hectares in 2001 to 87 ha in 2005.

***Greenhouses***

The number of greenhouses has also reported a significant increase in recent years. According to the Farm Structure Survey of 2005 (NSO, 2005), there are 70 ha of land under greenhouses. The main crops grown under cover are tomatoes, aubergines, green peppers, marrows, melons and flowers.

***Organic farming***

Until a few years ago local organic production was almost non-existent. Since Malta's accession to the EU, and following the introduction of the agri-environmental measure for support to organic farming within the Rural Development Plan for Malta for 2004-2006, the area under organic farming in Malta increased and currently there are 8 producers who are using organic techniques of production and who are recognised by the certification body for organic farming to be in the process of conversion to organic farming. Between 2005 and 2006, the land taken up for organic farming increased from 14 ha to 20.1 ha. This is equivalent to 0.13% of the total agricultural land. The main crops are olive plantations (49%) followed by fruit and berry plantations (20%) and fresh vegetables (11%). Efforts to promote organic production were complimented with agri-environmental schemes introduced through the 2004-2006 Rural Development Plan and followed up again in the present 2007-2013 Rural Development Plan.

### D. Part-time farming

Over the last few decades part-time farmers were encouraged to remain in agriculture resulting in a situation whereby presently less that 10% of farmers are full-timers permanently engaged in agriculture. A total of 1,546 persons were engaged in agriculture on full time basis in 2005. There were 16,423 persons engaged on part-time basis. Female participation in agriculture is more pronounced in part time activity where 20.6% is carried out by females. Although, at face value this figure may seem a large percentage, the women are normally spouses of sole holders and contribute less than one week effort in agriculture.

This influx of part timers, all mostly cultivating their small parcels has had a significant overall negative effect on the sector. The average farm size now registers 0.9424 hectares with 45% of farms between 0.1 and 0.5 hectare. Furthermore, the situation is further compounded with the prevailing problems of ownership, fragmentation and the tenancy act. Land fragmentation very often leads to problems in relation to access roads, water sharing, agricultural investment and tenancy rights. The extent of this reality is revealed by the number of parcels registered in the Land Parcel Information System (LPIS) which has by now reached 94,000 parcels. Considering the fact that other sectors provide more appealing employment possibilities, this has meant that parcels are not essentially being utilised for commercial agriculture but more for hobby gardening or alternatively using the holding as a weekend retreat. Although abandonment is on the increase, so are the requests for development permits for new agricultural constructions and high-impact reclamation works. It is not uncommon that in such instances these are then followed by request for conversion to non-agricultural use.

### E. Impediments to new entrants in the agricultural sector

Following the transfer of church owned property to the state, the central government became the largest landowner, administering two-thirds of the agricultural land. The remaining one-third is owned by the private sector i.e. farmers and individual landlords. Records of government-owned land at the Lands Department are not computerised, nor are records of tenancy agreements. This causes difficulties in

accurately determining which land is actually government owned, and in determining the legitimacy of claimed tenancies and land titles. According to the Agriculture Census of 2001 (NSO, 2003), 80.4% of the agricultural land area cultivated is rented, with only 19.5% being occupied by the farmer that owns it. This structure of ownership has hardly changed over the years since the state has maintained the status quo. In addition, land lords, as well as tenants, tend to hold on to their property as a means of investment in the hope that someday their property might qualify for urban development. Farmers also tend to divide their land equally amongst all their children to further induce fragmentation.

***Agricultural Leases***

Tenancy rights are inherited in similar manner to ownership and without obligation of informing the landlord. Land (both government and privately owned land) is normally automatically re-let to the existing tenant or his/her descendants (in accordance with the Agricultural Leases (Re-letting) Act). Drawn up in 1967, this law effectively impedes the eviction of tenants or any substantial increases of the rent, even on privately owned land. Given the very cheap prices at which land is rented, tenants tend to hold on to their land, resulting in a dire shortage of land on which young farmers can start an agricultural activity. This attitude of land banking is being reinforced by the prospects of the strong land speculation. The exorbitantly high land prices for agricultural land, precludes potential entrepreneurs not only from acquiring their own land for agricultural purposes but also from attaining an equitable return on their investment. Thus the present land tenure system, which is meant to protect farmers and agriculture, is actually proving to be a heavy deterrent to genuine new farming entrants. The land tenure system is further complicated by the fact that land use and rent policies are the remit of other ministries that also act independently of agricultural policy.

**Table 4. Distribution of agricultural holdings and of UAA by size class of UAA**

| Size of holding by UAA (ha) | No of holdings | Distribution of UAA (ha) by size class of UAA (ha) |
|---|---|---|
| 0 | 189 | - |
| >0 - <0.5 | 5,331 | 1,331 |
| 0.5 - <1 | 2,572 | 1,754 |
| 1 - <2 | 1,782 | 2,483 |
| 2 - <5 | 966 | 2,919 |
| 5 and over | 231 | 1,766 |
| Total | 11,072 | 10,254 |

*Source: NSO, 2005.*

***Human capital and skill base***

A particular characteristic of the Maltese agricultural labour force is that of an aging farming population whereby for every farmer under the age of 35 there are 10 farmers of 55 years or above. This trend is expected to continue in the future as no particular influx of young farmers is expected.

The skill base of the agricultural labour force is mainly derived from practical experience passed on from father to son or gathered on the field and through peers. The 2001 Agricultural Census in fact indicates that 78.9% of farmers attained their farming skills in this manner. Only 3.8% were exposed to some form of training. This contrasts sharply with the 17.5% of the EU15. This situation demands correction as its implications are various. Innovation and entrepreneurship are lacking, the copy-cat attitude between farmers is quite pronounced even when practices are not amenable to the local characteristics, and there is little knowledge of the spin off effects of certain agricultural practices. This highlights a requirement for the provision of Farm Advisory Services that shall also provide training sessions not only of a formal nature, but also tailored to suit their working patterns and address specific issues.

***Education in Agriculture***

Since 1993, with the setting up of the Institute of Agriculture by the University of Malta, courses at tertiary level in agriculture started being available. However, there is a tendency is for students not to return to agriculture on terminating their studies. Instead they tend to be absorbed by the public or private sector. Formal education with a more practical slant is provided by the Agri-business Institute of MCAST through courses designed to equip students with a range of vocational skills in various agricultural activities. However, it is felt that the available formal training is not thoroughly addressing the actual and emerging needs of the sector such as the need for innovative farming and animal breeding and in carrying out agri-business.

## 5. Fisheries sector

### A. The Fishing Grounds

The Maltese Islands lie on the south-western extremity of an extensive shelf over which the water does not exceed one hundred fathoms in depth which extends southwards from the eastern end of Sicily. This area is not rich and major bottom fisheries lie within depths of less than fifty fathoms. In this respect Malta is fortunate as it is situated on the western extremity of a large platform over which the depths vary from twenty to fifty fathoms. In the north-east this platform is barely four miles wide and it is less than this on the southern and western coasts except in the vicinity of Filfla. Eastwards however, it is more extensive and includes the shallow Hurd Bank which is of great importance to the fishing industry. Beyond the hundred fathom line the bottom slopes rapidly into deeper water arid within a short distance depths of four to six hundred fathoms are reached. Since the bottom fisheries are largely restricted to areas in which the sea is less than fifty fathoms in depth, the fishing intensity on tire platform surrounding the island is, high.

The surface waters are also exploited, but even in these fisheries the depth of the water is an important consideration. The ‘lampara’ units, which use a purse seine in conjunction with a powerful light, invariably operate over the shallow banks. On the other hand, the seasonal “kannizati” fishery, in which the fish collect around floats set at regular interval by the fishermen, extends into water up to six hundred fathoms in depth.

### B. Fishing Centres

The island of Malta consists of a low, tilted plateau of tertiary limestone. The western coastline is guarded by a wall of cliffs, but these are absent in the south-east. The coast is well indented on the north-east and south-east sides, but on the western coast inlets are fewer and are less accessible from the land. The facilities in the Grand Harbour are commercially orientated and do not particularly cater for fishermen. On the other hand, the fishing villages are not so well equipped and it is generally necessary to bring the boats ashore in rough weather.

The most important fishing centre is Marsa’xlokk. It is also the only other harbour available to the industry that can be best developed as a port capable of handling the size of vessels that are now being operated. Other facilities must however also be provided even at the present level of operations.

Gozo, the most northern island in the group, is almost entirely surrounded by perpendicular cliffs. Sheltered inlets are few and there are only three fishing centres of importance. These are Mgarr, Xlendi and Marsalforn. The existing facilities are adequate for the size of vessel at present employed and the breakwater and quay at Mgarr could accommodate such larger vessels as may be introduced into the industry in the immediate future. In time, however, this centre should be developed to provide facilities for the fishermen in parallel with those offered at Marsaxlokk and the Grand Harbour.

***General Overview***

The Maltese fishing fleet may be categorized mainly as artisanal since only a small number of large fishing vessels operate on the high seas. The main difference between the full-time and artisanal categories is that the smaller craft are mostly engaged in coastal or small scale fisheries. The boundary between industrial and artisanal fisheries is not always well defined. In view of the regional standardization of the General Fisheries Council for the Mediterranean (GFCM), Maltese vessels over 15 metres in length are being considered as industrial. As the last available statistics, provided by the NSO, the total number of licensed fishing vessels was 2251 (1888 in Malta and 363 in Gozo). Out of these 2251 vessels only 62 qualify as industrial vessels (i.e. over 15m length). These industrial vessels are mainly trawlers, long-liners and netters. The rest could be considered as multi-purpose since they undertake all types of fishing - although on a smaller scale. It is estimated that the fishing industry as a whole supports the livelihood of at least 2,500 persons through actual fishing, marketing of fish and servicing of the fleet.

Due to their commercial value, the most targeted species are Dolphin Fish (Coryphaena hippurus), Blue Fin Tuna (Thunnus thynnus), Swordfish (Xiphias gladius), Stone Bass (Polyprion americanus) and species in the Sparidae and Scorpaenidae families, such as Dentex (Dentex dentex), Common Sea Bream (Pagrus pagrus) and Scorpion fish (Scorpaena porcus). In all instances these are caught by longlines. Other demersal species such as King Prawns (Artisteus antennatus), Shrimps (Parapenaeus longirostris), Hake (Merluccis merluccius), Red Mullet (Mullus barbatus /surmuletus), Octopus (Octopus vulgaris) and various other species including Skates and Rays are caught by trawling.

***Bluefin Tuna (Thunnus thynnus)***

The bluefin tuna fishing season starts during the month of May and extends until July. An upsurge in bluefin tuna landings came about as a result of the tapping of the Japanese market in 1989. In 1998 bluefin tuna were targeted by 52 Multi-Purpose Vessels (MPV) ranging from 10 metres upwards, involving about 150 full-time and part-time fishermen. The total landings were 244,749 kgs of which about 45% were exported. A decrease in landings from 1995 onwards may be mainly attributed to the large presence of foreign and very efficient tuna purse seiners just off the Maltese Islands. Fishing is undertaken to the West, South and South East of Malta between the 35th and 36th parallels within an area of approximately 2,000 sq. miles. At the beginning of the season (May) the greatest fishing effort is undertaken mainly in the south west area of the region and consequently further to the east according to the normal movement of bluefin tuna. The season ends in July. During this season the main landing zones are Marsaxlokk and. Marsascala in Malta, whilst that in Gozo is Mgarr.

***Dolphin Fish (Corphaena hippurus)***

The dolphin fish season extends from September to November. Up to a few years ago it was actually the most important fishery due to its traditional appeal locally and the abundance of catches that regularly occurred each year. About 100 sites are allotted by the Department of Fisheries & Aquaculture almost all around the island except for a corridor within the SE and SSE which is kept free from lampuki FADs so that swordfish fishing can be undertaken. Sites start from 7 miles offshore at intervals of one half or three quarters of a mile between each site, depending on the district. The total number of boats involved is 111 of which 83 belong to Maltese fishermen, whilst the rest belong to Gozitan fishermen. The approximate number of fishermen, including part-timers, employed in this fishery is around 700.

***Swordfish (Xiphias gladius)***

Swordfish is targeted throughout the year, although in varying degrees and for different reasons. The peak period is from late June to August when boats revert from bluefin tuna to swordfish, prior to starting operations for dolphin fish, from September onwards. Swordfish started making a big impact on local fisheries from 1968 onwards, and with the opening of foreign markets, particularly Italy, and the upsurge in tourist arrivals, the effort was increased.

There has been a downward trend in catches in not only that stocks have diminished through over-fishing by both local and foreign fishermen (especially through the use of drift nets by the latter), but because there has been a pronounced shift to targeting blue fin tuna during May, June and July to meet the demands of the more rewarding foreign markets. However, in spite of this decline, swordfish still represent a constant 7% of the total local annual landings. Only 10 longliners are equipped solely with swordfish longlines, the rest adapt their gear according to different seasonal fisheries. During the peak period as many as 50/60 vessels may actually target swordfish and this would involve about 250 full-time and part-time fishermen.

Although swordfish can be found all around the Maltese islands, the main effort is always to the SW and SE particularly since the zone to the north is shared with Sicilian fishermen and consequently the area is limited to a maximum of 20-25 miles offshore. Furthermore the northern zone, is nearly always full of traffic, which constitutes a constant hazard. The main fishing port at Marsaxlokk, in the south east of Malta, has unlimited and less congested boundaries towards the West, South and East, making southern operations preferable. It should be noted that during the summer months, the larger boats set their tines at least 50 miles to the south of the Maltese islands.

***Demersal Species***

Demersal fishing is undertaken with different types of gear, namely gillnets, trammel nets, bottom trawl nets, longlines and traps. Apart from traps, all the other gear is mainly used during the winter months when the weather does not allow long term fishing on the high seas.

***Gillnets & Trammel nets***

Trammel nets constitute bottom set nets made with three walls of netting, the two outer walls being of approx. 140mm mesh size knot to knot, whilst the middle wall has a mesh size of 22 or 28mm knot to knot according to targeted species. They are used mainly to catch red and striped mullets (Mullus barbatus and Mullus surmuletus), and species belonging to the Sparidae family (Pagellus spp; Oblada melanura; Pagrus pagrus, etc.) and Scorpaenidae (Scorpaena spp). The main fishing area is to the northern part of the island, in areas where the depth is in the 20 - 40 metre range. This activity is undertaken by approximately 100-150 vessels of under 12 metres length. Usually the crew is composed of 2 persons.

Combined gillnet trammel nets are composed of two different nets. On the upper part there is a gillnet which is attached to a trammel net. This combination allows for mid-water species such as Bogue (Boops boops), Chub Mackerel (Scomber japonicus), Horse Mackerel (Trachurus trachurus), and Scad (Trachurus mediterraneus) to be caught during spring/summer. Virtually only bona fide full-time fishermen are issued with a license to use this gear.

***Bottom Trawling***

Due to the complexity of the local market, trawling is also seasonal, in the sense that certain species fetch good prices at particular periods of the year. Consequently the main trend is to undertake deep sea trawling during the summer months, when the main targeted species are King Prawns, Prawns and Norway-Lobster. (When targeting king prawns there is almost no by-catch, except for a few Greater Forkbeard (Phycis blennoides) and some Common Sole (Solea vulgaris). During the winter months operations are mainly conducted in waters under 200 metres deep where species are more abundant and varied, although there are also periods when trawling is undertaken in areas where the depth is between 200 and 300 metres where catches include King Prawns, Shrimps, Hake, Red mullet and some other species. There are 12 licensed bottom trawlers in Malta which operate in areas well within the 25 mile fishing limit mainly due to the availability of good trawling grounds quite near the coast. In all cases the nets used are the Mazzara type of otter trawls (0TB) that are adjusted according to the terrain in which operations are being conducted.

***Bottom Longlining***

Bream (Pagellus spp), Dentex (Dentex dentex), Stone bass (Polyprion americanus), Grouper (Epinephelus guaza) and Common Sea Bream (Pagrus pagrus) are the main targeted species for this type of fishery. The gears used are bottom set longlines. Three different types of longlines with different hook size are used, depending on the targeted species. Pandora, dentex and common sea bream are seasonally targeted between the periods January - May, and August - October. Vessels are usually longer than 10 metres. Approximately 20 vessels are engaged in this fishery involving about 60 fishermen. Wreckfish and Stone bass fishing is also seasonal. The main effort is conducted in the periods January - May and July - October. The bulk is consumed locally, but occasional exports are not uncommon. Approximately 10 vessels are involved in this fishery employing about 40 fishermen.

***Traps***

Traps are used to catch a wide range of demersal species and are constructed in different shapes and sizes according to the species being targeted. The material used to construct these traps also varies according to species. For species such as the Moray eel (Muraena helena), Octopus (Octopus vulgaris) and Lobster (Palinurus elephas) the material used is chicken wire netting, whilst for Bogue (Boops boops), Picarel (Spicara smaris) and similar species, the material used is cane strips or special reeds which are imported. Shapes also vary according to the migratory behaviour of the targeted species, meaning that for benthic species the shape would be rectangular, whilst oval and bell shaped traps are used for mid-water species.

There are approximately 180 traditional vessels of the luzzu and kajjik type, with lengths of under 10 metres, involving one or two fishermen per boat undertaking this type of fishing. The product is always consumed locally and sold as fresh.

***Coastal Pelagic Fishing - Lampara***

Coastal pelagic fishing by purse seining has been practiced in the Maltese island since 1930 when “Lampara” fishing was first introduced, but since the 60’s the effort became minimal and subsequent catches insignificant. Before the advent of large scale targeting of swordfish and tuna and the introduction of demersal species such as Hake and Red Mullet on a large scale, the local market used to absorb all the catches, especially Chub mackerel, which was then, along with the Dolphin fish, one of the most sought after species. These species are now caught by purse seining, the nets being between 400 and 500 metres long with a constant mesh size of 23mm knot to knot.

The term “Lampara” is used because fishermen use strong lights as an FAD to attract fish. Lampara fishing is undertaken throughout the year except for the period from September to December when these boats target the Dolphin fish. Although catches are more or less constant, the peak period is during May.
At present there are only six purse seiners based in Marsaxlokk (Malta) and Mgarr (Gozo), who undertake this fishery, with the main targeted species being the Chub mackerel which is still marketable to a certain degree. Non marketable by-catches of sardines and anchovy are returned to the sea. Normally from eight to ten fishermen are employed on each boat.

***Driftnets***

Small driftnets are used during particular periods of the year (November to February) when small pelagic species such as Little Tunny (Euthynnus alletteratus) and Frigate mackerel (Auxis thazard) migrate close to the Maltese coast. In addition Saddled Bream (Oblada melanura) is occasionally targeted. Each net is usually about 200 - 250 metres long with a constant mesh size of about 140mm. Approximately 50 small vessels employing one or two persons per craft take part in this fishery.

### *General Vessel Statistics*

**Table a. Full time vessels by type**

| | Trawler | MPV | Luzzu | Kajjik | Frilla | Bimbu | Other | Total |
|---|---|---|---|---|---|---|---|---|
| Malta | 13 | 809 | 84 | 262 | 25 | 36 | 17 | 1246 |
| Gozo | 3 | 125 | 34 | 62 | 0 | 4 | 12 | 240 |
| Total | 16 | 934 | 118 | 324 | 25 | 40 | 29 | 1486 |

**Table b. Full time vessels by length and type**

| | <5m | 5.0-<10.0m | 10.0-<15.0m | >15.0m | Total |
|---|---|---|---|---|---|
| Trawler | 0 | 0 | 0 | 16 | 16 |
| MPV | 58 | 734 | 101 | 41 | 934 |
| Luzzu | 42 | 267 | 14 | 1 | 324 |
| Kajjik | 629 | 254 | 0 | 0 | 883 |
| Firilla | 6 | 19 | 0 | 0 | 25 |
| Bimbu | 4 | 36 | 0 | 0 | 40 |
| Other | 11 | 12 | 2 | 4 | 29 |

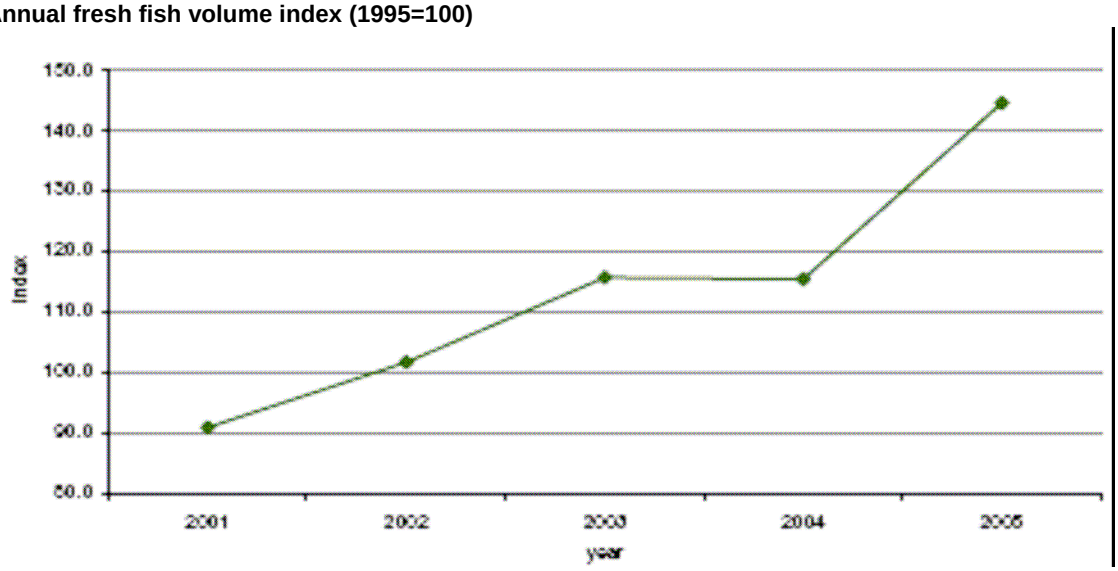
**Table c. Fishing vessels by licence and port**

| Malta Ports | MFA | MFB | MFC | Total |
|---|---|---|---|---|
| Vallette Area | 54 | 171 | 221 | 446 |
| Southwest Area | 217 | 290 | 335 | 842 |
| West Area | 7 | 68 | 78 | 153 |
| North Notheast Area | 45 | 211 | 184 | 440 |
| Other Malta | 3 | 2 | 2 | 7 |
| Malta | 326 | 742 | 820 | 1888 |
| Gozo & Comino | 106 | 251 | 6 | 363 |

**Table d. Annual volume (tonnes) of fish landings at the official market**

| | 2001 | 2002 | 2003 | 2004 | 2005 |
|---|---|---|---|---|---|
| Total | 841 | 941 | 1,070 | 1,068 | 1,337 |
| Shrimp | 36 | 29 | 37 | 26 | 30 |
| Stone Bass | 23 | 47 | 33 | 31 | 24 |
| Dorado | 303 | 347 | 507 | 473 | 447 |
| Dog-Fish | 17 | 24 | 17 | 20 | 19 |
| Swordfish | 78 | 190 | 134 | 174 | 323 |
| Blue Fin Tuna | 189 | 176 | 220 | 228 | 301 |
| Bogue | 27 | 16 | 18 | 16 | 21 |
| Other Species | 168 | 112 | 104 | 100 | 171 |

**Annual fresh fish volume index (1995=100)**




### C. Fish Markets

Whereas traditionally the Dolphin Fish was the backbone of the local fishing industry, during the last ten years there has been a marked shift towards targeting more lucrative species such as the Blue Fin and Swordfish. The two main reasons for this new trend are the relatively low price fetched for Dolphin Fish during the glut period and the tapping of foreign markets for Blue Fin and Swordfish. Also, the upsurge in tourist arrivals has opened new markets for prized fish. The main landing sites in Malta are Marsaxlokk Harbour and the Wholesale Fishmarket in Valletta, whilst Mgarr Harbour is the main landing site in Gozo.

Legislation lays down that all catches landed by fishermen is to be sold through the official Wholesale Fishmarket in Valletta. Fish is sold by public auction “viva voce” by licensed middlemen (Pitkala) on behalf of fishermen, and who are in turn remunerated by being allotted 6.3% of the total value of each fisherman’s catch. All sales are supervised by Fisheries Officers. This is not applicable to the island of Gozo because there is no official flshmarket. Also although sales are conducted by pitkala, auctioning is not “a viva voce”, the difference being in the different traditional method of conducting certain transactions in the sister island.

***Fishermen***

As at end 2005, the total registered fishing population was 1466, according to NSO official figures. Out of these, the number of registered gainfully employed full-time fishermen was 364. Full-time is the term used for fishermen whose main income is derived solely from fishing. This number has to be seen in the context that most fishermen own more than one craft. It must be pointed out that fishing is mainly seasonal and as a consequence most full-time fishermen own at least one small and one large vessel which enable them to practice off-shore fishing during the milder seasons and coastal or inshore activities during the winter months. There are about 1102 part-time fishermen and their contribution towards the industry is limited. Some of the most important characteristics of the Maltese fishing population that emerged from the 2005 Census were:

- The age of 60% of the full-time fishermen was under 45.
- Over 60% of the part-time fishermen were aged over 45.

***Craft Ownership***

Of the total number of 2251 fishing vessels, 1888 or 74% were registered as being owned by fishermen residing in Malta. For the Maltese islands, the most popular were the MPV and kajjik and MFV's at 41.5% and 39.2% of surveyed craft. The 16 trawlers in use in Malta and Gozo represent but 0.7% of the total fishing vessels.

***Fisheries Status***

Maltese and Gozitan fishermen depend on fish stocks that lie both inside and outside the present 25 mile fishery zone. The lack of information concerning the actual extent of Malta's indigenous fish stocks or the migratory species that pass seasonally through its waters militate against defining a viable strategy for the development of the fishing industry. It would therefore seem wise to plan on the general assumption that there is a serious imbalance between available resources and fishing capacity throughout the Mediterranean. Thus, whilst there is little room for development of the fishery in the sense of increasing overall catches, a strategy for consolidation through conserving what stocks remain in order to husband them in future generations also conform with the European Union's view that there is a serious imbalance between the available resources fishing capacity throughout Members'waters, including those in the Mediterranean. It is to be noted that rather than continuing to rely on traditional conservation techniques based on a total allowable catch for each constituent resource stock, there appears to be a stronger emphasis on the obtaining of an optimum balance between fishing capacity and the resource against which it is directed.

In the background that fishing in the Maltese islands has continued for centuries with long traditions, and forms an important part of the islands' heritage and social fabric. This sector is locally significant in being the main source of fresh fish, but more importantly, in common with many maritime countries and particularly island states, has a political influence that far outweighs its contribution to the national economy. These factors, in combination with Malta's strategic position regarding pelagic tuna, swordfish and lampuki, suggest that Malta should not fail to protect prevailing fishing interests including that of conserving resources.

## III - Agricultural and Food policies

The effectiveness of government policies in agriculture have often been criticised because the objectives were considered ambitious and not so cognisant of man-made constraints in the form of negative side-effects arising from the same policies. Various authorities have in fact indicated that one of the principal reasons for this sector's past inability to meet its objectives relates more to the aims of these objectives and policy application, rather than to poor performance of the sector.

Typical to small island states, even if economic policies highlighted the development of existing resources such as agriculture, there has nevertheless prevailed an ongoing drive in favour of tertiary services, primarily for tourism and the offshore sector. Past inaction to increase competitiveness as well as promote quality and niche marketing, compounded by the lack of professional personnel and qualified advisory services, has lead to a dearth of a structured sustainable long term approach for the sector. This consequently advocates a more sustained integrated policy approach that would not only promote a holistic maximization of available resources, but also amalgamate the practising with science so as to prioritize appropriate technical and capital investments.

The Rural Development Plans for 2004-2006 and 2007-2013 have been strategically compiled in such a way so as to encourage the multifunctionality dimension of Maltese agriculture coupled with quality production and sector sustainability. The rural sector should take the opportunities available in the various measures to organise itself in producers organisations and in local action groups to attain the necessary tools and assistance to gear towards the long term objectives.

## 1. Land Use Planning

The smallness of the islands, the high population density and the transition experienced in the last decades, from a predominantly agrarian society to industrialised and urban communities have led to significant change in land use patterns. Expanding urban settlements and new built-up areas led to the coalescence of expanding towns and villages. This had many effects, from the creation of the island's major conurbation around the harbour area in the northeast of Malta, to the loss of the distinct identity of individual towns and villages, a reduction in open countryside, damage to natural habitats and water catchments and the scarring of traditional landscape. In this context the transition from rural areas to urban areas is blurred. Although areas for development were earmarked in the Structure Plan of 1990, some land within the limit of development is still used for agricultural purposes whilst new built up zones are scattered outside designated development zones and in the countryside. Urbanisation has also meant that a number of farms got encroached by built up areas.

## 2. Rural Development

Malta became a full member state within the European Union in May 2004. On the 23rd June 2004, the first Rural Development Plan for Malta was approved. This plan was designed at establishing a concrete base platform through which the Maltese agriculture sector could evolve and develop. The plan provided for the growth and development of the sector in a sustainable manner applying guidelines and procedures common to the rest of the other European Member States. It recommended that the overall strategy for Maltese agriculture should focus on the development and specialisation of agricultural *niche* quality products that are best suited for the Maltese agro-ecosystems. The 2004-2006 Rural Development Plan was the first ever serious attempt to put together a series of measures capable of acting and reacting in synchronization to achieve measurable results.

The second Rural Development Plan 2007-2013 aspires to implement a follow-up strategy that builds upon the achievements and milestones of first Rural Development Plan. It seeks to offer a more deliverable programme that is well aware of the strengths of the rural sector while at the same time addressing relevant weaknesses in order to attain a more sustainable development of agriculture. The inclusion of past as well as recent experiences both from a technical and administrative point of view will strengthen the commitment in focusing on present and future needs of all stakeholders as well on current European and world trends.

The 2007-2013 Rural Development Plan has the following core objectives:

1) Farm modernisation with emphasis on increasing value added and quality plus cooperation between producers, and collaboration with the Agro industry sector, further supported by education and provision of qualified advise to the farming community.
2) Agro-environmental measures with respect to sustainable environmental management.
3) Improvement in the quality of life in rural areas.

These initiatives are spread over the various measures and are nested within the different axes that make up the programme. Achievement of these objectives lies on the extent of uptake and hence participation of the rural community and on the effective and efficient processing of applications by the Managing Authority. This Rural Development Plan has to be envisaged as a link within a larger complex that contributes to the gradual evolution of the rural community in line with other European rural communities. There is an obvious "catch up" factor as compared to the rest of the European member states that the rural community has to go through to develop and mature in mentality, organisation and implementation.

The expectations from the plan have to be realistic and not confounded. Issues of cultural attitudes, land ownership / tenure, entry of new operators and lack of properly functional markets do not fall within the remit of the rural development plan and they all require amendments to Maltese legislation and practices to improve the prevailing situation. In this respect, the rural development plan can act as a catalyst to achieve necessary reforms.

## 3. Agriculture and environment

Sustainable environmental stewardship is rapidly becoming a high priority with the advent of EU funding opportunities. However, the interactions linking environmental and financial sustainability in agriculture and agri-processing are still not well understood. The development of activities that are complementary to agriculture and agro-processing with environmental compatibility are still in initial stages and there remains untapped potential in this area. The effort to promote rural areas for recreation, culture, and to enhance Malta's international tourist effort is very recent and as yet needs to take root and develop at all levels of decision-making and implementation.

The most important biophysical factors driving marginalisation of the agricultural landscape in the Maltese Islands are land fragmentation, lack of farm access, topographical position and poor soil quality (Camilleri, 2005). Shallow soils, high abundance of large stones, exposed bedrock and poor tilt are among the main soil-related factors that contribute to land abandonment. Land abandonment generally takes place on marginal terraced slopes that need a lot of maintenance, and where poor soils, difficult access and small size of fields make the farmers' work uneconomical. In addition, some sources claim that soil salinity also encourages the abandonment of agricultural land, however, the deposition of salts from blown sea-spray is not likely to be a significant factor influencing the abandonment of these small, narrow strips of coastal zone agricultural fields exposed to strong winds. Rather, it is the poor access to these fields, and the general non-viability of agricultural production that make these areas unfavourable. Large expanses of irrigated valleys that are equally effected by salinity are characterised by a low incidence of land abandonment. Camilleri (2005) reported that the lack of water resources is one of the major factors inducing land abandonment in coastal areas. Although there are problems contributing to the long term decline of agriculture that cannot be effectively met through interventions under the Rural Development Plan, there are measures with a potentially high degree of relevance and applicability and which could address a number of important target groups and needs. The target groups include agricultural business and its labour force, agro-processors, providers of training and advisory services, local authorities and NGOs, tourism and recreations business operators, tourists, and the population in general. The needs addressed span from the improvement of competitiveness in agriculture to environmental enhancements to ameliorating tourism and recreational facilities in rural areas.

As part of the implementation of Council Directive 79/409/EEC of 2 April 1979 on the conservation of wild birds and Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora, Malta has to date proposed 26 terrestrial Special Areas of Conservation (SACs) as Natura 2000 sites, covering 12.5% of the land area of the Maltese Islands. A considerable amount of agricultural land is commonly found within candidate Natura 2000 sites. Therefore, in order to preserve the natural environment and landscape, and to protect and improve natural resources, as required by Natura 2000 designation, agricultural practices within such sites shall need to be brought in line with environmental requirements and associated legislative obligations. In order to diminish the loss of biodiversity till the year 2010, the protection and management plans in respect of Natura 2000 sites assisted by agro-environmental measures will aid to increase the quality of life in rural areas assisted by complementary measures that lead to a more holistic approach that encompasses economic, social and ecological issues in attaining a sustainable rural sector.

## IV - Conclusion

In the Maltese islands, a Mediterranean climate with semi-arid characteristics has obliged the adoption of dryland farming. In such a limited rain-fed system, making efficient use of the limited water was fundamental for agricultural production. Through history, the progress of society was affected by the agricultural base in that an always increasing population required food to survive. During the country's evolution, transition of agricultural land and workers also met other development needs, and planning policy, directly or indirectly, always reserved a role for the agricultural sector.

Observations of agriculture in the Maltese Islands suggest that farming systems changed at varying rates over time in response not only to natural conditions that determined what crops would grow or not, but also to a wide range of production factors related to availability and cost of land, labour, input materials and the prevailing market situation. While other natural factors, geology, topography, climate and soil types provided the basis for land utilisation, the cumulative results of long continued action plus the interaction of historical, political, economic and technological factors not only influenced the changing patterns of land use, but dominated over factors of production.

The pressure on the land resource has now virtually eliminated grazing and obliged intensive livestock production. Despite proving more resilient than crop production, utter dependence on feed imports would tend to create disadvantages in competing with livestock products from other countries. Updated managerial and technical inputs could improve the situation for crop production as well, but the size constraint still restricts economic viability. Nevertheless, improvement in the management of land and water resources remains an ongoing exercise, whilst the introduction of high-yielding cost-effective techniques, amelioration in the agricultural marketing systems, plus review and rationalisation of land tenure, constitute prevailing exigencies. Mata's entry to the EU, with its associated opportunities for funding, has provided close to €140,000,000 for Rural Development measures as from 2004 to 2013, and their focus on investments, agri-environmental and quality of life improvements in rural areas should help attain desired sustainability. Ultimately, however, the resultant transformations in the rural sector shall but reflect the overall supporting framework and associated efforts to promote development in this area.

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