MALTA COUNTRY REPORT

SUSTAINABLE RURAL LAND MANAGEMENT IN THE MALTESE ISLANDS: AN EVALUATION OF POLICY INSTRUMENTS AND FUTURE NEEDS

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Abstract

The structure of the Maltese economy is the founding result of its geographic location and limited natural resources, one of which is the agricultural area. Agriculture is a major land user and despite its limited economic size, Malta's agriculture provide significant basis of the national consumption pattern. Different authorities and institutional bodies perceived the importance of agriculture, as these have developed policies by which the agricultural sector could be safeguarded from urban development and in encouraging in the reduction of land abandonment.

The aim of this article is to analyse past and present policies being the PA structure plan (Land use and development control), CAMP (Integrated Costal Area Management), the Rural Development Plan and the Maltese Code of Good Agricultural Practice. However, it recommends a Sustainable Rural Development Program, which gives an evaluation of the policy needed for the future. Such policy could address the ecological integrity, which should minimize and mitigate adverse environmental impacts, ensuring a sustainable use of agriculture as a resource and conserve and protects the rural landscape and land speculation, amongst others. Finally, this paper concludes by questioning if there should be a more consistent, rationalised, streamlined approach to rural land use management.

Introduction

Rural land management within the Maltese archipelago is characterised by a number of problems, which are quite common to Mediterranean islands; acute competition for land, a variable, semi-arid, climatic regime, urban expansion, and a decreasing share of the GDP. Moreover, the growth of tourism now dominates the islands' economic fabric at the expense of agriculture. Malta's economic structure has long been based on the service sector (formerly military but now tourist-oriented) and this is largely due to limited natural resources. Maltese agriculture and fisheries now accounts for 2.8% of the GDP. This share increases to a little more than 6% if the whole agri-food chain is taken into consideration

(De Filippis *et al.* 2000). Despite this, Malta's agriculture still constitutes a significant share of the national consumption pattern and agriculture is still a major land user.

Utilised agricultural land in the Maltese islands totalled to 10,148.6 ha in 2001 (NSO, 2001) of which 85% is occupied by dry farming and the rest is irrigated. Almost 42% of the agricultural land is devoted to cereals, legumes and forage crops; vegetables account for 39% of the land, while greenhouses cover an area of less than 30 ha. Most of the agricultural land area lies in the western (32%) and in the northern (23%) districts.

Dry farming has been in retreat for several decades (Beeley, 1989) and the utilised agricultural land decreased by 43% during the period 1956 – 2001 (Fig. 1). Although a drastic reduction in agricultural land occurred in the past 45 years, an increase of 3.6% in the utilized agricultural area (UAA) was reported in the period 1990 – 2001 (COS, 1991; NSO, 2001). Increase in the UAA was observed in the north-west district possibly due to land reclamation and re-cultivation of abandoned land. The cultivation of abandoned or derelict agricultural land is encouraged in the Structure Plan Policies but the deposition of soil on natural habitats is prohibited (MEPA, 2003). Despite this, significant expanses of garigue have been reclaimed for agricultural use (Axiaq *et al.,* 1999). Examples of land reclamation of natural habitats include those at l-Aħrax tal-Mellieħa.

A decrease in the utilised agricultural land was experienced in the harbour districts possibly due to urbanisation, as shown in Fig. 2. The structure plan identifies urban sprawl as a key concern in the Maltese Islands. The most substantial growth of urban settlement occurred between 1968 and 1984, with most of the growth being concentrated in the north east of Malta around the harbour area, while the northern and western districts are the least affected by urbanisation (MEPA, 2003). Over the span of the last few decades the transition from a predominantly agrarian society to an urbanised community has resulted in a drastic change in land use patterns. The structure Plan aims to contain urban growth within existing and planned urban areas, however it recognises the need for residential farmhouses for full time farmers outside the development zone.

An important feature of Maltese agriculture is land fragmentation, which is mostly attributed to Maltese Laws of Inheritance. These divisions brought about a geographic landscape characterised by small and scattered plots of land. In fact, according to NSO (2001), 76% of the land holdings are less than one hectare in size. Land fragmentation has various negative consequences on the rural landscape including, the increased demand for access roads, limited application of modern agricultural techniques, marginal economic returns and hence, a greater risk of land abandonment. It is not surprising that most farmers now work on a part time basis (89%) while 55% of the farmers are over 50 years of age. Most of the structure plan policies on agricultural development adopted the employment status of the farmer and the size of the land holdings as criteria for development.

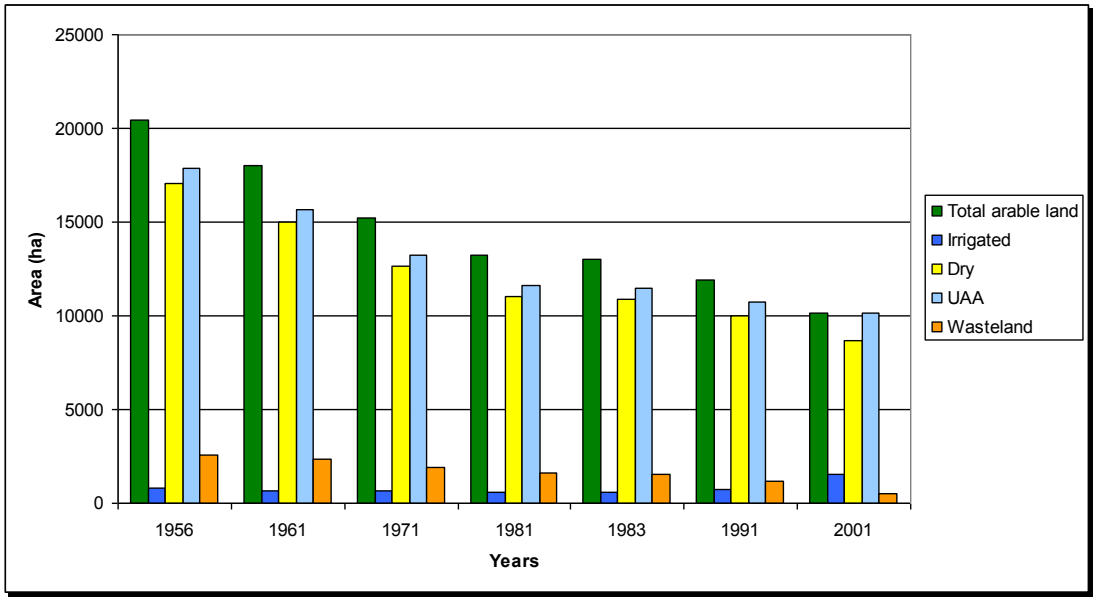


Fig. 1: Trend in Maltese agricultural land use
Source: Adapted from Camilleri, 2005

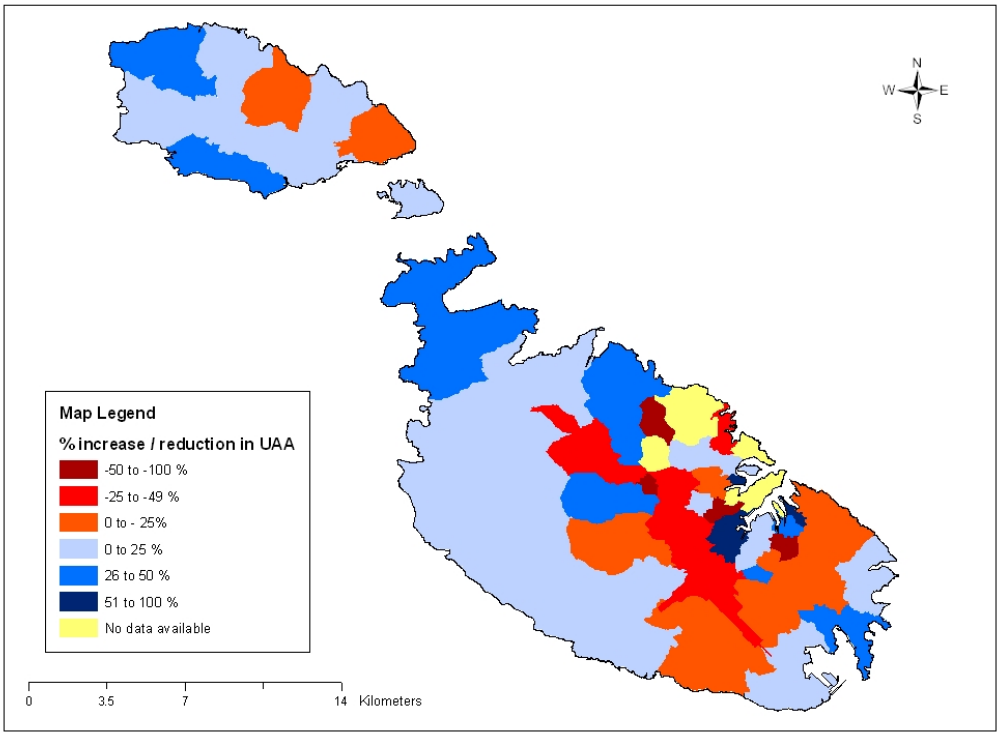


Fig. 2. An indicative trend of agricultural land use from 1991-2001

The rural environment on small islands is disproportionately vulnerable to land use pressures; brought about by economic development. Such pressures, however reach a maximum when successive waves of tourist development sweep over the islands (Shaw and Williams, 1994; Hall and Page, 1999). Small Island states, like Malta, tend to become increasingly dependant on tourism; more so than larger states (Ellul, 1999) and the tourist phenomenon has been largely responsible for major negative modifications of the local coastal environment, both through construction on the coast as well as through the environmental pressures exerted by tourists (Axiaq *et al.,* 1999).

On the other hand, this dependence on tourism has also contributed to fostering a new awareness of the rural environment where the landscape is now perceived as a tourist product. This provides an economic incentive for concerted conservation measures and forces local authorities to take a more serious view of planning, monitoring and market based incentives. In the absence of such instruments, the negative effects of tourism on the environment could, in the long run destroy tourism itself (Briguglio, 1996). Some of the more conspicuous products of this awareness of environmental obligations are: a more rigorous statutory planning framework (Malta Structure Plan 1990) and the introduction of a system of environment impact assessment as provided in the Environment Protection Act of 1991. Despite this, many environmental problems arising from tourism and urbanisation still persist, and are often associated with the absence of standards and ineffective monitoring.

The maintenance and promotion of the rural environment, as well as the production of more specialised and high-quality diversified foods, seem to have a positive effect on tourism. A perfect illustration of this is viticulture and the Maltese wine industry, which is important for tourism through the provision of local wines (De Fillippis *et al*., 2000). The development of organic farming can also be an important resource connected to tourism.

Prior to Malta's accession to the European Union agricultural policies were largely dominated by a traditional, inward-oriented approach, in which the basic functions of the industry were those of securing domestic supplies to the maximum extent possible. This superseded agricultural policy framework seemed to lack a long-term strategy and would have led to the virtual demise of Maltese agriculture if radical market liberalisation reforms were implemented.

Such a policy approach needed to be radically revised, with the aim of replacing intervention tools with different, more active, and selective forms of support, aimed at promoting a wider role for agriculture and food production. The system had to be moulded by an agricultural policy strongly oriented towards quality production, rural development, and environmental protection, in order to pursue both the survival of the Maltese agriculture, and the promotion of its-multifunctional role.

On accession the agriculture sector started to make part of the European model characterised by its multifunctional dimensions. The final goal of this sector is of transforming Maltese agriculture into a small-scale viable self-sustainable agriculture. The peculiarities of Maltese agricultural produce that will in due course be supplemented by branding, standards and quality, will render possible the realisation of the long-term sustainability of Maltese agriculture. It is also a government policy to rehabilitate encourage and revive traditional activities such as the development of the cottage agro-industry (MRAE, 2004). With the introduction of agri-environmental measures farmers are encouraged

to adopt more environmentally friendly practices and enhance special landscape features or valuable wildlife habitats. The potential for agri-environment schemes to contribute to a wide range of rural development objectives is recognised by the fact that they are now the only compulsory measures for EU Member States to introduce under the EC Rural Development Regulation.

Given these recent developments, the Maltese rural landscape has just started to respond to an additional set of socio-economic processes brought about by the recent accession to the European Union. Rural land use management, therefore, is changing at a rapid rate since it is now influenced by a set of policy instruments, which have had to respond to changing administrative needs. Four major policy instruments can be identified which are influencing, or have exerted some influence on the rural landscape. These are discussed in the discussion below.

Discussion

PA structure plan (Land use and development control): Malta's Structure Plan (and its associated Local Plans and Subject Plans) is, legally, the most important instrument for land use management on the islands. It was completed by December 1990 and is currently administered by MEPA (Malta Environment and Planning Authority), which, consequently, decides upon development control. This is crucially important in an island where land speculation has, potentially, huge financial repercussions.

The Structure Plan was also instrumental in delivering some much-needed land-use evaluation studies regarding the agricultural sector of the Maltese Islands and this process continues today. The Report of Survey, which preceded the Structure Plan, produced valuable maps of existing and, potentially good arable land. This document also identified the main socio-economic factors that conditioned agricultural development on the islands. In turn, such surveys were instrumental in generating policy statements that were enshrined in the final Structure Plan.

The Plan identifies Malta's land management problem as a situation in which

> "*rising standards of living and the increasing complexity of private and public sector business require increasingly more space in which to operate. Running counter to this is the fact that Malta is a small country with one of the highest national population densities in the world. Land is therefore a relatively scarce resource which needs to be managed and conserved with particular care*."
>
> (Structure Plan for the Maltese Islands, 1990)

In this respect, Malta's Structure Plan addresses two fundamental, and often conflicting, sets of issues, resource creation and resource management and protection. The rural sector is well represented in both of these. As mentioned above, valuable arable land has decreased drastically due to urban and per-urban expansion while the agricultural sector itself demands new development in terms of intensive agricultural activity. These include: glasshouse construction, development of new farm feedlot buildings, the extension of rural road networks etc. MEPA plays a crucial role in this regard by deciding on development permits often after commissioning environmental impact assessments.

Such decisions are often highly contentious and raise fundamental issues of sectoral competition and sustainability. A good illustration of this is the controversy surrounding the development of new, tourist

oriented, golf courses on the island. One of these was proposed at a location known as Tal-Virtu (limits of Rabat) and would have taken up (? hectares). Most of the farmers that would have been displaced by the project initiated a campaign of systematic opposition and managed to raise a considerable degree of public opposition to the project. In the end, MEPA decided to withhold development permits for the area. An interesting corollary is that the current prime minister stated, publicly, that three golf courses are considered to be necessary for the development of the tourist sector and that future development applications may be granted through Cabinet rather that MEPA (*Malta Independent* 22nd August 2004).

Despite current efforts to involve a greater degree of stakeholder participation in MEPA decisions, the organisation still tends to be largely top-down in its orientation. Public participation often occurs too late in the policy formulation, planning, and decision-making process and this has generated a series of negative public responses; ranging from apathy, fatalistic acceptance of the status quo, to outright hostility. Of course, it is quite understandable that, since MEPA has to deal with zoning issues, which have potentially considerable financial repercussions, the Authority may be very keen on projecting a detached, objective, image. Moreover, public participation within this context is often an unpalatable exercise where distinct winners and losers may be easily identified. Zoning decisions often generate a fair degree of controversy, but this attitude should not inhibit genuine stakeholder involvement at all stages of the planning process.

While many people view MEPA as an environmental champion, other people in the farming sector, who had been on the receiving end of some perceived quirky MEPA decisions, regard it with a considerable degree of scepticism. Anecdotes, which have been widely disseminated,[1] indicate that many farmers believe that MEPA regards the rural landscape more as a tourist product rather than a productive agricultural system and, as such, they perceive its rural expertise as somewhat questionable.

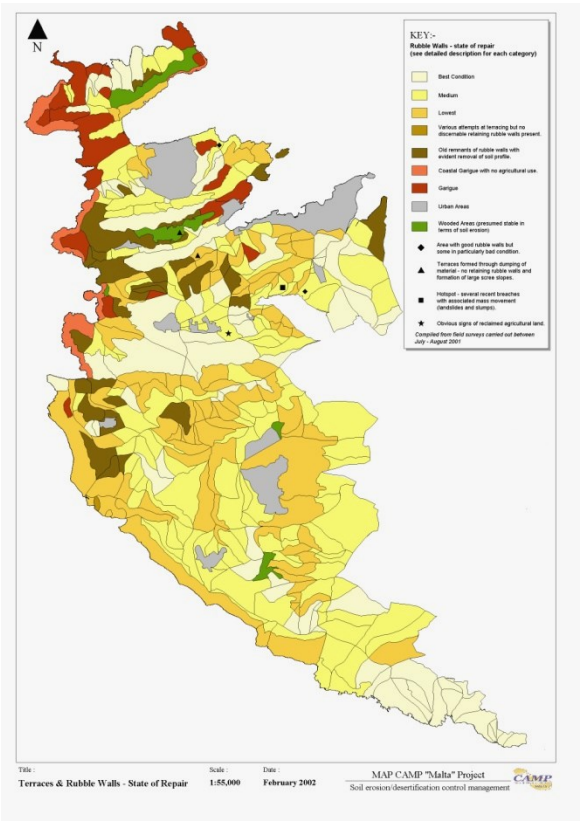
CAMP (Integrated Costal Area Management): MAP-CAMP (Mediterranean Action Plan - Coastal Area Management Programme) was launched in November 1999, and completed by June 2002. The Project, essentially, was an application of Integrated Coastal Area Management (ICAM) to the island's northwest coast. Within this framework, however, "Soil Erosion/Desertification Control Management" thematic activity focused on issues related to land degradation within the Maltese rural environment. The lead agency for this project was the Environment Protection Department; which has now been incorporated into MEPA. Soil erosion in the Maltese Islands has been recognised as a predominating desertification and land degradation process and a major threat to the sustainability of the agricultural sector. Malta's extensive terraces testify to an age-old practice of soil conservation and this has traditionally necessitated heavy investment in the maintenance of such terraces. The problem now is that some land degradation processes (fragmentation of land holdings, aging farmer population, land abandonment, insecurity of land tenure etc.) have resulted in terrace collapse and accelerated soil erosion (Role 1999).

The general objective of the Project activity therefore consisted in contributing to national efforts towards sustainable land management and environmental protection in Malta. This was achieved through:

[1] Many individuals within the farming community delight in recounting how MEPA obliged developers to plant screening trees around glasshouses, thus blocking out the desired sunlight!. Others criticise MEPA for stopping them from adding aggregate to their subsoil to deepen their soil profile and reduce water stress on their crops.

- Undertaking and completing systematic erosion/desertification surveys and mapping activities at different levels;
- Providing proposals for remedial measures and elaborating conservation/rehabilitation/protection recommendations for the implementation of global and site specific actions;
- Contributing to the protection, rehabilitation and rational exploitation of the rather limited soil resources, scenic beauty and biodiversity, by applying updated and adapted erosion/desertification control management strategies and techniques.

An Erosion Risk Map was one of the most important outputs of the project since this was meant to be used in targeting specific localities, which need immediate pre-emptive intervention. The mapping survey procedure consisted of the production of two sets of GIS mapping layers. The first set mainly identified and assessed physical parameters and processes, while a second set of layers, consisting of socio-economic factors (such as land use, cropping practices, urbanisation and state of rubble walls (Fig. 3) was superimposed to provide a Final Soil Erosion Risk map (Fig. 4).



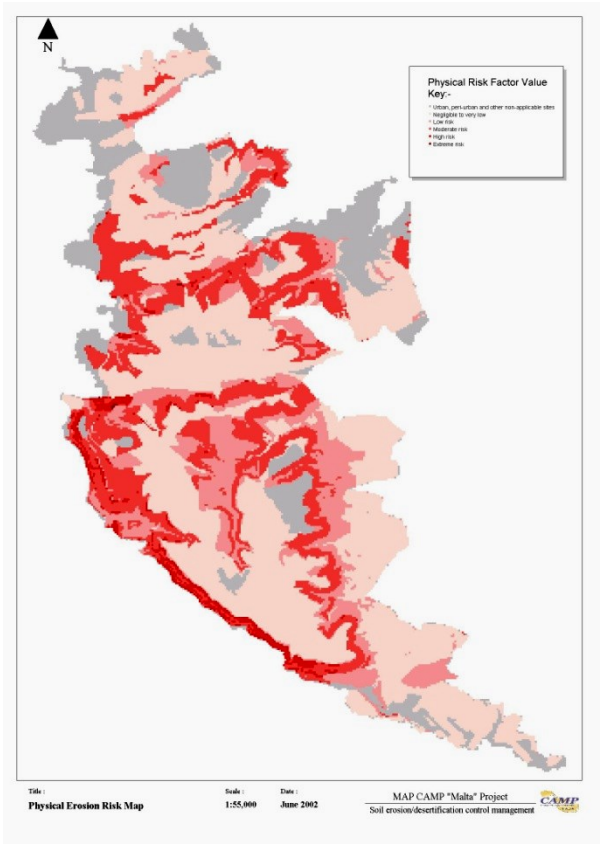


Fig. 3: CAMP – State of Dry Rubble Walls **Fig. 4: CAMP – Final Soil Erosion Risk Map**

CAMP's Soil Erosion thematic activity contained a very significant stakeholder input in all aspects of its implementation and this component delivered a vital bottom-up character to the study. To this effect, special emphasis was placed on formal and informal consultation with the Project stakeholders

(farmers, local authorities, agricultural extension officers, farmers' cooperatives, the scientific community and NGOs). This participatory approach yielded an excellent set of outputs:

- Individual farmers, Farmers' Cooperatives, and scientific input were essential for the initial determination of priority areas.
- Stakeholder input helped to clearly identify processes leading to soil erosion and land degradation.
- Sustainable remedial and preventive actions were also identified and evaluated.
- Participation was crucial in generating a final set of Key Issues, which were, subsequently linked to specific sets of priority actions.
- A set of sustainability indicators were also drawn up as a tool for the development of trends on erosion/desertification processes and control management strategies. The development of these indicators involved several discussions with the main land users/stakeholders who also endorsed the indicators.

The diagnostic analysis clearly showed that in the Northwest, soil erosion (as a desertification process) is a common phenomenon which needs urgent attention, especially in the above identified priority areas. Therefore, detailed technical recommendations for addressing the problem were elaborated and complemented by general recommendations for capacity building. It was felt that the most comprehensible format for the presentation of these findings was in the form of a series of tables that linked specific issues with focused action. A selection of these tables is presented as Table I. It should be noted that the tables reflect the basic principles of sustainable development and, in this respect, particular sets of key issues are classified according to Environmental Integrity, Social Equity, and Economic Feasibility. Other tables in the CAMP Final Document addressed these Key issues by relating them to targeted actions but they are not presented here because of limitations of space. Experience showed that such tables were easily legible to decision makers as well as stakeholders thus facilitating feedback.

The overall CAMP format had several promising elements in its structure: a bottom-up approach, a healthy dose of public participation, a vital integrative element, a project-oriented (rather than decision-oriented approach), a focus on sources of funding, as well as the identification of agencies that should have carried out the identified projects (which, after all, were largely suggested by members of that same agency!).

Despite all of this CAMP has been very poorly implemented. A major stumbling block was the fact that the lead agency that ran the project ceased to function as a governmental department and was absorbed into MEPA. This, effectively, rendered CAMP an administrative orphan with the consequence that CAMP could not be effectively marketed amongst key decision makers of governmental agencies. Another possibility is that the top decision makers of those agencies, which should have carried out the work, may have felt alienated from the CAMP process. Yet another problem lies in the lack of human and financial resources to implement the priority actions that were identified in all of the thematic activities. It is tragic to think that, despite the fact that CAMP delivered an impressive set of action plans tabulated according to perceived key issues and translated into identifiable projects, the project seems to be largely handicapped in terms of implementation.

Table 1 – CAMP Soil Erosion/Desertification control management thematic activity

Secure **Environmental Integrity** for the rural landscape into the foreseeable future

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Maintain rubble walls	Terraces and retaining rubble walls are an ancient source of agricultural capital which is being steadily eroded.	Marginal economic returns; land abandonment; fragmentation; speculation.	Entire NW	Immediate repairs to areas, which are most severely affected as identified in Erosion Risk Map.
Facilitate farmers' need to drain fields during severe storms	Watercourses are often obstructed by accumulations of material and this impedes normal drainage.	Watercourses often act as natural sinks and dumping grounds for all sorts of refuse; including agricultural refuse.	Fields located in low elevations	"Surgical" clearing of accumulations of refuse from watercourses to permit adequate drainage.
Safeguard the ecological integrity of watercourse habitats in agricultural areas	Conflict arises when watercourses are cleared since such sites are rich in biodiversity and are rare in the Maltese dry environment.	Some valley cleaning programs have been criticised for indiscriminate heavy-handed earthmoving exercises.	Watercourses and low lying areas	Train contractors and/or public workers in selective watercourse cleaning. Provide effective supervision during clearing operations.
Recover eroded soil from sediment traps located across watercourses	Eroded sediment is highly prized by farmers for soil replenishment and should be distributed equitably.	Some soil and other sediment is inevitably lost during storms and is often carried off to landfills along with unsorted debris.	Watercourses	Sort sediment from watercourses before disposal in landfills.

Ensure **Economic Viability** for the rural landscape sector

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Aid farmers to rebuild rubble walls and maintain field terraces	Terraces and retaining rubble walls are an ancient source of agricultural capital that is being steadily eroded.	Cost of rebuilding walls and terraces are often prohibitive and these are often allowed to fall into disrepair.	Entire NW	Consider financial and other aid packages to help farmers to rebuild rubble walls. Explore legal provisions for placing responsibility on owners.
Strengthen legislation and enforcement that prevents soil from being buried under new construction	Soil cannot be legally traded but an indirect market exists for the commodity.	Soil protection measures create economic anomalous situations, which may work against the spirit of the legislation.	Rural sector	Create an effective soil storage depot and distribution facility/s in the Dept. of Agriculture.
Prevent further fragmentation of field units	Laws of inheritance result in fragmentation of productive fields into marginal entities	Speculation; lack of agreement amongst beneficiaries of inheritances	Entire Maltese islands	Legal and economic provisions that discourage fragmentation while economic incentives need to be drafted to ensure the survival of viable farms and even consolidation of existing fragments.
Explore and invest in water-efficient irrigation systems	Irrigation water is costly and pushes up the price of agricultural produce. This problem is expected to become even more serious.	The islands are located in a semi-arid climatic zone and IPCC approved climatic models predict even longer periods of drought	Entire Maltese islands	Encourage drip irrigation, mulching, planting of drought resistant crops. Drafting of a drought mitigation and management plan. The use of second class water, should be promoted for irrigation.

Provide economic incentives for storage of surface water runoff	Surface storage of storm water runoff reduces the risk of soil erosion and provides water for irrigation during seasonal drought.	Sealing of surfaces because of urban and peri-urban expansion creates a higher coefficient of runoff. Roads also act as channels in rural areas.	Entire Maltese islands	Construction of storm water reservoirs needs to be addressed during road planning and culvert design. Farmers need to be involved at such stages and cost efficient solutions are very likely.
Provide economic incentives for constructions that permit aquifer recharge	Farmers compete with national domestic water supplier for scarce water from aquifers. Most farmers' complain that their wells have run dry.	Aquifer recharge has decreased substantially due to sealing of surfaces during urbanisation.	Entire Maltese islands	Partial responsibility for aquifer recharge may be shifted to the agricultural sector since it uses increasingly higher proportions of aquifer reserves. Studies need to explore the efficiency of combining such measures with soil conservation measures.

Ensure **Social Equity** for the rural community

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Empower farmers to rebuild and maintain rubble walls	Sound construction of rubble walls is an art which has virtually disappeared in Malta.	Farmer average age has increased steadily over the last few years; marginal earnings prohibit major capital expenditure on farms.	Entire Maltese islands	Support existing training courses aimed at teaching dry rubble wall construction. Gear such courses at retaining rubble walls which support terraces rather than cosmetic road verge walls.
Ensure greater security in land tenure to promote land stewardship	A firm link has been established between insecurity of tenure and soil erosion and land degradation.	Farmers with insecure tenure are far less likely to invest in serious soil conservation measures since they may not enjoy the returns from their investment.	Entire Maltese islands	Communicate to landowners and farmers their legal contractual responsibilities regarding leases and third party liability incurred from breached rubble walls.
Control recreational activity that leads to soil erosion	Some in/formal recreational activity contributes in/directly to soil erosion. Legal provisions and enforcement is lacking in some cases.	Off-road driving, building of hunting hides and trapping sites, snail foraging, etc. have been linked to soil erosion.	Entire Maltese islands	Enforce and strengthen current legislation regarding rubble-wall protection and off-road activity. Monitor and control spread of trapping sites. Enforce legal provisions regarding prohibition of trapping sites on state-owned land.
Ensure equitable access to water resources by farmers	Farmers complain that they are at a disadvantage when competing with national domestic water supplier. Most farmers' complain that their wells have run dry. Registration and control of boreholes is often by-passed.	Malta's climatic regime falls into the semi-arid zone and climatic instability is a daunting prospect. Growing demand for higher quality market garden produce and horticulture necessitates irrigation.	Entire Maltese islands	Explore possibilities offered by drought management techniques. Ensure greater efficiency in irrigation practices. Increase surface and underground stormwater storage facilities.

Source: Vella, Tanti, Role and Borg, (2003) - Integrated Coastal Area Management in Malta; MAP Tech Rep No. 138, UNEP/MAP Athens.

3. The Rural Development Plan

The aim of Malta's Rural Development Plan (RDP) is to co-ordinate in an integrated manner the natural, human and financial resources of the agricultural and rural communities of Malta with a view to ensuring the sustainable growth of the rural economy and the improvement of the rural way of life in a fair and balanced manner.

The Rural Development Plan consists of eight core groups for which financial aid is provided, these include the:

- Investment in Agricultural Holdings
- Processing and Marketing
- Producer Groups
- Agri-environment
- Ad Hoc Measure Providing Specific temporary support to full-time farmers
- Less Favoured Areas and Areas with Environmental Restrictions

Such schemes have been found to deliver significant benefits for the biodiversity and the natural environment. They provide support to farm incomes, employment and retain traditional rural skills, as well as to underpin a range of other economic activities such as farm tourism and the marketing of quality food products.

The Rural Development Plan contains specified agri-environment measures (Table II), for which payments to farmers are made to undertake the activities *"...which are compatible with the protection and improvement of the environment, the landscape and its features, natural resources, the soil and genetic diversity"* (Rural Development Plan).

Within the Rural Development Department there is Monitoring and Evaluation unit responsible for project-level and measure-level monitoring and the preparation of progress and annual reports. However the first report is due for next June 2005, and thus as yet no monitoring reports are available given that the RDP is currently still being implemented.

In the absence of an evaluation report, response to the agri-environmental measures can only be based on the number of applications received by the IACS department. The total number of farmers who applied for the agri-measures amounted to 725 farmers and covered an area of 16.42 hectares. When compared to the total number of register farmers only 5.1 % applied for financial aid under the agri-environmental scheme.

The reason for the low response to agri-environmental measures could be due to the number of undertakings which farmers were bound to follow in return for their annual payments. Farmers were obliged to enter in a form of a contractual obligation 'management agreement' for a minimum period of five years. These obligations include:

- The preparation of a "Whole Farm Management Plan", for all of their agricultural land.
- The keeping of appropriate farm records to a minimum standard.

- To comply with the verifiable standards present in the Code of Good Agriculture Practice.

To achieve these obligations the farmers were urged to consult a private professional since MRAE – RDD could not provide such service due to conflict of interest. Farmers perceived that such obligations were time consuming to prepare and they feared that they would not be reimbursed. Some farmers perceive the application process to be too complicated in some cases and that the obligations were difficult to compile and to implement. Although all possible efforts were done by MRAE to inform the public about the measures offered in the RDP, communication with the stakeholders was not effective. Rural development measures are prepared and offered by the RDD, the IACS department receives the applications and the payments are issued by the Paying agency.

This division of roles between the IACS department and the Paying agency confuses the farmers when they need to call at MRAE to ask questions or have some problems with the application, and this kept back some farmers from applying for aid. Bruinsma (2005) recommended the setting up of a front office within MRAE, which can handle the questions asked by the interested parties. Maltese farmers have always been a bit protective when coming to declare their income due to fear from the tax department. Since application for certain measures required the farmers to declare their income, farmers preferred not to apply for certain measures.

The agri-environmental measures could have been better orientated to reach more farmers. Only four farmers applied for the agri-measure related to maintaining biodiversity by conserving and enhancing autochthonous species and by encouraging the use of simple environmental practices via the promotion of organic farming methods. In addition to the above-mentioned measure other schemes could have been introduce, for instance those concerning land abandonment and land fragmentation. Camilleri (2005) identified field accessibility to be an important factor in land abandonment, since abandoned land resulted to have temporary or no access. Financial incentives to consolidate the land and create permanent paths could prevent land fragmentation and abandonment and possibly reach more farmers.

	Name of the Agri-Environmental Measure (AEM)	*Objectives of the AEM*[1]	*Number of participants*[2]	- *Coverage*[2] *(ha)* - *Share of agricultural land (%) enrolled in AEMs in total UAA]*	*Budget spent for AEM*[2]*, ('000 EUR) [national budget plus EU co-funding]*	*Share of AEM budget*[2]*, In overall Rural Development budget (%)*
1	*Restoring of retaining terraced rubble walls*	· To reduce soil erosion by wind and water by restoring and maintaining the traditional physical barriers to soil erosion these being retaining rubble walls, terraces and native trees; · To maintain the area of cultivated agricultural land and reduce the area of abandoned land by restoring rubble walls; · To improve the landscape quality of the Maltese islands by maintain and restoring the most characteristic landscape features – notably rubble walls; · To increase biodiversity by maintaining, enhancing and extending the wildlife habits associated with these characteristic landscape features.	**723**	- 14.95ha - n/a	**598,028.92**	**12 % (€4,800,800)**
2	*Maintaining Biodiversity by conserving and enhancing autochthonous species*	· Preservation of traditional breeds. · Maintenance of habitats associated with endangered fauna and flora. · Conservation of genetic heritage. · Improving agri-touristic potential.	**3**	- 1.26ha 0% (insignificant)	**567**	**Insignificant (as a % of €4,800,800)**
3	*Encourage the use of simple environmental practices via the promotion of organic farming methods*	· Avoiding the use of chemical fertilisers and pesticides; · Environmental awareness and support; · Emphasize the use of crop rotation; · Encourage the use of natural fertilisers such as animal manures. · Increase in soil organic content; · Reduced use of pesticides; · Reduced use of artificial fertilisers.	**1**	- 0.21ha 0 % (insignificant)	**126**	**Insignificant (as a % of €4,800,800)**

Table 2. The agri-environmental measures in the Maltese Rural Development Plan

Source: MRAE, IACS department

4. The Maltese Code of Good Agricultural Practice

The aim of the Code of Good Agricultural Practice (COGAP) is not solely to deal with the Nitrate Directive but constitutes an exhaustive compilation of all good practices pertinent not only to the Nitrates Directive and the Malta Action Programme but also to all the other Directives, prevailing National Legislation, Good Farming Practices as well as a number of potential practices under a voluntary basis.

As such the Maltese Code of Good Agriculture Practice (CoGAP) provide a set of guidelines to farmers concerning:

- Animal husbandry
- Manure handling
- Fertilization practice
- Irrigation practice
- Plant protection for cost effective and environmental friendly production systems.

The EU elaborated such code within the Twinning Light Project MT 2001/IB/AGRI/01/TL funded in 2003. It was drafted by a team of experts from the Agricultural Services and Rural Development Division in Malta, experts from the Federal Agricultural Research Centre (FAL), the Federal Biological Research Centre (BBA), both in Braunschweig and the Federal Ministry of Consumer Protection, Food and Agriculture, Germany.

During the drafting of The Code of Good Agricultural Practice, efforts were made to integrate local knowledge and farmers' experience to lay down specific guidelines that are practical to implement by the traditional farmer. For this reason, whenever possible, farmers were consulted on specific issues and were requested to submit feedback to a draft document. Changes were made within and following the consultation procedure.

Momentarily, a dissemination campaign is being carried out to inform the farmers on how to comply with the CoGAP, for such campaign, four seminars were held within the Farmer's Central Co-operative Centre. These seminars were well attended with considerable participation (Figure 5). Due to the high response, such seminars are to be repeated in more local centralized areas were those farmers who were unable to attend the will be in a better position to be present to the following seminars.

However, the Code of Good Agricultural Practices is at an early stage and more effort needs to be done to identify the individual needs of each farmer in order to reduce land abandonment and enhance soil productivity and soil fertility. Being at an early stage the effects of the Code of Good Agricultural Practices are not yet perceived.

Figure 5. Local farmers participating in the seminars held to disseminate the Code of Good Agricultural Practice; April 2005

A Comparison of Rural Land Management Initiatives in Malta

The four policy and planning instruments, discussed above, have had some varying degree of impact upon the agricultural sector and the rural environment. Each of them addresses specific issues and problems within the sector and, as such they may be perceived as complimentary. MEPA's main goals are related to rational land use and environmental protection, which it attempts to achieve through zoning and development control as well as the enforcement of environmental legislation. MEPA's scope extends far beyond the agricultural sector. On the other hand, CAMP was an exercise in integrated coastal area management and its scope was targeted at physical and social processes related to the coastal zone. It addressed specific issues focused on soil erosion and land degradation but it also stressed the need to deal with cross-sectoral causative processes and downstream impacts. Both the Rural Development Plan and the Code of Good Agricultural Practice are far more sectoral in their scope since they address problems and processes within the agricultural sector, but they also target issues, which are beyond mere land use management. Despite this, the impacts of their policies also have considerable cross-sectoral repercussions.

The complimentary nature of these four instruments is a valuable product and should be appreciated as such in governance. Their point of departure, however, is different, and they also differ on several other aspects; including their main lead organisations, personnel, scope, and main strategies. Despite this variety, their relevant stakeholders are often largely consistent and they seem to converge upon end goals and visions. In fact, all of them agree upon the need to focus upon principles of sustainable development despite the fact that the detailed definition of this term may not be commonly shared.

Table 3 - A comparison of land management initiatives in Malta

Need to include dates of commencement and conclusion, or expected time frames for all of these projects and include this in a separate column near the front end of the table

	Date	Vision/ Goal/ Mission Statement	Lead Agency	Integrated/ Sectoral approach	Format of Outputs	Initiative /Approach	Outcomes/ Impacts (including admin. Struct
Malta Structure Plan (including Local Plans and Subject Plans)	1987 - (Report of Survey launched) 1990 – Malta Structure Plan Act	Land use management, Development control	Planning Authority (now replaced by MEPA - Malta Environment and Planning Authority)	Largely inter-departmental exercise with some inputs from social and sectoral surveys	1) Report of Survey (printed documents – 2 vols.) 2) Malta Structure Plan (printed documents – 3 vols. & map) 3) Sets of Guidelines for development activity	Top-down exercise largely designed to halt land speculation and urban sprawl. Some inputs from social surveys and consultation exercises with NGOs	Planning Authority, which issues development, permits (now MEPA) also charged with periodically reviewing Structure Plan and associated Local Plans. Environmental Impact Assessment
CAMP MALTA (Coastal Area Management Program)	1998 to 2000 Final Report published in 2002	Integrated coastal area management focusing on coastal issues and sustainable resource use. One of the thematic activities addressed issues related to soil erosion and desertification	EPD – Environment Protection Department (now replaced by MEPA)	Integrated exercise where the results of 5 thematic activities (incl. soil erosion) and three horizontal activities were integrated into a final document	Reports of each individual activity and one integrating report regarding coastal issues. Each report identified a series of issues which need to be tackled and most of these were identified through stakeholder/public participation	The participatory approach was evident (one of the horizontal thematic activities consisted of public participation).	Some projects, identified by CAMP, are now being realised but there has been limited application since no administrative, or management, structures resulted from CAMP.
Agricultural Guidelines - CoGAP (Code of Good Agriculture Practice)		Long-term sustainable directives to farmers not only to produce from an environmentally friendly point of view, but also on a cost effective basis Promotion of best practice measures aimed at agro-economic efficiency and environmental protection	Ministry for Rural Affairs and the Environment	Inter-departmental discussions with foreign expert consultation	CoGAP Report, which include a sets of Guidelines dealing with the Nitrate, Directive Malta Action Programme, the National Legislation and the Good Farming Practices	Initial top-down approach, with participatory approach at the end of the first drafting when the local farmers and the competent authorities gave their feedback.	Still in progress Any expected results – perhaps linked to dates?
RDP (Rural Development Plan)		To co-ordinate in an integrated manner the natural, human and financial resources of the agricultural and rural communities of Malta with a view to ensuring the sustainable growth of the rural economy and the improvement of the rural way of life in a fair and balanced manner. Integration in policy formulation refers to cross-sectoral sharing of responsibilities. Was this integrated in this sense?	Ministry for Rural Affairs and the Environment (Rural Development Department)	Integrated exercise where analysis and diagnosis were made in determining the definition of the overall strategy and measures. However, a consolidation of the measures was made for the preparation of the financial tables. Integration in policy formulation refers to cross-sectoral sharing of responsibilities. Was this integrated in this sense?	1) Rural Development Plan Report 2) The establishment of agri-environment measures.	Top-down approach. Was there ANY form of participation within the RDP?	XXX Farmers were given XXX amount of money as subsidies under the Rural development Plan. Any other products or projects?

The particular characteristics of the four rural land management initiatives discussed above have been tabulated to facilitate comparison. The results are now presented as Table III.

A Sustainable Rural Land Management Program for Malta

This comparative discussion also offers an opportunity for the identification of the ingredients that make a good sustainable rural land management program for the islands. At this stage, we shall limit ourselves to identification rather than an in-depth discussion of each component. Moreover, the order of the components does not imply priority. Such priorities vary between stakeholders and this can result in a very frustrating and unfruitful discussion. It is also pertinent to note that such a land management program is geared towards the particular needs of the Maltese islands and needs to be interpreted within such a context.

1. An effective and efficient Participatory program – This should aim at empowering all stakeholders and should not be merely consultative. Participation needs to solicit ideas, generate programs and projects, and result in direct action. Most participatory programs, however, tend to represent the ideas and register the needs of the articulate few to the detriment of those who do not understand the technical details of planning instruments and policy formulation. It is normally the most inarticulate stakeholders that should be empowered to effectively contribute to the program.

2. Promote ecological integrity within the rural environment – This should aim at the minimization and mitigation of any adverse environmental impact while promoting beneficial ecological practices. Specific examples include:
   a) Conservation of scarce water resources and the protection of wetland and watercourse habitats.
   b) Control the indiscriminate use of artificial fertilisers, pesticides and herbicides
   c) Minimisation of on-farm and off-farm waste generation through reduce, re-use and recycling principles.
   d) Promotion of organic farming methods where appropriate

3. Promote efficient and responsible utilisation of freshwater reserves – This should aim at resolving issues of water allocation for irrigation practices, control wastage, and eliminate contamination of freshwater reserves. In particular;
   a) Ensure optimal surface-water quality and quantity (salinisation, pollution, and eutrophication).
   b) Ensure optimal groundwater quality and eliminate associated problems of over-abstraction of water for irrigation.
   c) Invest in efficient water harvesting techniques for dryland cultivation.

4. Protect soil and ensure sustainable use of the resource -
   a) Aim at minimisation of physical and chemical soil erosion – promote soil erosion risk studies (like CAMP Soil Erosion/desertification control) and encourage conservation measures. Such measures need to be effectively communicated as examples of Best Practice.
   b) Safeguard and improve soil fertility, quality and soil resilience – one example is to increase the organic content in Maltese soils and increase soil moisture capacity where appropriate. Reduce practices of burning stubble and promote ploughing in of crop residues. The use of livestock manure should be encouraged to restore soil ecosystems. Fertiliser applications should be based on the optimum crop uptake.

c) Reclaim, through responsible practice, formerly productive arable land and return to agricultural, silvicultural, or ecological productivity. One example is to increase soil depth and promote water-holding capacity through proper subsoil replenishment techniques.

5. Provide for effective and timely management in adaptation to regional climatic and environmental change – One example is the setting up of Drought Management Plans
   a) Increase rural resilience and reduce vulnerability to environmental change
   b) Promote mitigation measures e.g. effective farm insurance schemes
   c) Reduce dependence on marginal productivity
   d) Empower farmers to better manage their landholdings in insecure and ever-changing environments – promote crop diversity

6. Promote conservation of the rural landscape
   a) Protect the character of the rural Maltese landscape and address processes of linear urban encroachment on agricultural land. It is essential to harness the power of NGOs and farmer representative organisations by empowering these entities such that they will play an institutional role within national or regional planning authorities concerned with the environment. It is equally important to involve youths and schools in institutionalised discussion forums on the environment.
   b) Protect rural landscapes from land speculation. Central Government involvement is essential but partnerships between NGOs (environmental and cultural) and Local Government need to be fostered to ensure that there is a balance between the needs of the community and business enterprise.

7. Aim at economic efficiency and feasibility in the agricultural sector
   a) Improve and protect farmer access to national and international markets (the rural community needs time to adapt to EU accession). Access can be facilitated through product improvements and control of unfair competition.
   b) Maintain an adequate income for rural communities. EU accession (because of unrestricted imports) has meant eroded profitability margins and, in general, has exerted a downward pressure on prices. Product traceability needs to be better applied on some of these imports to ensure fair competition.
   c) Reduce market inefficiencies – e.g. archaic and price-fixing practices in market wholesalers; cartel and monopolistic behaviour in large-scale buyers. One way of addressing this problem is to disseminate information and coordinate farmers such as to avoid unwanted output. Product surplus management involves investment in temporary storage facilities to handle short-term surpluses. More long-term surpluses can be sold to non-local markets e.g. UK, Germany, and Holland.

8. Promote social justice and fair distribution of resources in the rural sector
   a) Promote agricultural cooperatives and ensure their active participation in rural development
   b) Resolve occasional friction between farmers caused by product surpluses. This may be achieved through better product planning.
   c) Strengthen farmer education and training programs and facilitates access to such programs; adult education courses in particular. (The Agricultural Census 2001 revealed that only 3.8% of the total farming workforce declared to have undergone ‘basic’ or ‘full agricultural training. Farmer education and training is also one of the basic principles of cooperatives with which they will become more efficient and competitive.
   d) Address issues of security of land tenure. Research shows that insecurity of land tenure results in greater land degradation and the Agricultural Census (2001) shows that only 19.6% of the total agricultural land area is owner-occupied.

e) Promote stewardship in land holdings to ensure conservation of soil and soil retention structures

Conclusions

The above discussion begs the question: Should there be a more consistent, rationalised, streamlined approaches to rural land use management? Would the interests of the rural community be better served through the amalgamation of managerial efforts into one single agency? This current plurality of initiatives often gives the impression of eclecticism and overlap of responsibilities. This may also lead to problems of administrative competition in some areas and, equally, there may also be the possibility of managerial lacunae in other areas. Some stakeholders interpret the motives behind this variety of managerial initiatives as bureaucratic attempts at securing larger slices of the administrative cake and hence, larger departmental budgets. What should be more important, however, is that no single governmental department or agency holds a total monopoly over rural land use management. Rural stakeholders are best served through a multi-faceted managerial system, which ensures adequate checks and balances, and through which, their opinions, concerns, and initiatives are accorded the highest priority.

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*Many individuals within the farming community delight in recounting how MEPA obliged developers to plant screening trees around glasshouses, thus blocking out the desired sunlight! Others criticise MEPA for stopping them from adding aggregate to their subsoil to deepen their soil profile and reduce water stress on their crops

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