



**UNITED NATIONS ENVIRONMENT PROGRAMME
MEDITERRANEAN ACTION PLAN**



**MAP CAMP PROJECT "MALTA"
FINAL INTEGRATED PROJECT DOCUMENT
AND SELECTED THEMATIC DOCUMENTS**

**MAP Technical Reports Series No. 138
Volume I**

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The thematic structure of the MAP Technical Series is as follows:

- Curbing Pollution
- Safeguarding Natural and Cultural Resources
- Managing Coastal Areas
- Integrating the Environment and Development

This series contains selected reports resulting from the various activities performed within the framework of the components of the Mediterranean Action Plan: Pollution Monitoring and Research Programme (MED POL), Blue Plan (BP), Priority Actions Programme (PAP), Specially Protected Areas (SPA), Regional Marine Pollution Emergency Response Centre for the Mediterranean Sea (REMPEC), Environment Remote Sensing Centre (ERS), and Cleaner Production Centre (CP).

MAP CAMP PROJECT "MALTA"
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Volume I

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Technical Note

The final activity documents of the individual CAMP activities, prepared by national experts and/or institutions with the assistance and guidance of the respective MAP centre, are normally published as a MAP technical report series. Since the final activity documents of the MAP CAMP Malta Project exceed the usual page numbers (80-200), it was not possible to present all project outputs in one MAP technical report issue. Documents are therefore being published in two volumes. Selection of documents to be published was carried out by PAP/RAC, with the consent of the CAMP National Project Administrator and the MAP Co-ordinating Unit.

The first volume contains the Final Integrated Project Document, the report of the Project Presentation Conference, the introduction to the Integrated Project Database and GIS, and the final report on the Systematic and Prospective Sustainability Analysis, presenting altogether an integrated synthesis and overview of project results. The documents Coastal Area Management in the Northwest Coast of Malta (as the second level project area), the Strategic Management Plan, the Strategic Environmental Assessment report and the Integrated Water Resource Management for the Northwest are included as Annexes. Furthermore, a CD-ROM presenting the complete Integrated Project Database and GIS is included.

The second volume contains the final thematic outputs of the activities: a) Marine Conservation Areas, b) Soil Erosion and Desertification Control Management, and c) Tourism and Health.

All documents are presented in their original form. In order to reduce printing costs, all figures and photos had to be printed in black/white. Finally, some maps or tables, originally presented on extended A4 format had to be reduced to the normal A4 format.

LIST OF PROJECT OUTPUTS

1. A Tool for Sustainable Use of Coastal Resources with Particular reference to the Northwest
2. Final Presentation Conference Report (Malta, November 28-29, 2002)
3. Final Integrated Project Database (CD)
4. Final Report on the Systemic and Prospective Sustainability Analysis Project within CAMP "Malta"
5. Strategic Management Plan - North West Coast of Malta
6. Strategic Environmental Impact Assessment Report of the Draft North West Local Plan Coastal Policies
7. A Pilot Study for the Evaluation, Designation and Management of a Marine Protected Area: Rđum Majjiesa to Raheb Cave (N.W. Coast of Malta) – Final Report
8. Integrated Water Management of the North-Western Region of Malta - Summary Report
9. Integrated Water Management of the North-Western Region of Malta – Part I: Hydroclimatological Factors; Surface Water; Groundwater; Soil Characteristics
10. Integrated Water Management of the North-Western Region of Malta Part II: Water Infrastructure Development; Hydrological Cycle and Water Balance of Catchment Areas; Socio-Economic System of the Catchment Area; Water Demand and Needs Assessment; General Water Resources Development Plan; Water Resources Development and Management of the NW Area
11. Protection of Soil and Rural Landscapes in Northwest Malta
12. A Study of Environmental Health Effects on Tourism
13. Thematic maps were produced by four thematic activities, i.e. sustainable coastal management, marine conservation areas, integrated water resources management and soil erosion/desertification control management. The tourism and health activity concentrated on descriptive rather than spatial analysis. Worth mentioning are the erosion risk map for Northwest Malta and the marine habitats map for the benthos stretching from Rđum Majjiesa and Ras il-Raheb (also along the Northwest coast of Malta).
14. A set of Sustainability Indicators with relevant baseline data for each thematic activity was drawn up.
15. A poster depicting the various interests occurring along the coast was also drawn. This was distributed amongst stakeholders, the public in general as well as in schools.
16. Articles on the CAMP Malta Project as well as individual thematic activities were published in the local papers and journals. Articles on specialised journals and magazines, especially those aimed for school children were also published. Moreover, the public participation exercise included the setting up of an exhibition, with exhibits on the thematic and horizontal activities.

PREFACE

The MAP Coastal Area Management Programme (referred to as CAMP or Programme) has been approved by the Sixth Ordinary Meeting of the Contracting Parties, held in Athens in 1989. Its adoption was preceded by four coastal management pilot projects, implemented by PAP/RAC in the 1987-1989 period.

CAMP is the MAP programme implementing sustainable coastal management integrating environmental concerns into development planning. CAMP is based on the principles of sustainable development and integrated coastal area management and implemented through individual problem solving projects in selected coastal areas.

During the 1989-2002 period CAMP projects were implemented in: Albania (the Albanian Coast), Croatia (the Kastela Bay), Egypt (the Fuka - Matrouh Coastal Area), Greece (the Island of Rhodes), Israel (the Israeli Coast), Malta (the island of Malta and its NW area), Syria (the Syrian Coastal Area), Tunisia (the Sfax Coastal Zone), and Turkey (the Izmir Bay). Presently, the CAMP "Lebanon" and "Algiers" projects are in implementation. Projects for Morocco, Cyprus and Slovenia are in preparation and are to start after 2003.

The MAP Co-ordinating Unit in Athens is responsible for the Programme as a whole and for the implementation of its individual projects. Since 1996, PAP/RAC has been the MAP Centre responsible for the co-ordination of the CAMP, under the supervision and guidance of the Co-ordinating Unit.

The conceptual framework of MAP CAMP is based on the principles of sustainable development and on Integrated Coastal Area Management (ICAM). The Programme involves practical coastal management projects in areas selected in accordance with the Programme objectives and defined criteria. The projects are implemented by MAP in co-operation with the responsible national and local authorities and institutions, by selected national teams or institutions, with the assistance of respective MAP Centres and MED POL.

The Programme is of a multilevel nature, being oriented at local/project area level by dealing with area-specific priority problems, and at national and Mediterranean levels by applying the project results and experience in other similar areas.

The objectives of the Programme are:

- a) to develop strategies and procedures at local and national levels for sustainable development, environment protection, and rational utilisation of coastal and marine resources, to be also used as inputs for the formulation of Mediterranean strategies of sustainable development,
- b) to identify, adapt, and test, in a realistic operational context, methodologies, tools and practices of sustainable coastal management in the region,
- c) to contribute to the upgrading of relevant national/local institutional and human capacities, and
- d) to secure a wider use, at national and regional levels, of experience achieved by the Programme and by its individual projects, and create conditions for follow-up activities.

Individual CAMP projects are structured into project units defined as individual project activities, each activity dedicated to a specific issue or to an interrelated multi-sectoral group of issues. Integration and co-ordination, data management, systemic and prospective sustainability analysis, and a public participation programme are considered as mandatory activities of each CAMP project.

INTRODUCTION

The CAMP "Malta" project has been approved by the Eighth Ordinary Meeting of the Contracting Parties to the Barcelona Convention, held in 1993 in Antalya. The preparatory activities for the project started in 1996, with a detailed preparation from 1998. Following signature of the Project Agreement in November 1999, the project was launched in February 2000. The individual project activities were completed by the end of 2001, followed by the integration of final results. The Final Presentation Conference, held in November 2002 in Sliema, Malta closed the Project.

The project area dealt with the island of Malta on a first level and its Northwest area as the operational level. Due to a high demand for further economic development and intensive expansion of all kind of activities, in particular tourism, the NW is subject to increasing pressures and users conflicts, requiring therefore urgent sustainable management measures.

The problems identified in this Project indicated the classical sectoral approach which is inadequate for solving or mitigating the problems of coastal management. This resulted with a growing recognition about the need for a better definition of sustainability of future development and for strengthening and improving the integration of the national decision making system. Amongst other initiatives, the MAP CAMP "Malta" project was proposed and formulated.

In addition to addressing development and management issues in the project area and on a national level, the broad objective of the project was to increase efforts towards sustainable development and environment protection in Malta. The project conceptual framework was built up on the MAP/UNEP methodology and practices of Integrated Coastal Area Management (ICAM), and on improved national capacities for land-use planning, environment protection and sectoral management of natural resources and economic activities.

The CAMP "Malta" project is the first national initiative to integrate national efforts in coastal area management. It addresses specific issues concerning coastal area management in a holistic manner, rather than by traditional land use zoning and development control.

On the MAP side, the project is the first one formulated and implemented following the conclusions of the Sixteenth Meeting of the MAP Co-ordinating Unit and Regional Activity Centres, held in Cairo in 1998, and according to the "Operational manual for the formulation and implementation of CAMP projects", prepared on the basis of the Meeting conclusions.

The following individual project activities were implemented according to the Project Agreement:

- a) four transversal project activities: Co-ordination and Integration, Integrated Database and GIS, Participatory programme, and Systemic and Prospective Sustainability Analysis, and
- b) five thematic project activities: Sustainable coastal management, Marine conservation areas, Integrated water resource management for the NW Area, Erosion and desertification control management and Environmental health effects on tourism.

The institutional arrangements from the MAP side included the MAP Co-ordinating Unit as the overall project co-ordinator and supervisor, PAP/RAC as the operational co-ordinator and PAP/RAC, BP/RAC, SPA/ RAC and the WHO Project office in MAP - Athens as Centres responsible for the implementation of individual activities within their mandates.

The then Environment Protection Department (now the Environment Protection Directorate within MEPA) was the national agency responsible for the co-ordination and implementation of the project. A number of other authorities and institutions were responsible for sectoral and thematic issues.

A full list of authorities and institutions involved in the Project was given in Annex 3 of the Final Integrated Project Document.

A number of innovative elements were introduced in the project:

- a) The project preparatory phase was more intensive and longer than that of previous projects and was implemented with significant contributions from a number of relevant national ministries and institutions. Consequently, the project agenda was prepared and elaborated in detail, including areas and issues of priority national interest. The institutional arrangements defined during the preparatory phase proved to be efficient, securing the required co-ordination and integration of efforts and results. The consequence of this approach was that the implementation period of the project was the shortest one of the previous 9 CAMP projects.
- b) The four “transversal” individual activities, namely: co-ordination and integration, project-level data management/GIS activity, the participatory programme and the systemic and prospective sustainability analysis, are innovative for CAMP Malta. Each of these activities contributed in a specific way to the project results and its efficiency and cost effectiveness.
- c) Innovative procedures implemented include the organisation of an Inception Workshop and regular harmonisation/integration meetings and the compilation of an Inception Report and Aide Memoire. The innovative procedures provided for: (i) transparency of tasks to be implemented, (ii) transparency of allocation of funds, (iii) timely identification of practical and other implementation related problems, (iv) a better mutual information among teams and (v) harmonisation and integration of respective results.
- d) A number of ICAM tools were also implemented for the first time in CAMP Malta, This included the drawing up of sustainability indicators and the application PAP/FAO methodologies for erosion mapping and control management and RAC/SPA methodology for marine benthic habitats mapping.
- e) The inter-relations between tourism and health, a most important issue not only for Malta but also for the Mediterranean region as a whole, was dealt with for the first time within CAMP.
- f) A careful preparation of the Final Integrated Project Document which includes a follow up programme might be considered as a good prerequisite for an efficient and beneficial post project phase.
- g) Finally, innovative contributions made by the national teams in implementing the project, in particular when adapting tools and procedures to the national context and local scale, should be emphasised.

On a general level, new ideas and concepts indicating the needs for a change in policies and inducing impacts towards a sustainable and environmentally sound integrated coastal management were the major project benefits. In addition, practical results related to selected priority issues were produced. A well-structured and implemented co-operation of national institutions and teams with the various MAP Centres involved, established a good basis for successful further national initiatives towards ICAM and sustainable development of national resources and potentials.

Moreover, a Coastal Declaration for Malta was proposed together with the establishment of a high level Coastal Resource Advisory Board. An elaborated sustainable coastal management strategy, funding strategy, Project Investment Portfolio and a framework follow up programme were also proposed.

At sectoral levels, each thematic activity produced a number of outputs, the major ones being presented in this issue of MAP TRS.

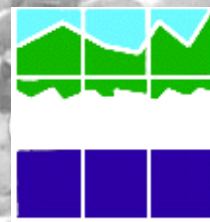
Finally, the Project Presentation Conference was unanimous when stating that the results and experience of the CAMP "Malta" project should be considered as pilot ones not only at the national Maltese level, but at the Mediterranean regional level.

INTEGRATED COASTAL AREA MANAGEMENT IN THE ISLAND OF MALTA



A TOOL FOR SUSTAINABLE USE OF COASTAL RESOURCES WITH PARTICULAR REFERENCE TO THE NORTHWEST

Louis Vella
Christine M Tanti
Avertano Role'
Michelle Borg



**Priority
Actions
Programme**

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LIST OF ACRONYMS

AFM	Armed Forces of Malta
ALE	Administrative Law Enforcement
CCA	Carrying Capacity Assessment
CAMP	Coastal Area Management Programme
CPD	Civil Protection Department
CRAB	Coastal Resources Advisory Board
CZ	Coastal zone
DAD	Diagnostic Analyses Document
DPA	Development Planning Act, 1992
EEA	European Environment Agency
EC	European Commission
EPD	Environment Protection Directorate
EU	European Union
FAO	The Food and Agriculture Organisation of the United Nations
FIPD	Final Integrated Project Document
GIS	Geographic Information Systems
ICAM	Integrated Coastal and Marine Area Management
ICZM	Integrated Coastal Zone Management
IPCC	International Panel on Climate Change
ITS	Institute for Tourism Studies
MCAST	Malta College for Arts Science and Technology
MCSd	Mediterranean Commission for Sustainable Development
MEPA	Malta Environment and Planning Authority
MHRA	Malta Hotels and Restaurants Association
MMA	Malta Maritime Authority
MRA	Malta Resource Authority
MRI	Ministry for Resources and Infrastructure
MTA	Malta Tourism Authority
NGOs	Non-Governmental Organisations
NSO	National Statistics Office
NW	Northwest (of Malta)
PA	Planning Authority
PPAs	Post Project Activities
ODZ	Outside Development Zone
RAC	Regional Activity Centre
RT&D	Research and Technological Development
RO	Reverse Osmosis
SEA	Strategic Environment Assessment
SI(s)	Sustainability Indicator(s)
SoE	State of the Environment
SPSA	Systemic and Prospective Sustainability Analysis
SD	Sustainable Development
ToRs	Terms of Reference
UNCCD	United Nations Convention to Combat Desertification
UoM	University of Malta
WSC	Water Services Corporation
WHO	World Health Organisation

PREFACE

Coastal area management Projects are being implemented by the Mediterranean Action Plan (MAP) since 1989 when the Coastal Area Management Programme (CAMP) was established at the 6th Ordinary Meeting of the Contracting Parties. The Contracting Parties of the Barcelona Convention endorsed the CAMP for Malta in 1993. Preparatory activities for the project started in 1996 with detailed preparation in 1998. This Project was then launched in February 2000 during an Inception Workshop.

The main objective of MAP CAMP is to offer assistance to the Contracting Parties in the resolution of urgent environmental problems and to introduce ***Integrated*** coastal area management as a basic tool to achieve sustainable development in selected project areas.

The broad objective of CAMP Malta was to increase national efforts towards sustainable management and environment protection in Malta. This was demonstrated mainly by applying the methodologies and tools of ICAM as developed by Priority Actions Programme Regional Activity Centre. As in other CAMP projects, national institutions, NGOs and stakeholders and other Regional Activity Centres of MAP were involved.

CAMP Malta identified a strategy and action plan for ICAM in the NW Malta. A main recommendation concerns the creation of a Coastal Resources Advisory Board and the drafting and enactment of suitable legal instruments to ensure the sustainable use of coastal resources.

The results and experiences of CAMP Malta will be applied to other areas at the national level. It is also hoped that the results and experiences of CAMP Malta will be shared and suitably applied to other coastal areas at the regional level, as a practical demonstration of the implementation of the principles of sustainable development initiated in RIO and strengthened in Johannesburg.

It is also hoped that the positive experiences created in Malta will continue to encourage the Contracting Parties to implement this process in other sectors of their coastal areas until eventually all the coastal areas of the Mediterranean Sea would have been covered by management plans inspired by the ICAM methodology promulgated by PAP/RAC.

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Director
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EPD

EXECUTIVE SUMMARY

The MAP CAMP Malta Project is the first exercise in integrated coastal area management that has been carried out within the Maltese Islands. It is the product of a series of five thematic activities which addressed specific sectors regarding different problems and issues pertaining to the Maltese coastline. These thematic activities were complemented by three transversal activities and coordinated by the EPD as lead agency. This structure is consistent with the Mediterranean Action Plan's Coastal Area Management Programme which has been applied in eight other locations around the Mediterranean Basin.

The broad objective of CAMP Malta was to increase national efforts towards sustainable management and environmental protection in Malta. This was carried out mainly by applying the methodologies and tools of ICAM and thereby identifying a strategy and action plan for ICAM in NW Malta. It is envisaged that the results and experiences of CAMP Malta will be shared and applied to other areas at national and regional level.

At the regional level, CAMP Malta is an innovative Project since it is the first one formulated and implemented according to the new conceptual framework adopted by MAP at the 16th Meeting of the MAP Coordinating Unit (Cairo, 1998). CAMP Malta had a lengthy preparatory phase and a short implementation phase. This was very useful and successful since it was in line with the funding cycles of donor agencies. Furthermore, CAMP Malta incorporated and produced a number of important innovations. These include the incorporation of new activities (Systemic and Prospective Sustainability Analysis; Data Management; Tourism: the Impacts of Health, and Public Participation).

New techniques were also introduced for the first time to assist in the understanding and resolution of ICAM related issues. These included Strategic Environmental Assessment, Erosion Mapping, Marine Benthic Habitat Classification, and the concept of AMOEBA to visualize the harmonious and balanced evolution of the sustainable development processes.

In a few cases the methodologies proposed were refined to better adapt them to the local scenarios which was necessitated by the smaller size of the country and thus the areas under study.

CAMP Malta brought about a series of notable benefits which can be mainly grouped under two titles: 'Capacity Building' and 'Main Outputs'. The latter category includes the identification of a set of priority key issues, as well as the formulation of an integrated action plan and post project activities, which are described in this document.

One of the most crucial outputs of the project was in fact the identification and organisation of a series of key issues. These were largely elicited from the concerns of stakeholders and conditioned the orientation of the project towards a "bottom up" approach where problems and issues perceived by stakeholders and the public in general, were accorded the highest priority. In this respect, the role of the team leaders of most thematic activities was seen as more of facilitation rather than prescription.

Each thematic activity's key issues were organised under the currently defined, three principles of sustainable development (environmental integrity, economic feasibility, and social equity). This facilitated integration and the identification of gaps. Two case studies of integration are put forward as examples. One addresses problems of potential and existing conflicts associated with the clearing of watercourses while the second examines the potential benefits of synergies that can be realised from the rebuilding and maintenance of agricultural terraces and their retaining rubble walls.

CAMP Malta was also concerned with the identification of management gaps. These were classified as functional gaps (gaps identified in the legal, administrative and management structures, which have an influence on coastal issues); spatial gaps (gaps in management structures which affect specific areas or locations) and emerging Issues (either technological issues which, until recently, appeared to be without possible application to Malta, or to geopolitical issues which are emerging due to regional or bilateral issues).

Having identified and analysed sets of key issues and their interactions, CAMP Malta delivered a set of strategies and specific actions which are meant to address, correct or mitigate these identified problems.

This action plan has been organised into another set of matrices outlining proposed strategy elements aimed at bringing about the required changes. In this respect, categories include governance; legal action; capacity building; knowledge and information; economic instruments; technological innovations and the protection of coastal resources.

These matrices are meant to facilitate action. They provide a clear objective, specific actions to be implemented, a clear identification of the responsible authority, as well as the stakeholders that should be involved. Information is also provided regarding the time frame and the geographical extent of the proposed action as well as some indication of the relative cost of the project, possible sources of funding, and the feasibility of the action's realisation. In short, there is enough information so that specific actions may be taken up by the concerned entities, for incorporation into their business plans.

In line with its pragmatic nature, CAMP Malta also provided a set of specific post project activities identified as priority activities to be implemented. Their prioritisation followed a natural pragmatic approach – a project that is of immediate time frame, is highly feasible to implement and requires low to moderate costs.

Another output of CAMP is a proposed funding strategy. This gives recommendations for the short and long term and follows an analysis of the range and type of actions being proposed in the Action Plan. In order to reduce the number of funding sources to be pursued, actions have been grouped into a limited number of integrated themed projects from which a number of key bids have been identified. In addition, a number of parallel activities are recommended to extend the potential range and type of future funding sources. The importance of action in the very short term that achieves visible results, as well as the value of micro-financing was emphasised.

I. INTRODUCTION

I.1. THE MALTESE COAST – POPULAR PERCEPTIONS

Land and water constitute the main natural resource capital of the island state of Malta, within and by which, the socio-economic developmental needs take place. If these resources are not managed or protected, the country consumes the natural capital on which its development is to be based. This concern applies with a special urgency in the coastal zone where land meets sea. This phenomenon also concerns the general public to a significant degree.

Malta has the 6th highest population densities in the world. This amounts to around 1,300 persons per square kilometre. For a small island with a total coastline of 190km, the Maltese coastal zone holds special significance in that (like in all small islands) there is a relatively large ratio of coastal area to total land mass. Insularity also introduces some added complexities which are not generally conducive to sustainability.

Insularity and high population density, together with scarcity of space are the factors which together produce a combination of circumstances. Placed on the coastal zone, these lead to a remarkable degree of pressure which may be unique in its magnitude.

Over the last decade, Malta has also undergone radical changes in demographic, ecological and socio-economic terms. Thus the coastal and marine environment is under a continuously increasing threat from the very success that Malta has enjoyed in a booming economy.

Apart from competing amongst each other, these pressures also conflict against the legitimate and increasing demands for environmental and cultural heritage conservation. Such development-related uses also increase the risk of pollution, coastal erosion, habitat loss with concurrent loss of wildlife species and increase vulnerability to control environmental hazards.

Some of these problems are being addressed as issues within the MAP CAMP Malta Project. The major results and recommendations of CAMP Malta which are the outputs of the thematic working groups are integrated within this Final Integrated Project Document.

The authors of this document are committed to address coastal problems and issues as perceived by the users of the coast. This commitment brought about a strong element of public participation which conditioned the development of the project and its output.

Boxes which are found throughout this document are a result of interviews held with seven typical coastal users, who have expressed their experiences (mainly difficulties) in fully enjoying the coastal zone.

I.2. SUMMARY OF POPULAR ISSUES

A summary of the main issues raised in the interviews with the beach users are:

- something should be done to protect the coastal areas;
- there are increasing problems to enjoy the coastal areas;
- many have little knowledge of the value of, or interest in retaining those essential properties of the coastal areas;
- beach concessions prevent accessibility and should be controlled;
- boat houses are a popular alternative to expensive holiday apartments and these also provide views as well as a sense of community;
- a system of marine protected areas should be set up immediately since these will enhance the overall quality of the coastal zone including diving sites;
- hunting, trapping and farming hinder accessibility to those who appreciate the ecological and esthetical value of the coastal areas;
- the availability of quality dive sites has decreased and thus there has been a shift towards sites only accessible by boats;
- some Sunday visitors dump rubbish over cliffs and coastal areas. They also steal fruit from orchards;
- snail gatherers damage retaining rubble walls;
- the laying of concrete, on access roads and parking areas, has decreased the value of the natural environment;
- hunters and trappers plant trees and also clean up the area they use. They also control fires.

There are other issues which seem to be beyond the focus, perception and understanding of these interviewees. This suggests that the respondents seem to be unaware of some of the wider issues concerning the sustainable use of the coastal area. Indeed, not all issues could be addressed in this Document. However the above serves to illustrate the more popular perceptions regarding coastal issues existing at this point in time. It is these, and the wider issues which CAMP Malta strives to address.



Plate I.1. Trapping sites in the coastal fringe (Vella, 2002)

BOX I

Hunter and Trapper

The North West coast is not so good for hunting purposes as the lower cliffs act as a barrier to certain game such as quail that usually migrates at sea level. However there will be one or two days during the hunting season where a number of game passes this area. Consequently there are few hunters here when compared to other areas in the Maltese Islands. Yet they prefer the north west coast because of their remoteness from urban life. Most of the hunters in the area have their own land and are part-time farmers.

In these areas one finds the Blue Rock (Merill) thrush and I have never seen one being shot. The majority of these hunters respect nature. A small number of carob trees exist. These are highly appreciated by hunters and are cleaned yearly from dry wild grass to prevent them from getting on fire during the summer months. These parts are prone to fires and hunters are the main fire fighters as it is difficult for fire fighting vehicles to access the area. During the last decade or so a number of hunters and even some trappers have planted a number of indigenous trees such as carob trees, olive trees, pine as well as almond trees which are more useful to them than any of the alien species.

A general agreement exist between land owning farmers, trappers and hunters to keep away the public in any part of the year. This also includes friends or relatives. This tradition is mainly implemented to ensure that there are no people whatsoever roaming about the countryside. In keeping the number of people low it also helps to limit interference with nature mainly through trampling.

I have two trapping sites that have been handed down to me from generation to generation and they are used according to the wind direction, one for northern winds and one for southern winds. These two trapping sites have been there for ages and even my grand father remembers them. The site where I stay (Dura) is totally built from rubble stones with a roof covered with soil and no alien materials such as iron or plastic. I am against trappers in these areas that build the Dura, with Globigerina blocks and alien materials. Every now and then I collect all my rubbish, including empty cartridges, and sometimes even that thrown from others.

I even invested in a weed cutter for the trapping sites so as not to make use of herbicides. In my 13 tumuli only a few shrubs exist, mainly wild thyme; there is one that I think is more than sixty years old. Probably the old wooden gate with old stone hinges further up the path, together with my father's presence helped it to grow this much, simply by stopping irresponsible people that every December scour the areas for wild thyme to be used in Nativity cribs.

The things that hinder me from enjoying the coast are people who stop to eat along the cliff tops and throw rubbish over the cliff edges; sometimes even stones are thrown. Numerous roads for vehicles have been developed in the last decade (without a permit) and are used by very few hunters, trappers and farmers. These have taken up a lot of wild vegetation not to mention land especially where parking areas were developed. This land has been passed to me from generation to generation and it is found in the superb state it is today due to the sweat of my grand parents, it annoys me that people do not respect other people's property. During winter time, especially on Sundays and public holidays (when hunting and trapping is not allowed) people scour the coast for edible snails, tearing down rubble walls and steal fruit from the fields. Due to the quantity of rubbish they leave behind they have been nicknamed as "il-mahmugin" (the dirty ones) by the land owners in the area.

I.2. IMPORTANCE AND VALUE OF THE COASTAL AREA OF THE MALTESE ISLANDS

When considering the size of the Maltese Islands coupled with the intensity of urbanisation, the coastline is the last remaining area where most people are likely to actually experience, in a relatively unobstructed manner, the feeling of wide open space. Evidence of this is reflected in the various activities undertaken by the general public, in particular, bathing, water-sports, barbecues and evening strolls during summer. On the other hand, picnics and walks in the countryside are more popular during the winter months. This is well reflected in the opinions of respondents as reproduced in Boxes I to VII. Similar considerations apply, albeit to more limited areas and users (divers and snorklers) in respect of underwater seascapes.

Fisheries, transportation and recreation are three main industries, which exploit coastal resources worldwide as in the Maltese Islands. The increasing scale of coastal development has led to conflict between uses. Although some of these uses actually benefit from the presence of other coastal activities (such as power stations located within or in the proximity of ports which receive fuel oils), some other uses are incompatible (such as desalination plants in the vicinity of effluent discharge points).

Other activities occurring in the coastal areas of Malta include ship-repair, shipbuilding and quarrying. All of Malta's electricity generation plant is located on the coastline for ease of importing and handling hydrocarbon fuels as well as for the large quantities of cooling water which are needed. The coastal zone also locates many reverse osmoses plants which supply around 50% of Malta's requirements of fresh water, especially during the hot and dry summer where water consumption is at its peak.

Tourism, one of the major economic sectors in these islands, has focused on coastal areas with the development of a number of hotels and associated recreational facilities. The benefits obtained from such a location can be limited and short-lived, since densely built-up coastal areas no longer provide the tourism product originally promoted. Development within the marine environment has also increased over the last decade with the expansion of aquaculture production units as well as bunkering operations.

The consequence of all this development has been the degradation of natural resources and the creation of conflict between users indicating the evident need for a strategic direction for the Maltese coastline. This is reflected also in the findings of the Public Attitude Survey carried out by the Planning Authority in 1999 as part of the Structure Plan Review process. The results show a general perception of the coast in the Maltese Islands as a recreational resource that needs to be protected both for this purpose as well as for environmental reasons. Measures to control conflicts are also perceived to be inadequate.

The demand for a sustainable use of the coast means that the coast should be used in such a way that the natural and other values of the coast will also be available for future generations in an essentially undiminished degree. In other words, the coast should not be exploited for this generation own selfish interests. It is however evident that the current trend does not exactly conform to this.

It is a general assumption that the reason for the present, generally unsatisfactory state of the Maltese coastal areas, is the result of lack of communication and understanding between the different stakeholders and users. This statement is however based on an incorrect analysis of the problem. It is common knowledge that there are huge economic interests in the coast. The perceived value of land, especially on the coastal area and with development potential, can be orders of magnitude more costly than that of a stretch of land with only agricultural potential.

BOX II

Science Teacher

I use the coastal zone for walks to relax and gain peace of mind and to observe the natural heritage throughout the year. The coast, with its rich selection of flora and fauna, offers, in certain periods, a quite and clean environment. The variations within the terrain enhance the landscape as does the resulting mixture of colours from the vegetation and rock formations. The coast also offers a link with our historical heritage which is visually exhibited for example by the coastal towers and wayside chapels. Other features also give an indication of Malta's past namely the abandoned fields and access points to the marine environment that shed a light on the days when maritime transport dominated our islands.

The main factors that hinder my personal enjoyment of the coast are hunting and trapping primarily because they disturb coastal habitats and prevent the continued presence and potential establishment of bird populations and they disturb the landscape with their structures. Access to parts of the coast within the NW is denied not only by hunters and trappers but also by farmers. In some other areas, the large quantities of people during certain times of the year detract from the calming effect of the coast. One other factor that limit my personal enjoyment of the coast is the large quantities of rubbish and litter that is dumped there.

The coast offers good educational potential to explain the diversity of coastal habitats in Malta and increase awareness of our natural heritage. The rich variety of species of flora and fauna can be shown and explained to students as they experience the coast.



Plate I.2. Ghajn Tuffieha Bay, (Vella, 2000)

Coastal resources thus provide a welcome flow of goods and services but they also often include a variety of complementary and inconsistent activities. If left alone, these social and economic forces at work in coastal areas would result in overexploitation, negative environmental effects, equity problems and a loss of social well being.

The high population density brings intimate contact with each other and with nature, including the coast. Decision makers, opinion leaders, the general public and stakeholders (each with specific interests) mingle and share the same positive and negative effects of this natural, cultural and sociological environment.

It is one of the aims of integrated coastal area management to bring some common understanding, if not acceptance, of those factors upon which sustainable development in this critical region may be undertaken to the maximum benefit of present and future users. This set out the basis for a CAMP Project in Malta. In fact, the principal aim of the CAMP project to suggest and set out a methodology which in essence is a bottom up approach to resolving environment and development conflicts in this important area surrounding the coastline.

I.3. MAP CAMP - DEVELOPMENT OF THE PROJECT

The Mediterranean Action Plan (MAP) is one of the regional plans of the Regional Seas Programme of UNEP. The legal basis of MAP, initiated in 1975, is the Convention for the Protection of the Mediterranean Sea against Pollution (i.e. the Barcelona Convention) and its related protocols. The Convention was signed in 1975, entered in force in 1977 and was revised in 1995 and 1999. MAP is now more focused towards integrated management of natural resources and coastal areas, environment protection and sustainable development, assessment prevention and control of marine pollution and conservation of nature, landscape and habitats.

The Coastal Area Management Programme (CAMP) launched in Athens in 1989, is the MAP Programme implementing sustainable coastal management, integrating environmental concerns into development planning and is based on the principles of sustainable development and integrated coastal area management.

So far eight CAMP projects have been implemented and another two are under way. Details on the implementation of a CAMP Project are given in the "Operational Manual for the Formulation and Implementation of CAMP Projects" (PAP/RAC, 1999).

MAP CAMP Malta was approved by the Contracting Parties of the Barcelona Convention in Antalya in 1993. Preparatory activities for the project started in 1996 with detailed preparation in 1998. The objectives, concept, structure and the relevant institutional arrangements of the Project were defined by the Project ToRs, an integral part of the Project Agreement which was signed in November 1999. The Malta Project was officially launched in February 2000, during an Inception Workshop when an Inception Report was presented and endorsed. This report is the first integrated document of the project and defines the methodologies, tools and techniques to be applied.

The CAMP Malta Project is the first national initiative to integrate national efforts in coastal area management. It addresses specific issues concerning coastal area management in a holistic manner, rather than by traditional land use zoning and development control.

This document is meant to provide a demonstration action plan, through thematic activities concentrated mainly on four priority areas:

- Integrated water resource management
- Marine conservation areas
- Environmental health effects on tourism
- Soil erosion/desertification control management

Another 5th activity dealt with Sustainable Coastal Management for the NW and served as an umbrella for the above four activities.

One of the more important outputs of these thematic activities is the identification of a series of key issues. These played a crucial role in the integration process which is the main task of this present document. Furthermore this document proposes a strategic action plan for the NW, which includes details for specific projects and follow up activities for the study area and also for the rest of Malta. These follow up activities and management recommendations address urgent coastal issues which are resulting in significant negative impacts on the environment.

BOX III

Hobby Fisherman

F is a retired policeman. He considers himself lucky in that his job allowed him to retire at a relatively early age and enjoy a pension, following a strenuous job he started at a young age. F now considers himself as an amateur fisherman.

He built his boathouse in a cleft in the rocky coastline so that it is sheltered from the prevailing winds and storms, and also from prying eyes. It is very secluded and quiet and can only be reached on foot after a longish walk across the beach and into the rocky land beyond.

He owns a traditional wooden luzzu which he keeps in the boathouse. Its maintenance takes up a lot of time. However, he regularly goes on fishing trips. He considers himself a good fisherman since he always manages to collect a couple of boxes of fish using nets and traps. Many times he cooks the fish on the spot in his boathouse.

His closest friends come to visit him there to eat his fish and to drink wine and spend the afternoon siesta. Many of these are colleagues and friends made over the years in his job. Some are hunters who drop in during their rounds. He also does a spot of shooting during the migratory season.

All he wants is to be left alone to spend the rest of his life in this manner. He wants to remain in peace and quiet. He has no interest in plans or in sustainability and such stupid ideas.

The project incorporated the principles of Sustainable Development throughout its development and implementation. This was ensured through a specific activity on **Systemic and Prospective Sustainability Analyses**. To bring out the relevance of sustainability, the key issues identified for each of the thematic activities have been grouped under the headings of ecological integrity, social equity and economic viability. Furthermore, this activity was launched for the first time within CAMP Malta. Its task was the identification, development and production of a series of sustainability indicators which are meant to deliver information regarding the state of sustainability of the coastal areas. These indicators were developed with stakeholders in a participatory manner.

Each of the thematic groups was required to seek to involve stakeholders in a participatory dialogue, an essential part of modern democratic decision-making processes. During the implementation of these activities, stakeholders were *active* participants and their opinions and perceptions are reflected in the outcome of the individual activities. The project and especially the thematic activities thus reflect a strong element of public participation. Although there was a specific activity group to ensure public participation, due to local circumstances, an informal and low key involvement of stakeholders was more appropriate.

The project methodology developed in the demonstration area is based on the principles of ICAM and can be applied to the rest of Malta (Gozo and Comino), as well as regionally for other coastal areas where a high degree of resolution would be more appropriate.

It is envisaged that this methodology will guide the proposed action plan, for the forthcoming 20 year period¹. Thereafter, it is envisaged that the action plan is formally reviewed, potentially modifying the suggested action programme to make it better quipped to deal with any new pressures and impacts which may arise over the intervening years.

During the preparatory phase, which was of a longer duration than in previous CAMPs, special efforts were made to ensure that the thematic activities were harmonised so as to ensure a meaningful output. This was achieved through regular meetings with the team leaders and National Project Coordinator/Administrator. Furthermore, a Harmonisation workshop held midway through the Project was very useful in ensuring integration of efforts.

I.3.1. OBJECTIVES

The objectives of the Project were defined in accordance with the proposals of various Maltese institutions and priority needs identified in the Diagnostic Analysis Document (Grech & Tabone, 1998). Several individual Project Activities² were proposed to PAP/RAC of which five were selected for implementation within the Project.

The broad objective of CAMP Malta was to increase national efforts towards sustainable management and environment protection in Malta. This was carried out mainly by applying methodologies and tools³ of ICAM and thereby identifying a strategy and action plan for ICAM in the NW. It is envisaged that the results and experiences of CAMP Malta will be shared and applied to other areas at national and regional level.

¹ To be in synergy with the revision cycles of the Structure Plan for Malta.

² Annex I

³ Annex V

I.3.2. STRUCTURE

CAMP Malta brought together various administrative, regulatory, academic and professional entities, NGOs and stakeholders (including the public) to work together towards a common goal.

The general overall management of CAMP Malta at the Project level was under the direction of a National Steering Committee while the co-ordination at activity level was achieved through regular meetings of the National team leaders and with the National Project Co-ordinator and/or Administrator.

The overall structure of the Project and its co-ordination is given in Figures I.1. and I.2.



Plate I.3. Formal meetings with stakeholders & Governmental agencies, January 2002, (Vella, 2002)

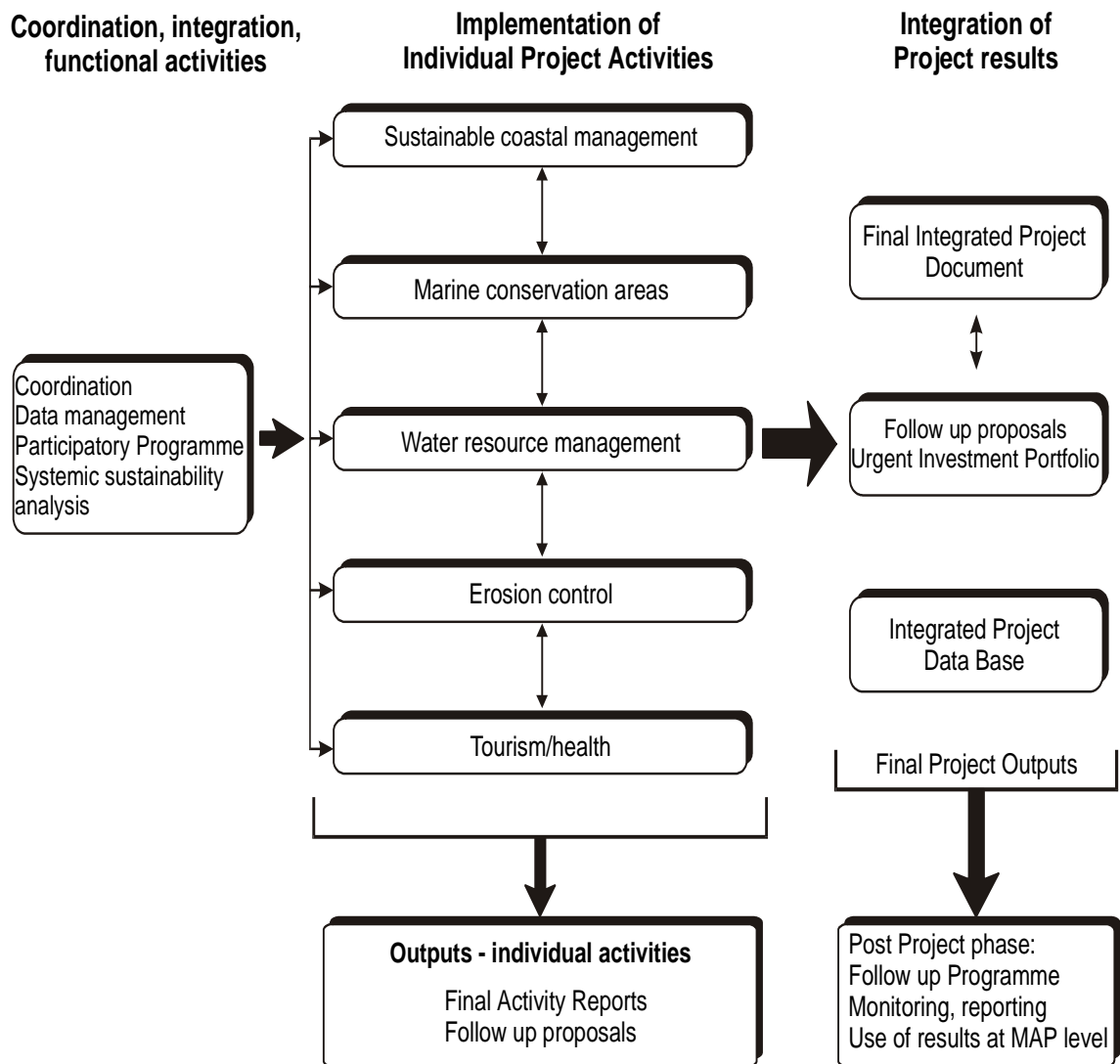


Fig. I.1. MAP CAMP MALTA Project Structure (PAP/RAC, 1999)

I.3.3. PHASING

The CAMP Malta project was carried out in three main phases:

- Preparatory activities,
- Detailed formulation of technical specifications, and
- Implementation of the five thematic activities and the horizontal integrating activities.

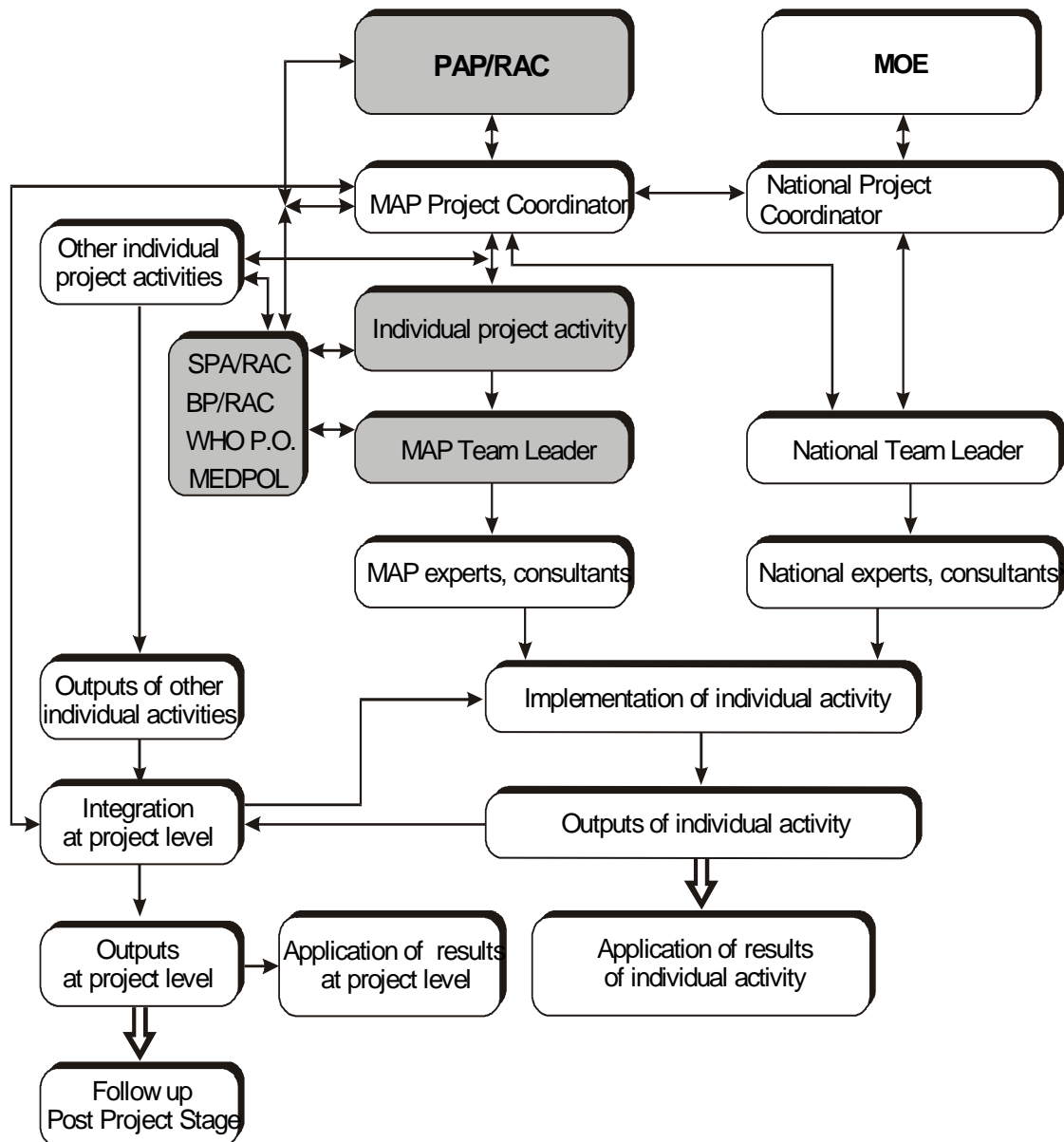


Fig. I.2. Detailed Project Structure (PAP/RAC, 1999)

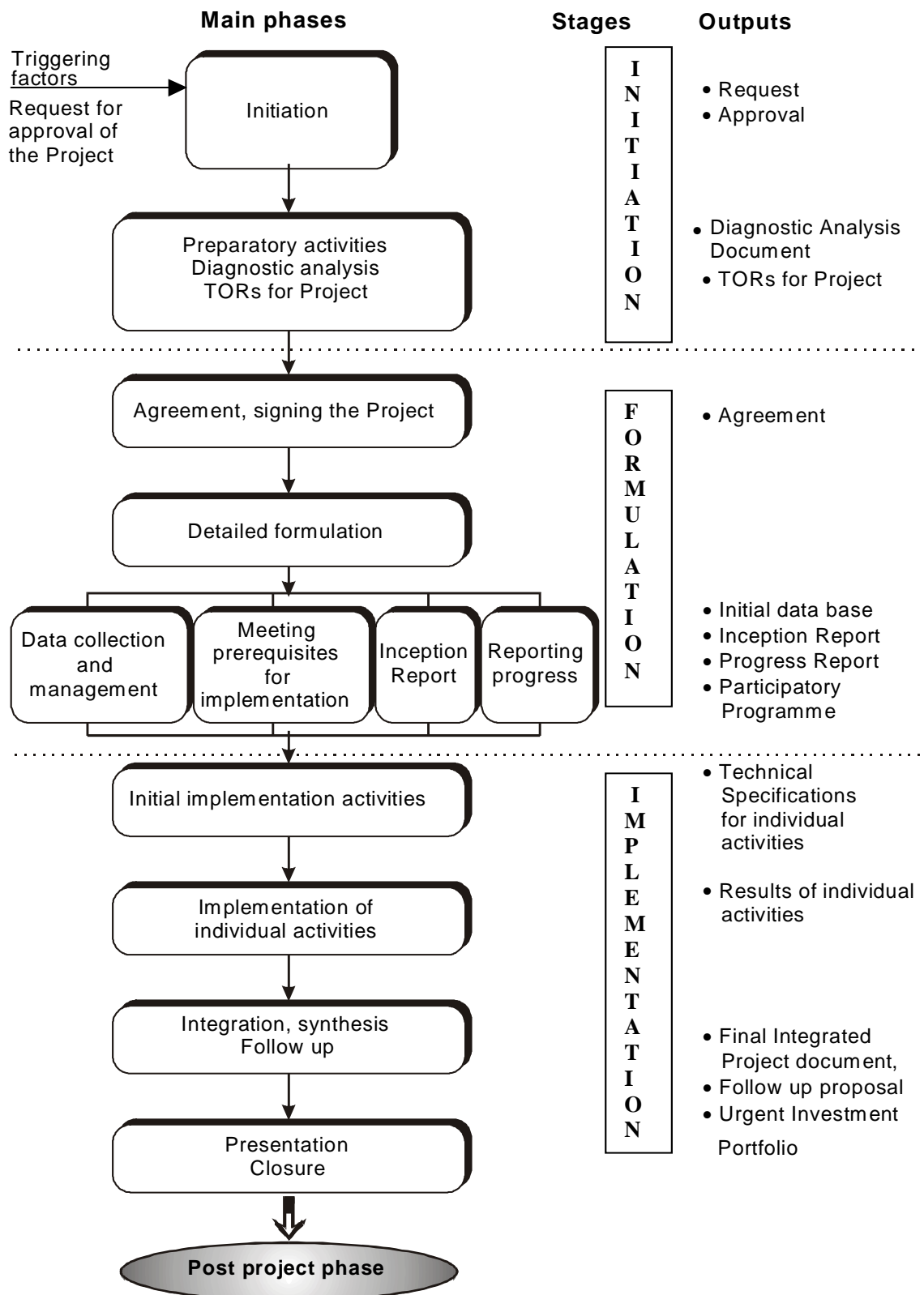


Fig. I.3. Project Phasing (PAP/RAC, 1999)

I.4. INNOVATIVE TECHNOLOGIES AND TOOLS

At the regional level, MAP CAMP Malta is an innovative Project since it is the first one formulated and implemented according to the new conceptual framework adopted by MAP at the 16th Meeting of the MAP Coordinating Unit (Cairo, 1998).

CAMP Malta incorporated and produced a number of important innovations. Some of these stem from the “Operational Manual for the Formulation and Implementation of CAMP Projects” (PAP/RAC, 1999) while others originated locally.

I.4.1. THEMATIC ACTIVITIES

When considering the innovative elements in CAMP Malta particular mention also needs to be made to the specific tools and methodologies which were introduced for the first time during this CAMP.

i. Systemic and Prospective Sustainability Analyses (*vide* Annex 1)

All those who participated in the CAMP Malta project (including stakeholders) benefited from the innovative Systemic Sustainability Analyses (later re-named Systemic and Prospective Sustainability Analyses). This transverse activity added more value to CAMP Malta since it increased general understanding of the whole project as well as ensuring a high degree of transparency and participative spirit amongst respective participants. Thanks to this activity new insights into the meaning of sustainable development have also been gained. The formulation of ‘grass root’ indicators of sustainability has been inculcated in a wide variety of stakeholders. Furthermore, this methodology can be used to measure progress towards a more sustainable and balanced future. This knowledge will find ever-increasing application in many environmental and related fields in Malta.

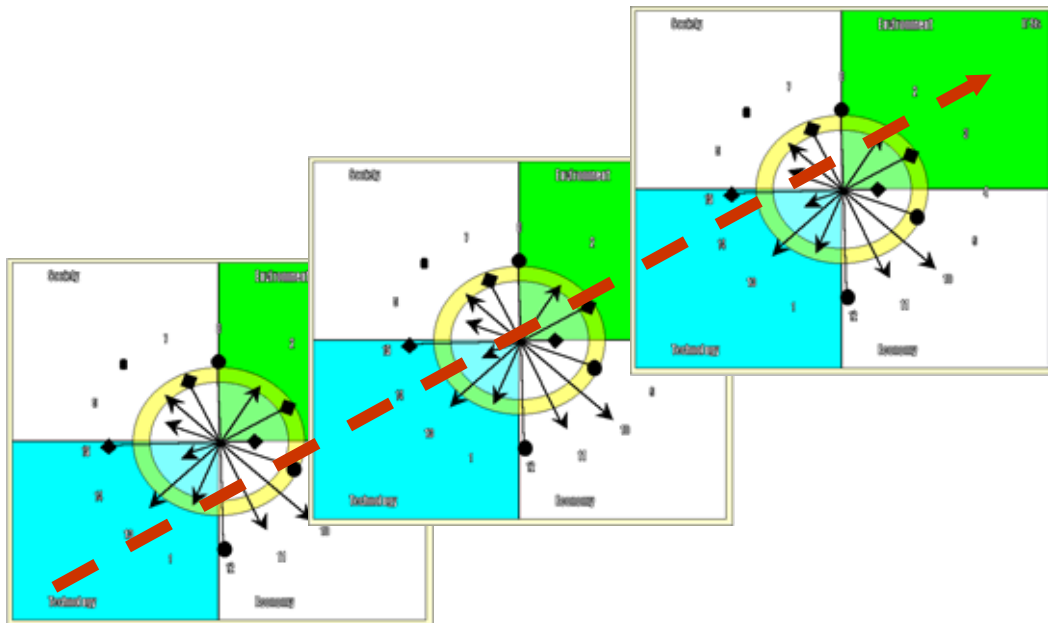


Fig. I. 4. SPSA methodology – example of AMOEBA (Ellul, 2002)

Another important function of this thematic activity was to serve as a vehicle for discussions between stakeholders. This forum was one of the few instances where stakeholders actually spoke to each other in a structured manner.

BOX IV

Scuba Diver

A is a scuba diving instructor who runs his own business located in the northern part of the island. Each year his company serves an undisclosed number of diving tourists which has diminished during the last few years. He emphatically insists that the September 11th tragedy in New York resulted in a momentarily accelerated downturn in a pre-existing downward trend. He summarises his problems in an old Maltese saying "Ghal kull ghadma hawn mitt kelb". In essence, it's a question of too many dive centres bringing divers and cramming them into a diminishing number of shore-accessible dive sites. His first solution was the purchase of a dive boat to take divers out onto the less-accessible, and therefore less-crowded, offshore dive sites. His other major concern is the overall diminishing quality of the dive sites. After a dive, tourists remark about the apparent barrenness of the sea. Fish life greater than 30 cm in length is practically impossible to find. The occasional sighting of an octopus often saves the day but even these are becoming increasingly difficult to find. This is in stark contrast to the abundant marine life in tropical oceans, on coral reefs featured on the numerous travel guides seen on TV. Most tourists today are far more discerning and well-informed compared than those that used to flock to Maltese shores a few years ago. The last remaining assets are the clarity of the Maltese seas, which permits visibility of some impressive underwater seascapes, and the relatively high standard of diver training offered by the dive shops. A possible long-term solution for the problems faced by the tourist diving sector is the realisation of the Marine Conservation Areas identified in the Structure Plan. The sinking of some wrecks to create new dive sites and renew diver interest has gone some way in addressing the problem but top-heavy bureaucracy in obtaining new planning permits for such wrecks has become a nightmare. This is in addition to the lengthy process which tourists have to undergo while applying for mandatory local diving licenses before they can dive in Maltese waters.



Plate I. 4. Divers (Role', 1998)

ii. Data management (*vide* Annex 1)

This activity was also important and valuable to the whole Project as well as to the work of the thematic teams. The initial standard database was very useful especially for those teams that carried out field work. Furthermore, the fact that data was available from a central point avoided frustration and time lost in trying to obtain data from other sources.

iii. A study of environmental health effects on Tourism (*vide* Annex 1)

The topic relating health with tourism is an important issue for Malta and for the Mediterranean region. An activity studying the impact of health on tourism as well as the environmental health effects of tourism on the population of Malta was implemented for the first time within CAMP. Furthermore it renewed the focus of MAP on health issues such as bathing water quality, quality of amenities provided and the impacts of tourism on the health of the resident population.

iv. Public participation (*vide* Annex 1)

CAMP Malta took a people oriented approach. In fact, many of the recommendations suggested in this document have been prepared together with stakeholders. This is characteristic of a bottom up approach, which should, in the future, produce better and more acceptable guidelines which are more in tune with the principles of sustainable development.

Furthermore both the Systemic and Prospective Sustainability Analyses and Participation activities brought into effect the principles originated in the RIO and Tunis Declarations as well as the recommendations of the MCSD.

I.4.2. TRAINING COURSES

Increasing capacity building was an important output of CAMP Malta. In fact various training courses were held during the project.

i. Resource Valuation

One of the main tools proposed to assist the achievement of SCM objectives was Resource Valuation. For this purpose a workshop was organized, aimed towards the introduction of this tool for environmental planning and management of coastal areas.

This workshop was very successful and should have had a wider audience (e.g. all team members, stakeholders) and should have also been included as part of the preparatory phase and considered as an activity on its own merits.

ii. Strategic Environment Assessment

Since SEA is a new tool to Malta and is to assume greater importance in the event of EU accession, a training course on its application was held. Following this training workshop an SEA of the draft North West Local Plan was carried out. For this assessment, the draft NW Local Plan policies affecting the coastal area (as identified in the Coastal Profile II, PA, 2001) were assessed.

The Strategic Environmental Assessment mainly focused on the direct impacts of the policies on the environment, however, other aspects were also considered. The five 'themes' under which these policies were assessed comprised: environment, quality of life, social, futurity and participation. It is intended to further develop and apply these techniques.

The main findings of the SEA exercise suggest that the NW Local Plan coastal policies, whilst highly integrative in nature, require further development in specific sectors in order to achieve the objectives of the SCM activity, i.e. the formulation of a management plan.

iii. Public Participation

A very informative training course on the application and different tools of public participation was held for the teams. This was particularly useful since it provided a good overview of the techniques and tools of participation and public involvement. It had a considerable influence in the eventual methodology which was applied locally.

I.4.3. OTHER TECHNIQUES

The PAP/FAO methodology for erosion assessment and mapping in the Mediterranean region has been adapted for use in small islands and this should be of considerable value in the Mediterranean, in Small Islands context or for small areas where a finer resolution is required.

The RAC/SPA classification scheme for marine benthos was also applied for the first time in the Mediterranean. Experience thus gained serves to improve the system and assist future workers.

I.4.4. ADMINISTRATIVE INNOVATIONS

- CAMP Malta had a lengthy preparatory phase and a short implementation phase. This was very useful and successful since it was in line with the funding cycles of donor agencies.
- CAMP Malta was the first Project which organised an Inception Workshop. This workshop was the first major step towards ensuring effective integration. During this workshop, the MAP consultants/experts, team leaders and team members discussed in detail the methodology and terms of reference for the implementation of the project on a thematic and project level. This was effective and useful in that all the teams were set towards one common methodology. Moreover during this workshop, responsibilities for tasks to be implemented were made clear and transparent.

- An Aide Memoir and a Memorandum of Understanding between the EPD and PAP/RAC was drawn up. This agreement was useful since it set out the responsibilities of the two main leading agencies of the CAMP Project.
- A Harmonisation workshop was held midway through the project. This served to further enhance integration and sharing of data. This also ensured that timeframes were kept and that any problems or difficulties were identified and addressed immediately. It also encouraged:
 - Exchange and sharing of experiences
 - Sharing and exchange of data gathered
 - Exchange of information
 - Sharing of opinions and views through discussions
 - Harmonisation of results at an early stage
 - Timely identification of practical and other implementation related problems
 - Better mutual information among teams and harmonisation and integration of respective results.



Plate I.5. During an SPSA workshop, October 2001, (Role', 2001)

I.5. MAJOR BENEFITS OF CAMP MALTA

The project has resulted in a number of notable benefits which are worth recording. These are divided into two categories: Capacity Building and Main Outputs.

I.5.1. Capacity building

- increased *knowledge of team members*
- *discussion between stakeholders* themselves
- greater *respect* and understanding between stakeholders
- brought together various professionals, experts and scientists from various institutions working towards one common goal
- acted as a catalyst to enhance cooperation between various *institutions* to work towards one common goal
- adapted *CAMP methodology* to the specific needs of Malta
- team members worked *within the context*, functions and responsibilities of their institutions, which will thus gain from the experiences shared
- the capacity of the relevant institutions were utilized and *shared experience* and knowledge with other team members was enhanced
- sectoral approach to problem identification and solving was reduced and *integrative approach was enhanced*
- extensive training in *new techniques and skills*.

I.5.2. Main outputs

- identification of a set of *priority key* issues deriving from each activity
- formulation of an *integrated action plan* to address the issues identified
- formulation of *post project activities* to implement the action plan
- *outputs integrated within new initiatives*
- identification of *possible funding structures*
- outputs directly applicable to and integrated within current national initiatives e.g. National Commission for Sustainable Development, Rural development plan, Beach management, etc.

BOX V

Family Man (Ragel tal-familja)

P is 42 years old and has worked all his life since when his father stopped sending him to school. He considers however that he has done well in life because he has managed to reach a grade of foreman in the firm where he works. Together with his wife N, they have raised a family of 3 children, after they got married 6 years ago. The next is expected early next year. They all regularly go to the beach so that the children can enjoy themselves under their watchful eye.

Going to the beach takes some organising since, because of the children they have to take many things. Their old car barely contains everything, many items such as chairs, table, tent and inflatable boat have to go on the roof rack.

Their special days are those when they decide to have a barbecue on the beach. Then he also has to bring along the barbecue and a sack of wood, and another picnic cooler to carry the food they will cook. They also have to bring along 3 lanterns and a couple of boxes of assorted softdrinks for the children and a few bottles of wine for him and his wife. He enjoys cooking the food himself, and thinks it tastes better when cooked just by the sea.

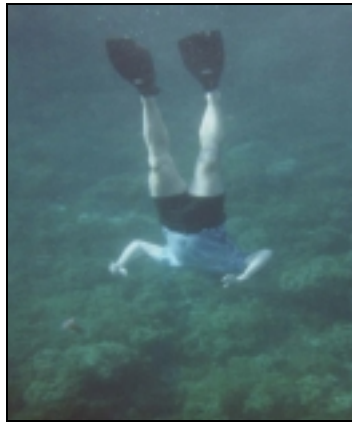


Plate I.6. Snorkeling is a favorite amongst Maltese and tourists alike (Role', 1998)

Their main problems stem from the lack of facilities and of space on the beach. Parking is also extremely difficult and to reach their favorite spot in time before some other family claims it, they have to leave home very early in the morning. Due to beach concessions very few places are free, most are occupied with umbrellas and beds right down to the water's edge since sunrise. He has to put up their tent so as to protect the children from the UV which the doctors on the TV say is very dangerous. P is often annoyed that it costs a fortune to buy something you forgot at home from the beach shops. And they do not even give you a VAT receipt. You even have to pay to use their toilet. The sand is often dirty and the rubbish tanks are full of bees which endanger the children. They get filled up very quickly so the rubbish falls all over the sand. This needs to be seen to by the government. To avoid such problems he always digs a deep hole in the sand and they bury their rubbish and the ashes from the barbecue.

When it starts to get colder they go to the country instead of the beach. They find a nice field which he can drive into and they set up the tent there. The children play football and roam around, although they are always afraid that they may fall into some well. They are also afraid of people with shotguns who are always roaming around the countryside. Once somebody fired near them and lead fell around them.

P wishes for some peace and quiet where he and his family can enjoy nature.

II. THE PROJECT AREA

The project area was the island of Malta with particular focus on the northwest as delineated by the Structure Plan 1992.

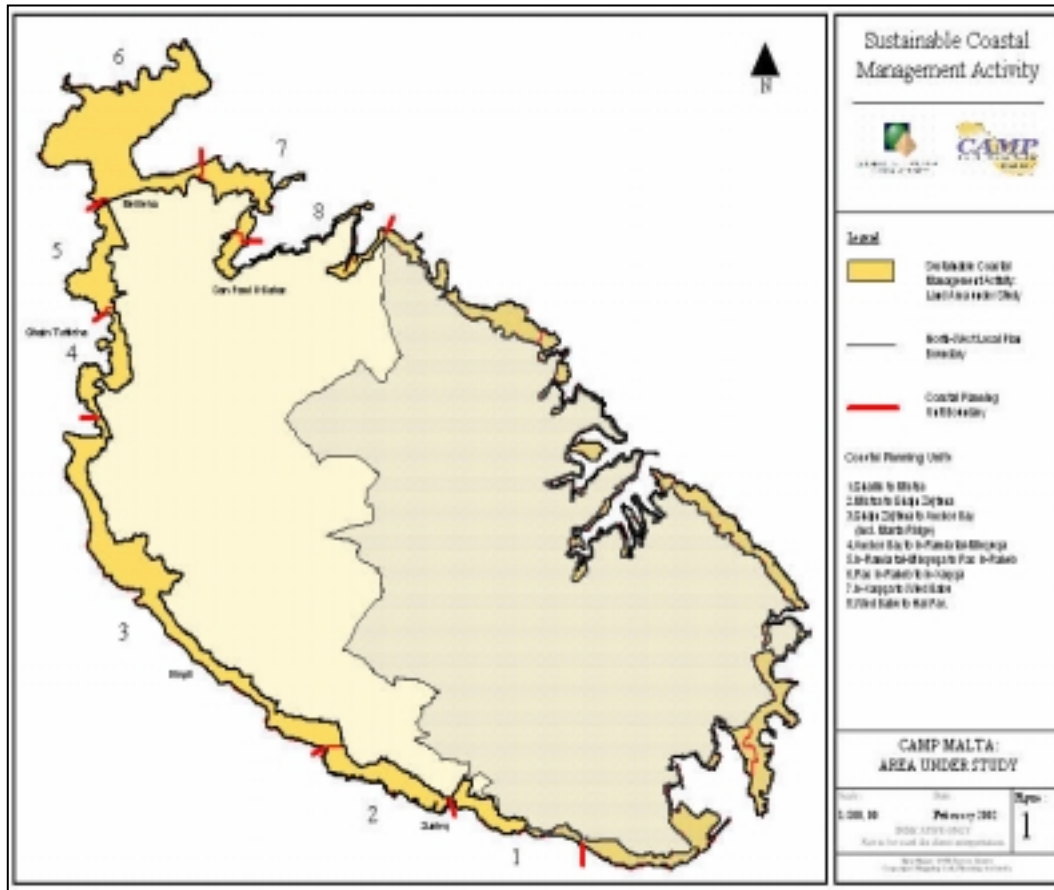


Fig. II.1. Northwest Malta, showing the strip of coastal zone that was identified by CAMP Malta (Source: SCM Final Activity Document, 2002)

II.1. Why the Northwest?

Several factors were taken into consideration when the site for the demonstration area of CAMP Malta was selected. Amongst these:

1. The Northwest Malta has a unique geographical character. It is primarily rural in nature, with specific geological and geomorphological features. The perched aquifer, the major source of potable water in the Islands which is also exploited by the agricultural sector is also located in the NW.
2. This region also contains a number of proposed candidate sites for Marine Conservation Areas.
3. Apart from the natural characteristics of this area it is also subject to very high pressures from tourist arrivals, and for increased development to accommodate them, and provide amenities for their benefit.
4. At the time of the project implementation, the competent authority regulating development, was preparing a comprehensive local plan for this region.

Therefore this project offered synergistic and complimentary outputs to the Local Plan.

These factors thus ensured that the results and experiences acquired through CAMP would produce immediate inputs into national projects which were already in progress or about to start.

BOX VI

Caravan Owner

M owns, what she calls, a "caravan" within the recreational settlement located on the North side of Mellieha Bay. She lives in the caravan during the summer months and often spends the occasional weekend during the colder seasons. She claims that the view from the terrace is worth every penny that she paid for the original hut that had been placed on the site by a previous owner. She now pays LM40 annual ground rent to the Department of Lands. Water, electricity, and sewage services have been supplied to the site during the last few years and these have made life much easier for the residents. There is also an active Residents' Association which issues rules of conduct regarding sensitive issues like parking and barbecues. The Association also represents their interests in negotiations with government authorities. M regards the caravan as an accessible alternative to the expensive holiday apartments located on the south side of Mellieha Bay and argues that lower income families should also have the right to the traditional Maltese "villeggatura". A more important consideration, however, is the sense of belonging within a community that exists in the locality. This reminds her of her younger years when real neighbourhoods thrived in every town and village in Malta and families, friends, and neighbours sat on their doorstep on hot summer nights telling stories and talking about other people and the most mundane of matters.

Furthermore, the children have direct access to sea, and with relatives having caravans close by. M cannot imagine herself going back to commuting to the beach on summer Sundays with her family.



Plate I.7. 'Caravans' at Ghadira Bay (Vella, 2002)

II.2. Defining the coastal zone in Malta

In Malta there is as yet no common or unique definition of what constitutes a 'coastal zone'. Certainly the authors could not find a clear unambiguous legal text to guide them. There are however a number of complementary 'common' definitions, each serving a different purpose. Although it is generally intuitively understood what is meant by 'the coastal zone', it is difficult to place precise boundaries around it, either landward or seaward. For example, the coastal zone itself is an area considered, in some European countries, to extend seawards to territorial limits, while by some others, to the edge of the continental shelf at around the 200m depth contour is regarded as the limit. The landward boundary of the coastal zone is similarly vague.

CAMP Malta was running in parallel with other work being carried out by the various agencies and institutions. The Planning Authority in particular, had initiated the Structure Plan Review process aimed at addressing current and future issues to be incorporated in a new replacement Structure Plan. One of the topics covered in this review is coastal planning and development. For the purpose of this review the Planning Authority identified a coastal zone boundary which was innovative and which could find application in small islands or for small sections of 'coastal zone' where greater definition and detail is desired.

Thus the coastal zone as defined by the Coastal Strategy Topic Paper (PA, 2001):

“A coastal boundary for Malta has been identified on the bases of ecological, physical and administrative criteria. Consequently there are variations in the coastal widths between one area and another. The CZ boundary is significantly close to the coastline within coastal settlements and towns and is limited to the first road aligning the coast. In rural areas however the boundary is predominantly characterised by ecological systems and extends further inland.”

With a total land area of approximately 315.4 km², the Maltese archipelago has a shoreline of about 200km. The islands' coastal areas are generally characterised by cliffs, clay slopes and boulder rocks. About 57% of the coast is inaccessible, due to its physical features. The remaining 43% however is very heavily utilised for residential and economic purposes.

On the above bases the Structure Plan will identify a land area of about 61.8 km² making up around 19.6% of the total land mass as 'coastal zone'. This is the definition which has also been endorsed by MEPA.

The final definition of the boundary for the Maltese 'coastal area' should be reserved until any specific details existing in the other areas not covered by this CAMP have been identified and studied. This matter could be delegated to the Coastal Resources Advisory Board which it is intended to set up as an outcome of the recommendations of CAMP Malta. Such a definition can then be communicated to the MAP Secretariat pursuant to the provisions of the amended Barcelona Convention.

BOX VII

Environmentalist

It is frustrating when beach space is taken up by the private sector for umbrellas, as are the barbecues in the evening both private and individuals. Umbrellas have to be organised on sandy beaches so as not to have an impact on the ecology such as Ramla Bay and Golden Bay. Furthermore, the construction of illegal boat houses used as summer houses and parking on sensitive areas such as sand dunes are a problem. The coast should be protected and no further development should be allowed. Facilities for boating activities should be concentrated to already existing sites rather than the creation of new ones

From an NGO point of view, no adequate protection is given to coastal habitats. Barriers protecting sand dunes should be set up. Restrictions on barbecues and other conflicting activities should be enforced. Parking is also a major concern due to the amount of cars, which at times end up parked in ecologically important sites due to limitations thus contributing to degradation.

A national policy should be adopted. This could be similar to the policy enforced at Ramla Bay where amenities were set up near the road thus reducing pressure on the sand dunes. Education signs and barriers should be set up near sand dunes and ecologically important sites. Furthermore, beaches in Malta should be considered as pocket beaches and thus treated differently when looking at Blue Flag criteria. Full protection is to be given to the remaining coastal habitats. Marine protected areas should be introduced without further delay.



Plate I.8. Gnejna Bay – first MCA? (Grech, 2000)

III. KEY ISSUES

Key issues are fundamental considerations in integrated coastal area management. They also characterise the problem-driven approach to environmental planning and management. What constitutes a *Key Issue* and who generates and defines these key issues?

These questions fit into the general strategy of ICAM. It is important to emphasise that ICAM is a continuous process and should not end with the drafting of a final exhaustive and prescriptive document; no matter how integrated it might be. It should rather be regarded as the initiation of a process which is aimed at achieving sustainability within the coastal zone. In this respect, the major contribution of the CAMP Malta project is the delivery of the method that has been employed to define and identify key issues.

Thus, the intention of this document is not to be a repetition or summary of the individual thematic reports. It is rather far more useful to elicit the main issues that can be identified from the thematic reports, and to attempt to integrate these issues within a definable structure.

III.1. What Constitutes a Key Issue?

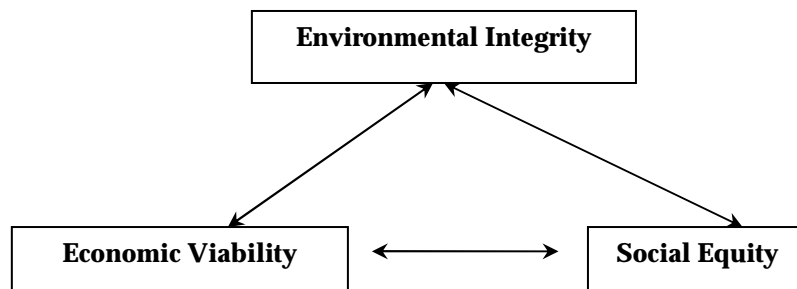
Several different criteria can be employed to define key issues. Zonation exercises, conducted by land use planners, often focus on the magnitude of the geographical expression of a particular issue. This is normally combined with the severity of its socio-environmental impact. This gives raise to key issues which reflect social values or more often, some elements of social inequity.

One other criterion which can be used for the definition of a key issue is the fact that it can be adequately addressed through a specific set of recommendations. This document gives examples of such recommendations.

III.2. Who identifies and generates Key Issues?

Most of the key issues identified in this document were generated by the participants in the respective thematic groups. This is considered to be particularly appropriate since such a process accords credit to the efforts made in the groups.

The thematic groups also contained a strong element of public participation and involved several stakeholder organisations. The focus of the discussions was that of sustainability and its three inter-related "pillars" defined as:



Some previous CAMP exercises have been criticised in that the key issues could have been written by a reasonably competent group of experts/planners sitting around a table⁴. It is often ironic that, despite publicity campaigns, most ordinary people are blissfully unaware that the future course of their life is being planned in some office, let alone have some say in it! This is often referred to as "top down planning approach". It is through such innovations that CAMP can offer an alternative to the traditional planning paradigms.

III.3. Organisation of the Matrices

In this document, the key issues are presented as a set of matrices which aim to facilitate reading and ease of comprehension. Each of these issues was derived from the four thematic groups which formed the basis of CAMP Malta Project. Each thematic group has a separate set of key issues.

As mentioned above, these issues are classified under the three pillars of sustainable development:

- Environmental integrity;
- Economic viability;
- Social equity.

This grouping exercise served to identify gaps within each thematic group and ensured some measure of comprehensiveness.

Horizontal headings in the matrices reflect a standard logical argument where particular key issues are discussed in terms of the manifested problem, the main identifiable causes of the problem, the geographical sphere of impact of the issue, and any specific actions which are currently addressing some aspect of the issue or some future actions that can address it.

⁴ This emerged from the general discussions regarding the contribution of CAMP projects during a meeting: PAP/METAP Coastal Area Management Programmes: Improving the Implementation., Malta, 17 - 19 January 2002.

III.4. KEY ISSUES ORIGINATING FROM THE THEMATIC GROUPS

Activity 2: Marine Conservation Areas

*Secure **Environmental Integrity** for the Marine Conservation Area into the foreseeable future*

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Safeguard biodiversity for the Marine Conservation Area	Depletion of habitats for biotic assemblages within the MCA.	Over-exploitation of marine resources (e.g. unsustainable fishing and 'taking' or 'harvesting').	MCA and surroundings	Legal protection; adequate enforcement; environmental management; constituency building.
Promote a deeper understanding of the key biogeographical processes within the area	Lack of long term information about biogeographical processes in MCA and surrounding areas.	Costly surveys; potential sources of voluntary information not tapped.	MCA and surroundings	Monitoring program needs to be implemented. Base line study has been conducted.
Decrease the threat of pollution in MCA	Pollution from hydrocarbons; and Sewage. Possibility of aquaculture in area.	Bunkering activity within and close to MCA; oil slicks, untreated discharges, drift into area; aquaculture ventures.	MCA and surroundings	Control and mitigate activities which cause pollution in area through management plan.

Ensure Economic Viability for the MCA

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Promote <i>sustainable</i> economic activity within the areas: <ul style="list-style-type: none"> • fisheries; • tourism; • agriculture 	Much economic activity in the area is extractive (e.g. fishing) while tourism has often exceeded carrying capacity.	High population density; acute demand for marine and terrestrial recreational activity.	MCA and contiguous terrestrial zone	Promote eco-tourism and related economic activities within the area.
Reduce conflicts and promote greater eco-efficiency	Development and recreational pressures within the area and contiguous terrestrial zone are acute.	Competition for scarce natural resources; coastal locations command premium land prices.	MCA and contiguous terrestrial zone	Identify and map economic activity and land use within the area. Protect uses necessitating a strictly coastal location.
Ensure that EIAs for coastal development address cost benefit analyses and contingency valuation in ToRs	Incomplete or failed coastal development projects create permanent scars (e.g. spent quarries) and occupy space which could be used by alternative economic activity.	Land speculation; risky economic climate; lack of adequate control by financial institutions; inadequate bank bonds, completion and termination insurance and other related structures.	Contiguous terrestrial zone	Refine planning guidelines and consent conditions to include sound financial guarantees for successful restoration on eventual termination of activity.

Secure Equitable Use and Access to the MCA

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Activate an integrated management plan for the MCA emphasising strategic elements	MCA's tend to be ad hoc isolated cases often missing the national dimension	Inadequate funding structures and resistance to MCAs from powerful sectoral interests.	MCA	Draft strategic plan for national system of MCAs.
Activate real and effective public participation within management structures	Top-down planning approaches	Management & planning agencies fear public involvement anticipating informed & effective resistance.	MCA	Create a well-publicised public participation program which includes formal as well as informal meetings with stakeholders and peripheral users Meet stakeholders in their environment.
Control illegal claims to littoral resources (e.g. squatter recreational settlement; boathouses etc.)	Squatter settlement occupies valuable littoral space, spoils landscape value; health risks.	Lack of adequate enforcement resulted in land grabbing exercise.	Contiguous terrestrial zone	Eviction and clearance of illegal structures. Ensure free and unhindered access to the foreshore by the general public. Monitoring.
Promote public educational campaigns aimed at fostering stewardship	Lack of public commitment to MCA's and fear of control over present activities.	Inadequate public participation in the creation of MCAs. Ignorance of benefits of MCAs.	Maltese Islands	Create an educational program aimed at the widest possible audience and meant to foster a constituency for MCAs within the country.
Procurement of adequate information regarding human activities within proposed MCAs	Little information currently existing regarding socio-economic activities within proposed MCAs.	Data gathering is costly and existing data banks refer to geographical boundaries which are not suited to MCAs.	MCAs	Conduct carrying capacity studies for beach users within MCAs; conduct spatial & temporal surveys regarding specific sets of recreational activity within proposed MCAs; establish baseline data sets regarding human activity within the sites.

Activity 3: Integrated Water Resource Management for the NW

*Secure **Ecological Integrity** for water resources into the foreseeable future*

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Safe guard water course ecosystems by allocating and reserving adequate water resources for such systems	Drying up of ecologically important habitats.	Lack of adequate enforcement of legislation resulting in intensive abstraction of surface and groundwater for domestic and agricultural use.	Perched aquifers and watercourses	Designation of specific areas requiring quality and quantity protection of surface and groundwater. Enforce control over abstraction. Land use zoning and planning exercises need to be more sensitive to aquifer recharge areas.
Maintenance of water retaining structures	Flooding is occurring due to rapid runoff from catchment areas, urbanisation/sealed surfaces. Freshwater is lost as surface runoff and aquifer recharge reduced.	Lack of sensitivity to surface water runoff control when building roads/development. Lack of holistic approach to storm water management and control, with lack of shared responsibilities & ownership. Lack of cleaning of dams and valleys.	Maltese Islands (urban and rural)	Rehabilitation where necessary or construction of stormwater systems in urban areas Construction of check dams where appropriate and other aquifer recharging constructions. Periodic and systematic cleaning of valleys and watercourses in a manner which is sensitive to ecological criteria.
Maintenance of soil retaining structures	Breaches in retaining rubble walls. Valleys and dams are often blocked with silt and accumulated debris.	Lack of maintenance of rubble walls.	Maltese Islands (urban and rural)	Maintenance of field terraces and retaining rubble walls.
Safeguarding ecological integrity and richness of biodiversity of flood prone low-lying areas	Increased magnitude of seasonal extreme flood events and severity of seasonal drought diminishes richness of biodiversity in such areas.	Sealing of storm water retaining and absorbing surfaces, redirection of storm water flow. Over -abstraction of low-lying aquifers and consequent lowering of water table.	Low lying areas	Monitoring of biodiversity status in these ecosystems. Drafting of management plans that adequately address such issues and integrate these in a National Stormwater Masterplan.

*Ensure **Economic Viability** for water resources*

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Meeting the increased demand of good quality water for domestic use in a cost effective and environmentally sustainable manner	Limited aquifer resources and contamination of such resources by saltwater and pollutants.	Semi-arid climatic regime coupled with increasing demand for water from domestic, industrial, agricultural and tourist sector.	Perched and sea level aquifers	Avoid or Control pollutants that contaminate aquifers. Need to create price structure that better reflects water costs. Need to internalise the environmental cost of water production. Need to reward and subsidise water conservation measures, e.g. construction of cisterns, etc. Invest in technology that permits sustainable water recycling systems. Educate users of possible pollutants (e.g. fertilisers and manure) on how to use organic and inorganic substances rationally to minimise such contamination. Department of Agriculture and MEPA should intervene. Effective Control of private groundwater and surface water extraction by MRA.
Identification of alternative sources of water for secondary uses	Some water users may not require first class water but these are still competing for limited first class water reserves.	Some farmers in the NW look down upon farmers in the South who use treated sewage water for irrigation. Some sewage water in the NW is too salty to be recoverable.	NW	Improve and increase efficiency of sewage treatment plants and market second-class water. Provide for efficient management and utilisation of storm water. Reduce salinity in sewage by controlling seawater intrusion and discharge of brines from hotel and domestic RO plants.

*Ensure **Social Equity** for water resources*

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Integrated water resource management	No clearly defined responsibility and ownership of ground water resources, leading to mismanagement, misuses and overexploitation, of water resources and lack of control on use.	Inadequate legal provisions defining ownership of water resources. Some users in specific sectors have been overlooked in this regard.	Maltese Islands	The recently set up Malta Resources Authority should act as focal point to resolve issues related to water ownership and use. Each sector should be assigned specific ownership rights and responsibilities.
General public and water consumers should be made aware of the high financial and environmental costs involved in the production of good quality water	Present price structures and subsidies for water consumers obscure the real cost of water production. Environmental costs need to be internalised in the cost structure.	A very high percentage of water needs to be desalinated at great financial and environmental cost.	Maltese Islands	Initiate an intensive public awareness campaign regarding real cost of water production. Provide incentives for water conservation, reduction and frugality amongst water consumers. Continue to increase water production to maximum environmentally sustainable level.
Creation of a reliable central database using standard datasets which are transparent and accessible to the general public in accordance with Aarhus convention	Data is non-utilisable and often inaccessible to some sectors. In some cases, datasets are prohibitively expensive even for researchers who in their turn would contribute to the augmentation of the dataset.	Current shortsighted rational charges for the dissemination of data are a major obstacle to research on the subject.	Maltese Islands	Setting up of a reliable central database on hydroclimatological issues. Ensure equitable accessibility.
Provide enhanced civil protection measures in flood prone areas	Increase in frequency of flooding in urban areas, property damage is increasing.	Increase in storm water runoff coefficient. Lack of implementation of control over surface runoff and sealing of catchments.	Maltese Islands	Public Information on extreme weather events. Planning Guidance to architects and planners and clients

Activity 4: Soil Erosion/Desertification control management

*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 which 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 stormwater 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 stormwater 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.

Activity 5: A study of environmental health effects on Tourism

*Secure **Environmental Integrity** for sustainable tourism into the foreseeable future*

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Ensure a clean healthy environment	Air pollution threatens natural resources and the quality of the visitor experience.	Transportation and power generation are not complying with established thresholds.	Maltese Islands	Sources of pollution should comply with established standards. Provide co-ordinated concerted efforts by the relevant authorities to satisfy the tourism and health sectors.
Provision of good quality drinking water	Deterioration of water quality.	Contamination of aquifers. Semi-arid climate and accelerated demand, hindered aquifer recharge status.	Aquifers	Tourism sector should take the lead in water conservation. Better management of demands of water by the tourism sector. Ensure aquifer recharge. Relevant management plans should address the issue.
Preservation of the natural ecosystems	The protection and maintenance of ecologically sensitive areas is perceived as the sole duty of MEPA.	The degradation of the natural environment has immediate negative impacts on the tourism sectors resulting in a decrease in the economic gains to Malta.	Ecologically sensitive areas	Tourism industry must contribute and actively participate in the conservation and rehabilitation of the natural ecosystems of Malta. Tourism development and activities must be in conformity with environmental considerations. CCA needs to be introduced and applied as a tool sustainable utilisation of resources.
Solid waste management	Contamination leading to rodents, disease outbreaks.	Lack of education amongst coastal zone users (including tourists). Inadequate funding structures for beach cleansing, lack of solid waste management programme.	Beaches	Sustained awareness campaign. Provision of amenities, provision of adequate collection and removal of solid waste, ensure enforcement.

Bathing water quality	Discharge of untreated sewage, inshore fish farms, hydrocarbons from shipping industries and land based sources, sediment and pollutants from storm water runoff.	Inadequate enforcement and control of off shore activities and illegal practices	Marine environment	Blue Flag management standards applied for specific beaches. Speed up implementation of MCAs. Fish farms taken offshore, enforce stricter control on permit holders and shifting of existing farms further offshore. Ensure management of storm water and proper runoff points for storm water. Construction of sewage treatment plants. Encourage tourism sector to reuse/recycle methods, create incentives to maintain good bathing water quality in the contiguous beaches of the hotel, including monitoring, cleaning, etc. Empower environmental wardens to issue hefty and on the spot fines.
Ensure high quality agricultural produce for tourism sector	The tourism sector depends to a large extent on the quality of agricultural produce. A decrease in quality and quantity of agricultural produce would lead the tourism sector to rely heavily on non-indigenous products.	Loss of agricultural productivity by e.g. soil erosion, decrease in soil quality.	Agricultural areas	Promote organic farming. Encourage sustainable agricultural practices, e.g. integrated pest management. Encourage establishment of firm link between agricultural and tourism sectors stressing their interdependence.
Integration of touristic development and Hotel landscaping within the Mediterranean rural character	Loss of local Mediterranean character.	Planting of non-indigenous species, lack of awareness of potential market niche.	Hotels and tourism development areas	New landscaping development should utilise the use of indigenous species. Create incentives to hoteliers to promote indigenous food grown within the hotel grounds themselves. Insert criteria for using xeroscape in the grading system if a hotel. Promotion of compatible architectural style.

Ensure Economic Viability for the tourism sector

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Conserve and protect the cultural and historical heritage of the Maltese Islands	Maltese heritage potential is currently under-utilised, and there is much scope for its development to meet the needs of specific sectors such as tourism. There is a lack of information amongst the locals and internationals on the cultural wealth of such sites.	The management needs are not proportional to huge scale and endowment of heritage wealth in the Maltese Islands.	Cultural sites	Current re-organisation of the Museums Department into an agency which is more responsive to the need of the Maltese heritage. Establishment of a National Heritage Inventory to provided baselines for future management plans.
Promote agro-tourism aimed at specific agricultural produce, e.g. viticulture, olive production	Under-utilisation of agricultural resources and potential within the tourism sector.	Lack of appreciation of economic value of agricultural resources as a source of tourist investment.	Maltese Islands	Sensitisation of Department of Agriculture. Encourage viticulture and olive production, gastronomic products, e.g. sun dried tomatoes.
Promote cultural and historical sites	Lack of appreciation by locals and foreigners.	Lack of promotion and lack of related activities.	Maltese Islands	Re-direct finances back for the management of these sites. Create more heritage trails. MTA should take a leading role in sponsoring the promotion. Promote more festivals geared at specific indigenous activities, e.g. wine picking.

*Ensure **Social Equity** in the Tourism sector*

KEY ISSUES	PROBLEM	CAUSES	ZONE OF INFLUENCE	ACTIONS TO IMPLEMENT
Provision of up-dated information to tourists	Tourists are not always aware of the ecological, scientific and cultural value of the Maltese Islands, including to the coastal zone.	Tourist information brochures do not adequately address the issue and emphasis is given to the recreational aspect only.	Maltese Islands	MTA, NGOs and other concerned authorities should strengthen efforts to promote more environmentally sensitive tourism. Promote Eco-tourism. MTA should use all available means to promote, prepare and disseminate information.
Develop eco-label and certification schemes	Lack of sufficient knowledge on environmental and/or health issues within people employed in the tourism industry as well as the tourist themselves.	Lack of adequate training and environment education within the tourist industry.	Tourism sector	Promote rewards for best practice, enhance marketing of awards. Promote environmentally friendly management. Ensure adequate training. Promote environmental audits and other related environment conscious initiatives.
General public should be made aware that their well-being and that of the tourist is directly related to the state of the environment	A deterioration of the quality of the environment leads to decrease in the well-being of the domestic and foreign tourist; also a decrease in tourists visiting the Islands.	Environmental health issues are not given due importance.	Maltese Islands	The Tourism strategy should integrate environment with health aspects. Initiation of an evaluation of the impact of tourism on the environment and the health of the national population.

III.5. INTEGRATION OF ISSUES - CONFLICTS AND SYNERGIES

The compilation of the key issue matrices for each thematic group permits the integration of selected issues into standard systems diagrams where the interaction between the various components of an issue can be identified. The main advantage of these standard systems diagrams is that such diagram can serve as a starting or focal point for discussions between interested and or responsible government departments, autonomous institutions, and other stakeholders.

Issues may be couched in terms of conflicts or synergies. Two case studies are given below for illustrative purposes but are not meant to be completely exhaustive.

III.5.1. Identification of conflicts: Clearing of Watercourses

The first case study concerns the issue raised by farmers in the Northwest, regarding the clearing of watercourses. Farmers insist that watercourses must be regularly cleared of accumulated debris in order to prevent flooding, rubble wall breaches, and consequent soil erosion in low lying fields. Conservationists argue, on the other hand, that previous watercourse clearing exercises had resulted in the wholesale destruction of fragile habitats which are rich in endangered and endemic species. Most of these species are now legally protected. Therefore, watercourse clearing (their habitat) has virtually become an illegal exercise. Placed in a simplistic way, the situation can be illustrated as in Fig. III.1. This is the format in which the issue is known to most of the farmers interviewed during the CAMP process.

At face value:

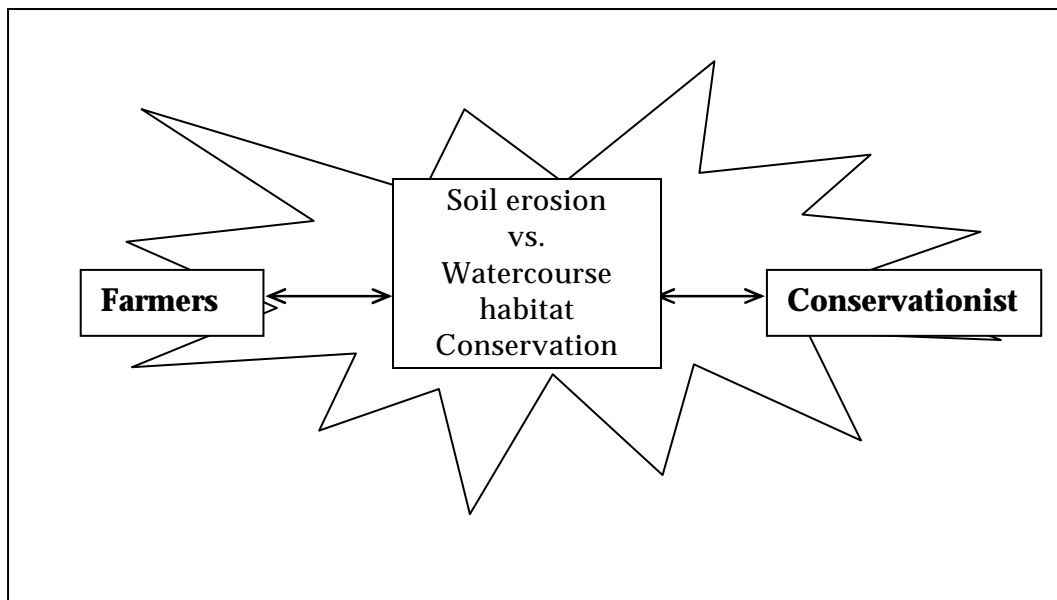


Fig. III.1. Identification of Conflicts: Clearing of Watercourses

A more detailed investigation, however, reveals that the real situation is somewhat more complex. Everyday human intervention in watercourses, still occurs through sedimentation processes, and the accumulation of debris and assorted discarded material. This steadily accumulates along watercourses, due to non-intervention, and eventually poses a different set of problems. Farmers rightfully maintain that inadequate drainage leads to destabilisation of slopes and rubble wall collapse and this was in fact documented after the sustained rainfall that occurred during November 1999. Moreover, the locations with the highest risk of soil erosion are the clay slopes below the perched aquifers where several watercourses originate⁵. All of these factors work synergistically towards a situation where slumping and other forms of mass movement occur with much greater magnitude than before.

It can therefore be argued, that the impact on watercourse ecosystems is expected to be correspondingly much higher than in previous years. The net long-term impact of non-intervention on watercourse habitats and wildlife may actually be much higher despite the laudable intentions of the non-interventionist lobby (Fig. III.2.).



Plate III.1. Tas-Santi valley, l/o Mgarr, NW (Role', 2000)

⁵ This has been firmly established and mapped by the Soil erosion/desertification thematic study.

At a closer look: -

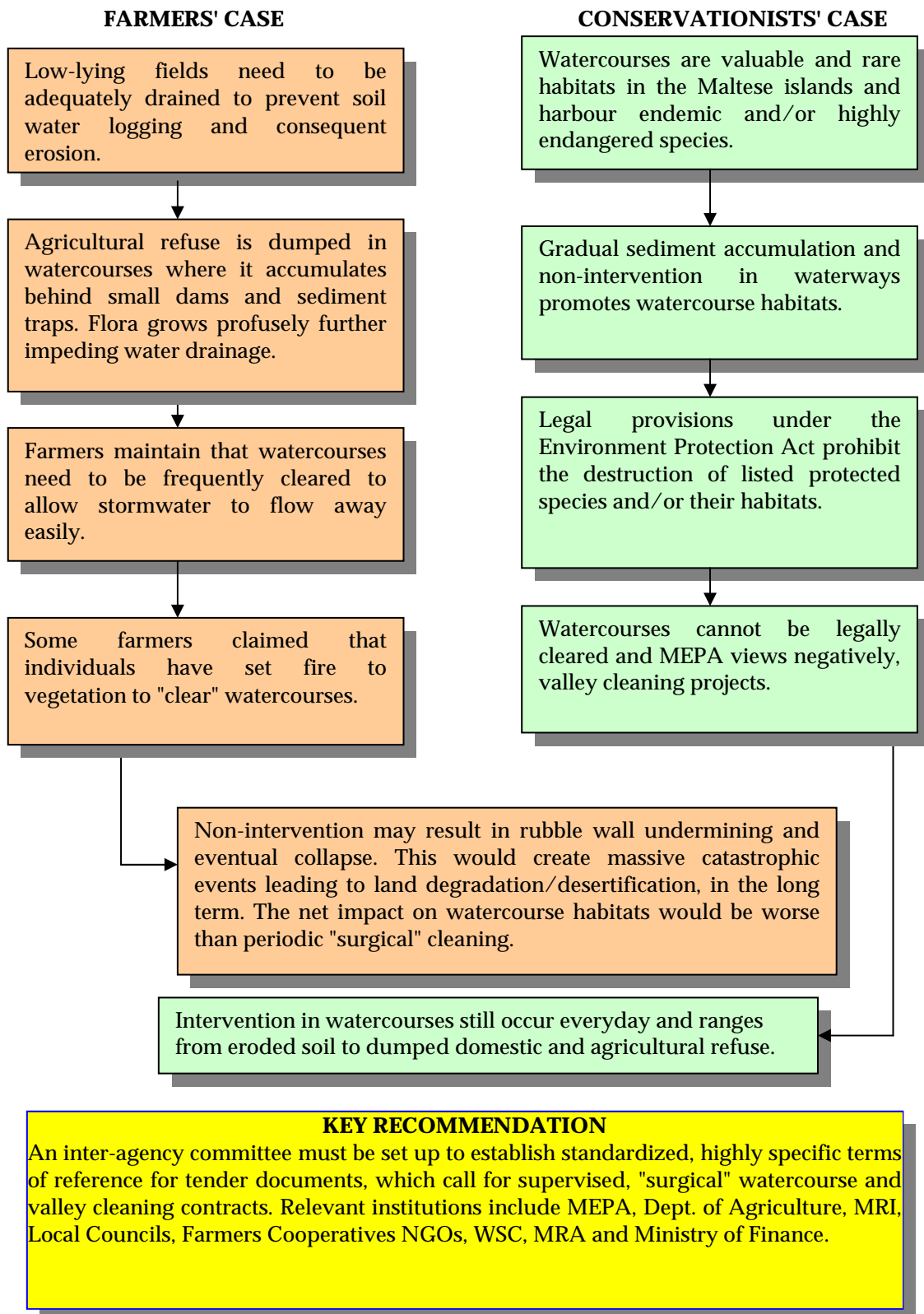


Fig. III.2. Identification of conflicts - long-term watercourse management

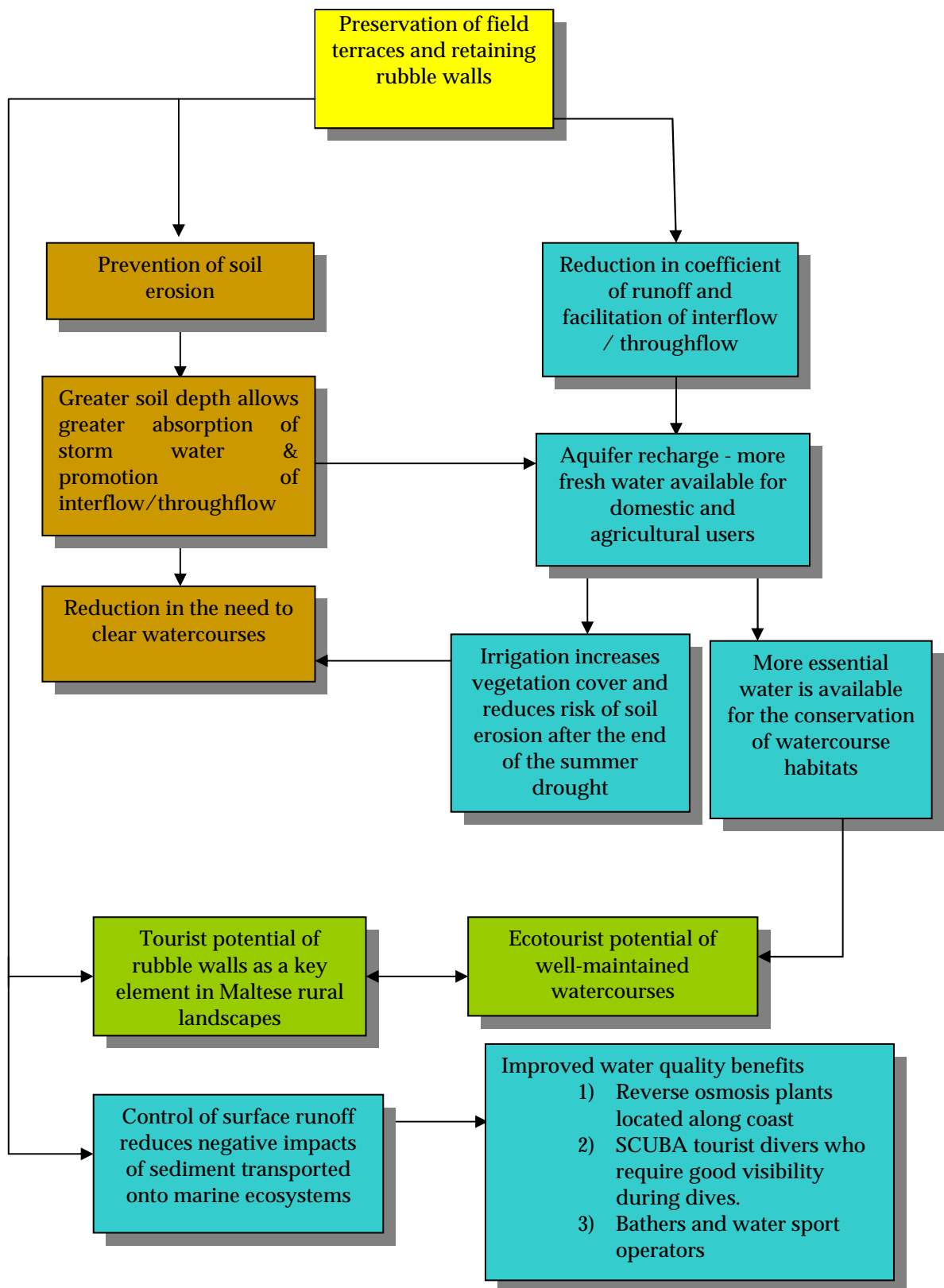


Fig. III.3. Identification of Synergies/Complementarities: Preservation of rubble walls

This second case study illustrates the synergy that exists in maintaining field terraces and their retaining rubble walls. The most obvious benefit derives from the purpose and intention for which they were originally constructed; which is the prevention of soil erosion. However, other benefits include habitat creation, aquifer recharge, conservation of watercourse ecosystems, protection of marine ecosystems, and tourism.



Plate III.2. Terracing and retaining rubble walls on valley sides, Mellicha (Vella, 2002)

Other case studies may be explored for conflicts and synergies in a similar manner.

The public participation exercise brought forth other issues into the limelight. Some of the more pressing problems include the acute competition for scarce aquifer water, which is bringing farmers into conflict with the Water Services Corporation/Malta Resources Authority. Increased demand for quality fresh vegetables during the tourist season necessitates irrigation, but many farmers' wells have run dry while the quality of the water has deteriorated considerably due to over-abstraction and poor replenishment in the current multi-annual dry period.

In addition, aquifers are also increasingly threatened by pollutants from agricultural sources like fertilisers, feedlot livestock, pesticides and herbicides. One of the recommendations made to farmers calls for a greater harmonisation between the Department of Roads and local farmers where the latter may gain from road culverts diverting water into roadside water storage reservoirs. This would reduce stormwater flow and soil erosion effects, and, at the same time, afford some relief from the ever increasing flooding events down the valley. At the same time, farmers would benefit from the availability of irrigation water, and remarked that they would be highly receptive to such incentives. In fact, Maltese farmers have a long history of diverting stormwater from the roads into roadside reservoirs. Local drivers are familiar with sackcloth mounds placed across streets in rural areas to divert even the smallest road surface runoff.

Another key issue that needs to be tackled concerns the fears expressed by fishermen regarding marine conservation areas. This issue echoes that of the preservation of field terraces and maintenance of rubble walls. A short term apparent conflict should, in the longer term, prove to be more synergistic in that fishermen would benefit from "no take" zones as fish and other marine life would be allowed to restock depleted areas.

Concurrently, the tourist SCUBA diving industry would benefit enormously from the establishment of MCAs and this would provide a strong economic argument for their establishment. This argument can also be used to ensure that pollutants within the areas are strictly controlled. Offshore bunkering, marine aquaculture activities, and sewage disposal practices pose serious threats to marine ecosystems and need to be adequately mitigated.

III.6. RECOMMENDATIONS

The validity of the CAMP integration process lies mainly in the identification of specific recommendations which are often quite manageable in proportions. The drafting of a set of terms of reference for watercourse cleaning is a relatively low cost exercise while subsidies to farmers to maintain rubble walls would be marginally higher. Equally important is the identification of beneficiaries and stakeholders.

The detailing of country roads to reduce runoff flow rate (decreasing soil erosion and flooding) and to increase diversion of water to cisterns (many of which are in place) is another zero to low cost recommendation.

It must be emphasised, however, that the strongest element of CAMP is the fact that most of these key issues and recommendations originate from stakeholders and the public, in general. The authors of this document have essentially articulated stakeholders' concerns, demands, and recommendations.

The practice of initiating and preparing policy jointly with stakeholders is a key element in extending the subsidiary principle to the individual stakeholder level, up though to NGOs and Local Councils. All of these have a need for a forum in which they can comfortably express their views, concerns and suggestions, and the authors firmly believe, based on a positive experience, that the CAMP process offers such a vehicle and methodology.



Plate III.3. Informal discussion with stakeholders was a positive experience in CAMP Malta (Role', 2001)

IV. IDENTIFICATION OF GAPS AND EMERGING ISSUES

Many of the environmental pressures in the Maltese Islands become more evident in the coastal area. The results of the thematic studies have confirmed that the source of these impacts can be traced well into the inland areas. Thus, these impacts could either originate from specific and well-defined point sources, e.g. pollution, quarrying, animal husbandry or from other diffused sources such as urban runoff. Both types can affect whole valley systems or watersheds.

Impacts/pressures upon the marine habitat also arise from activities and incidents originating in the internal or territorial waters, as well as from off shore neighbouring waters, thus bringing into action transboundary effects, e.g. oil spills.

The importance of such pressures has set the basis for this CAMP Project. However, during the implementation of the thematic activities and during the compilation of the respective Final Activity Documents and this document, it was observed that additional. Possible impacts and pressures have been identified. These gaps diminish the appreciation or full understanding of the value, magnitude, significance and importance, thus these are being briefly reproduced below.

This chapter is largely based on the outputs of the Sustainable Coastal Management activity.

These identified gaps and emerging issues have been classified under three broad headings:-

- **Functional Gaps**
These are gaps identified in the legal, administrative and management structures of Malta, which have an influence on coastal issues.
- **Spatial Gaps**
These are gaps in management structures which affect specific areas or locations.
- **Emerging Issues**
These relate to either technological issues which, until recently, appeared to be without possible application to Malta or to geopolitical issues which are emerging due to regional or bilateral issues.

Any comprehensive Coastal Strategy or Action Plan will eventually also have to give consideration to these issues.

Cultural Resources

Cultural resources legal protection has been effective in controlling the types and level of activities permissible within Scheduled Areas (under the DPA, 1992). Similar protection of other areas, particularly within the marine environment is necessary, following the compilation of a detailed inventory. The cultural heritage along the coastal zone, including that found underwater, has to be safeguarded within a framework that acknowledges the presence of other legitimate coastal activities and uses. Any coastal uses present in the vicinity of such remains have to be regulated so as to preserve such structures as well as their contextual landscape.

This would also have to apply for rehabilitation projects of derelict waterfronts where the maritime activities that characterised the area need to be incorporated within the new projects in order to retain the vitality of the local heritage.

Tourism

Tourism as a major spatial stakeholder in coastal related activities should be directly addressed in future projects. Issues concerning formal and informal privatisation of the stretches of coastline, especially beaches, may be also addressed in future projects. Other issues concerning tourism that need to be addressed by a coastal strategy are directed primarily to safeguard popular tourist areas, including dive sites, from incompatible uses. Measures to protect existing sandy beaches and low-lying rocky shorelines within popular bathing areas from development are also necessary.

The provision for and protection of access facilities within the coast is another issue which has to be provided in recreational/touristic areas, giving due consideration of other legitimate coastal uses to avoid unnecessary negative impacts.

Changes in recreational and use patterns

Malta is a small island with only 2% of the entire coastline constituting sandy beaches. With the increase in tourist influx and subsequent over-crowding of popular bathing areas, a shift in time of beach use by the locals has been observed. Many locals are seen utilising the beaches from sunset up to very early morning. This leaves the morning hours essentially for tourists and young teenagers. Night time is essentially reserved for older users and family groups, mainly for barbecues. This is a good example of multiple uses of scarce resources.



Plate IV.1. Large scale tourist development along the coast of Qawra (Vella, 2002)



Plate IV.2. Barbecues at Ghadira Bay (Psaila, 2002)

Fish Farming

The ecological and geomorphologic characteristics of the marine habitat together with the presence of other users render aquaculture particularly difficult to expand inshore. Recent technological advances in the operational aspects of aquaculture seem to indicate that farms can now be relocated further offshore in deeper waters, where their spatially related impacts can be better absorbed

At the geopolitical level, fish farming and aquaculture activities will have to be in line with EU directives. It is quite likely that accession will lead to an expansion of these activities. This could, in part, be driven by increased profit margins, but also by stricter regional and international measures on the conservation of wild fish stocks, which, if the supply of fish proteins in our diet is to be maintained, will encourage fish farming.

The main strategic issues indirectly relating to fisheries are the relocation of the fish markets to suitable sites and the protection of coastal areas used by fishing fleets from other types of development.

Maritime Activities

Maritime activities are also expected to continue and increase. Although, the spatial requirements for these activities need to be safeguarded, the coastal characteristics (natural as well as cultural perspectives), also need to be conserved. If properly managed, these activities, e.g. cruise liner terminals, could integrate well with cultural sites and monuments.

Similar considerations need to be taken with respect to the yachting industry and the development and maintenance of the Cirkewwa and Mgarr harbours. In so doing, other activities such as diving and fishing are not displaced.

Furthermore, the selection of bunkering sites and offshore spoil grounds need to be considered within a much broader context than one based solely on issues of safety to navigation, thereby safeguarding the natural resources.

Quarrying

The main issues relating to mineral extraction are related to the different stages of quarry development and abandonment. The selection of sites for future quarry operations has to given deeper consideration to impacts upon the natural and socio-economic environment. Implementation programs for restoration schemes for both existing and future quarries need to be developed in line with the existing characteristic of the adjacent coastal areas. Thus, the objective of rehabilitating these sites would serve for multiple uses.

Security issues

The coastal areas are effectively (but not legally) the most evident and convenient demarcation of National Territory. Guarding this sovereignty involves operations of physical and electronic surveillance. Both require operational bases and sites. Due to the recent influx of illegal immigrants to the Maltese shores, the coast is all of a sudden no longer secure. Thus, fortifications constructed in medieval and later periods, have been pressed into use to cater for this new function. All these geopolitical elements could increase the demand for coastal resources to cater for this recent need.

Salt Pans

The main concern with salt production is related to lack of adequate protection and the identification of suitable alternative use. Some of these sites have been in operation from the Roman period and many from medieval times. They are also important resting grounds for waders in transit to and from Europe.



Plate IV.3. Salt pans (Vella, 2002)

Desalination (Reverse Osmosis) plants

Reverse osmosis wellheads have a long association with coastal areas. Established well fields are an integral part of the local scene and many of them have (unknowingly) helped to conserve valuable fragments of coastal habitat from encroaching informal urbanisation and other activities such as trapping. On the other hand, these developments have led to the modification of soils, loss of natural vegetation, destruction and smothering of garigue communities and disturbance of sensitive wildlife.

On the marine side, the impacts of discharges of brines containing substantial amounts of copper, and chromium are being monitored.

Cables

The main issue is related with safeguarding this economically important inter-island infrastructure from incompatible development. In turn such infrastructure, and its maintenance and or periodic replacement require works such as land and marine side trenching, dredging and placement of moorings. These activities can be very disruptive and damaging to coastal ecosystems.

Oil Exploration

The major issue concerning oil exploration is related to the potential impacts arising from the industry with respect to coastal and marine resources as well as uses. Impacts can arise at the exploration site itself, as well as at the operational base where equipment and material are stockpiled and personnel congregate.

Power generation

There are no plans for new spatial requirement for thermal power plants, particularly in the NW. However, the ever increasing energy demands from consumers will require serious consideration to the introduction of energy saving measures in residential, institutional and tourist accommodation, including hotels. Such policies could include the supply of hot water from solar heaters, the supply of electric energy from photovoltaic conversion, with grid interite, as well as more energy efficient construction methods and designs.

There is a strategic and environmental need in Malta to diversify energy sources. There is also a commitment to reduce greenhouse gases emissions. The erection of wind farms can be one way to generate 'green electricity'. Coastal locations are prime location sites for such farms and in fact existing proposals already exist in high locations. Furthermore, these farms can also be located on floating platforms. Their siting and any resulting impacts of such emergent and innovative development still however need to be studied.

The national commitments required to meet the climate change challenge would make the conversion from presently used liquid fuels to less carbon rich gaseous fuels. It is possible for Malta to 'tap into' the gas pipelines traversing the Mediterranean from the North African coast to Sicily. Another possibility would be to connect to the European distribution network via Sicily. The utilisation of natural gas will also bring about considerable improvements in air quality as well as substantial reductions in emissions of greenhouse gases. There will be a need to provide space and infrastructure, to bring ashore such pipelines and distribute this fuel.

Sewage

Sewage treatment plants are mainly coastal development projects. The provision of suitable locations for these plants needs to ensure that impacts on other uses as well as on the coastal resources are minimised. There is also a need to distribute treated waters in an economic and energy efficient manner. From a strategic point of view this is translated into the prevention of incompatible development from taking place in the vicinity of the proposed locations.

Second class water produced from treatment plants will result in an additional amounts of available water especially for irrigation. There will certainly be a larger proportion of land under permanent irrigation, especially in low lying areas. The expected quality of 2nd class water may be somewhat debatable since the sewage water received may be highly saline however techniques for remediation are available. An additional problem is that farmers in the NW have a severe negative perception towards the practice of irrigation with 2nd class water. They claim that produce is vastly inferior in taste to the produce which is currently cultivated with using water from the aquifers.

Waste

The main issue is the location of new waste transfer, treatment and also disposal sites which are currently located in the coastal zones. These have potential impacts on the coastal resources including the marine environment, arising from potentially inappropriate waste management strategies. Another waste related topic concerns the chronic habit of disposing of wastes, particularly from agricultural activities (including plastic film and materials) within watercourses. This material chokes valleys and eventually finds itself within the coastal areas and into the coast.

Furthermore, the issue of the rehabilitation of valleys previously used as dumping sites, e.g. Wied Fulija and Marsa on a smaller scale, need to be urgently addressed.

Since 90% of the waste reaching Maghtab is inert, the issue of land reclamation should also be addressed. Academically, this is a potentially attractive method of using inert rubble and stone. However due the small size of the Maltese Islands, the intensity of coastal uses and the importance for the conservation of habitat types, there is considerable limitation on the extent of possible land reclamation.

Beach Nourishment and Marina Development

The perception that tourists need to spend time on sandy beaches and that some sandy beaches have regressed due to natural transport of sand has led to beach nourishment as a possible solution to the problem. Many new hotel developments in fact strive to achieve a 'postcard' appearance and seek to have an adjacent sandy beach concession.

Marina development is also connected with increased affluence amongst local residents and the drive to attract to the island a new type of tourist desiring a cruising type of experience. This translates in the development of cruise liner terminals and the development of marinas to enable cruising yachts and super yachts to spend time in Malta.

Roads

Although access to the coastline, particularly in urban areas is needed, land take up from undeveloped low-lying shorelines should be restrained. There seems to be a need for small car-park facilities to be identified along certain coastlines. The policy of road building adjacent to the coastline may also need to be revised since roads could form barriers to the movement of sediments and flora and fauna. Thus, this issue should be adequately addressed.



Plate IV.4a. Roads created along the coast, separating the beach from the hinterland, Ghadira Bay, I/o Mellieha (Anon)



Plate IV.4b. Vehicles parked along roads overlooking cliffs at Dingli (Vella, 2003)

Promenades and Belleveders

The construction of new traditional (and popular) shoreline promenades disturbs coastal dynamics. It is much more profitable to upgrade existing locations, because these serve to attract considerable numbers of people away from environmentally sensitive locations. These promenades therefore serve as a location where people can exercise, interact socially as well as participate in formal and informal recreation. Numerous restaurants are also located along these promenades.

The issue of ecological corridors should also be taken into serious consideration. Ecological corridors ensure the continuity, integrity and ease of the flow of runoff waters, sand and sediments, as well as of flora and fauna to and from the coast and into the hinterland. The construction of impervious barriers (roads and other structures) impedes such a flow.

Landscaping and afforestation projects

Landscaping exercises are normally carried out on hard concrete surfaces. More attention needs to be given to soft landscaping with vegetation and appropriately treated effluent should be used for watering.

Data Collection and Management

There is a lack of available data and accessibility on coastal issues. This can limit the effectiveness of decision-making. Data on the marine environment particularly on physical parameters (such as sediment transport and currents) and resources (both natural and cultural) is scant, with the exception of a number of benthic surveys conducted as part of EIAs and Local Plan formulation. Such data would allow for strategic plans and for effective contingency plans in case of emergencies which would assist decisions in terms of managing oil spills to prevent negative impacts.



Plate IV.5. Ghar Maria caves, typical coastline cliffs and caves located in the NW (Grech, 2000)

IV.1. GENERAL CONCLUSIONS

Until recently, coastal management was perceived as occurring on a sectoral approach. This tradition has somewhat been altered in the early 1990s with the establishment of a number of agencies having broader responsibilities. Inevitably, this has led to overlaps in responsibilities. Consequently, misunderstandings on operational procedures in certain sectors may result in delaying efforts from different entities.

A number of changes have also occurred during the period of the CAMP Malta project. These include the adoption of legislation governing fisheries, the environment and the setting up of the Malta Resources Authority and the Malta Environment and Planning Authority.

There are now around eleven Ministries in the Maltese Islands that are somehow involved in regulating coastal areas and uses, although as yet there is no specific reference in current legislation to the 'coastal zone' or to holistic coastal zone management. A co-ordinating mechanism still needs to be set up though.

Other agencies and departments may also be involved on a lesser degree and on specific issues. The Veterinary Services are involved in aquaculture and whilst the MTA plays an important consultative role with respect to the Tourism Industry. The Ministry for Gozo on the other hand deals with all matters related to Gozo.

In practice, a number of inter-agency/inter-departmental networks and co-operation already exist. CAMP Malta is a testimony to this. The enthusiasm shown by all participants in this CAMP is proof of this co-operation. The areas where such co-operation exists include pollution control, water quality monitoring and enforcement of regulations relating to swimming zones. The most obvious one is the co-ordinated effort towards combating and monitoring pollution, between MEPA, the Civil Protection Department, the Malta Resources Authority, Works Division, the Malta Maritime Authority and the Health Division.

It is becoming increasingly clearly understood (especially seen through the participation of these entities in CAMP Malta) that most activities are inter-related and the benefits of policy co-ordination amongst agencies and departments are being acknowledged. Greater effort is needed to facilitate co-ordination in other sectors to ensure that integrated coastal area management produces environmentally and economically beneficial efficiency.

V. PROPOSED STRATEGIES

This final integrated document started with the identification of problems, followed by an identification of key issues relating to the coastal area. This particular section of the document looks at individual strategies and actions which are meant to address, correct or mitigate these identified problems.

This present section also adopts the same methodology of matrices outlining proposed strategy elements for bringing about the required changes.

The matrices were drawn up by integrating the recommended actions from each thematic activity and were further developed to incorporate necessary administrative and operational structures. The bottom-up approach is again an important element of the matrices since the outcomes of discussions with the respective thematic teams as well as the views of the main stakeholders are well represented.

During the compilation of the matrices, it was also felt that it would be profitable to group the key issues into specific categories. These in fact reflect ICAM categories. Furthermore they may facilitate comprehension by key decision makers and satisfy institutional and administrative requirements. These are also a refinement and an adaptation from traditional ICAM which proved useful in other areas.

V.1. Governance

The term governance refers to those processes through which policies and plans originate. These enable the central and/or local government, and associated agencies and NGOs to address issues related to the sustainable use and management of coastal resources. This process is supported by other elements⁶ in this strategy so as to lead to the production of an efficient set of legal provisions.

V.2. Legal action

Legal action follows from the above process. It refers to the drafting of the verbalised 'political' concepts and includes such technical aspects as are deemed fit and relevant, together with the methodology for their enforcement and the sanctions to be made in the event that they are infringed.

V.3. Capacity building

This refers to the human, material and financial resources (including costs recovery), necessary to put into effect the expressed wishes of the policy maker/legislator. This would also include a component designed to assist, advise and promote the sustainable use of the coastal resources amongst all coastal users.

V.4. Knowledge and information

This involves the collection, assessment, analyses and quality control of data which will be of use to policy makers and coastal users. Its main use will be to influence policy formulation and amendment and to verify the success or otherwise of this policy and the degree of sustainability achieved. An important component of this category includes mechanisms for the free dissemination of information and the promotion of information exchange related to activities concerning coastal issues.

⁶ The creation of CRAB and the identification of priority projects for implementation which may also need legal support.

V.5. Economic instruments

Sustainable management of the coast also requires adequate economic resources in order to ensure its feasibility.

V.6. Technological innovations

This class of actions include new techniques, tools and methodologies which promote and ensure sustainable coastal management.

V.7. Protection of coastal resources

The protection of coastal resources refers to actions aimed at the conservation and enhancement of coastal resources. These projects are guided by the same principles which provided the main driving force of the entire CAMP project.

BOX VIII

How to use the matrices

These following matrices are in no way exhaustive and as pointed out several times elsewhere within this document, are only intended to demonstrate in a concrete manner possible tools for policy makers and land use planners.

These matrices are in fact meant to provide enough information so that they may be taken up by the concerned entities, for incorporation into their business plans. Each individual reader should elicit the specific actions his/her organization can take up.

The value of the matrices lies in the fact that stakeholders can see that many of their identified actions are of interest to other stakeholders. Thus the advantage offered by these matrices is that such actions are not seen in isolation but in an integrated manner.

The matrices further suggest bodies which can potentially take up a role as lead agencies for specific areas of the strategy. They also give an indication of other bodies which may have an overlapping (perhaps conflicting) or complimentary (acting in synergy) interest in the matter.

It is stressed that effective public participation is crucial for Integrated Coastal Area Management. This has been amply demonstrated during the workings of the thematic groups as well as in this document. The identification of actual and potential stakeholders is therefore a necessary process which should prove to be of great value.

The priority aims and actions to be implemented are those originating from the key issues of the thematic activities. In these matrices, all the priority aims and actions identified are listed. These were already somewhat prioritized during the previous exercise.

The matrices also give tentative ideas on the time frames and duration for the implementation of the projects as well as an estimate of cost and possible funding sources.

Moreover, the criteria for feasibility of implementation was adapted from the CAMP Operational Guidelines and incorporates costs, the role of actors, the level of implementation, i.e. national, local, pilot area level and implementability (i.e. whether it requires a low, or a high intensity effort in the preparatory phase). However, feasibility of addressing the problem was also taken into account. Feasibility also incorporates the element of magnitude of change the process involves.

V.1.1. GOVERNANCE

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Setting up of Coastal Resources Authority Board	Designate CRAB as a Centre of expertise for ICAM	1. NCSD 2. MEPA 3. Ministry for the Environment.	- Central government - Local Councils - Co-operatives - Tourism sector - MMA - NGOs	Immediate to ongoing	Coastal areas of the Maltese Islands	Low cost MEPA	High
2. Publish a guide to "Good Practice in Integrated Coastal Area Management for Malta"	Identify author/s Write ToRs	MEPA	All coastal users Scientific community Interested persons	Immediate	Coastal areas of Maltese Islands	Low Cost MEPA	High

V.1.2. LEGAL ACTION

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Ensure greater security in land tenure & promote land stewardship	i. communicate to landowners and farmers their legal contractual responsibilities regarding leases and third party liability incurred from breached rubble walls	1. Lands Department 2. Department of Agriculture 3. ALE	- Farmers - Farmers Co-operatives - Local Councils - Land owners	Short to long-term	Agricultural fields	Low Ministry of Agriculture and Fisheries	Medium
2. Control illegal claims to littoral zone e.g. squatter recreational settlement; boathouses, etc.	i. eviction and clearance of illegal structures ii. ensure free and unhindered access to the foreshore by the general public iii. regular monitoring	1. MEPA	- NGOs - Land owners	Short to long term	Coastal zone	High MEPA Lands Department	Low to moderate
3. Strengthen legislation and enforcement that prevents soil from being buried under new construction	i. create an effective soil storage depot and distribution facility ii. monitoring	1. Department of Agriculture 2. MEPA 3. Works Division (MRI) 4. ALE	- NGOs - Land owners - Farmers - Farmers' Co-operatives - Local councils	Short to long term	Agricultural fields	Medium to high Ministry of Agriculture and Fisheries	Medium

V.1.3. CAPACITY BUILDING

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Enhance and increase the skill of dry rubble wall building amongst the agricultural sector	i. Support existing training courses aimed at teaching dry rubble wall construction. ii. Gear such courses at retaining rubble walls which support terraces rather than cosmetic road verge walls.	1. Department of Agriculture 2. Education Department 3. MCAST	<ul style="list-style-type: none"> - Farmers - Farmers' Co-operatives - Local Councils - NGOs 	Short to long-term	Agricultural areas	Medium to high Department of Agriculture. EU funds (?)	High
2. Promote rewards for best practice, enhance marketing of awards within tourism sector. 3. Provide adequate training for sound environmental Management. 4. Initiate regular environmental audits and other related environment conscious initiatives	i. Develop eco-label and certification schemes within the tourism sector	1. Malta Tourism Authority 2. Ministry for Tourism	<ul style="list-style-type: none"> - MHRA - Tour Operators - ITS - tourists and other hotel users - NGO's - Independent environmental consultants. - auditing firms. 	Immediate to on-going	Tourist accommodation facilities and amenities	Medium to high for non complying premises, low for others MTA	High

V.1.4. KNOWLEDGE & INFORMATION

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Procurement of adequate information regarding human activities within proposed MCA sites	i. conduct carrying capacity studies for beach users within MCAs ii. conduct spatial and temporal surveys about specific sets of recreational activity within proposed MCAs iii. establish baseline data sets regarding human activity within the proposed sites	MEPA in conjunction with NSO for Quality Assurance	<ul style="list-style-type: none"> - Malta Tourism Authority - MMA - NGOs - Local Councils - Coastal Users 	Immediate to on-going	Proposed MCA sites	Moderate Funding from MEPA/MTA/MMA	Moderate
2. Promote a deeper understanding of the key biogeographical processes within the coastal zone	i. embark on a sustained education campaign for the locals and tourists. ii. implement a monitoring programme iii. create a well-publicised public participation programme which includes formal as well as informal meetings with stakeholders and peripheral users	1. Department of Agriculture 2. MTA 3. Education Department 4. MCAST 5. MEPA 6. NGOs	<ul style="list-style-type: none"> - Farmers - Farmers' Co-operatives - Local Councils - Fishermen - Fisheries Co-operatives - Local Councils - Divers & dive schools 	Medium to long-term	Potential MCA sites	Medium to high	Medium

3. Creation of a reliable central database using standard data sets which is accessible to the general public	i. setting up of a reliable central database on environment issues ii. setting up of a structure which ensures accessibility of data to the public at reasonable costs	1. NSO	<ul style="list-style-type: none"> - Local Councils - NGOs - Academic and scientific professionals - Interested parties 	Short to long-term	Maltese Islands	Low NSO	High
4. Provision of updated information to tourists	i. strengthening of efforts to promote more environmentally sensitive tourism ii. promote eco-tourism	1. MTA 2. NGOs 3. MEPA	<ul style="list-style-type: none"> - Tourists 	Immediate to on-going	Maltese Islands	Medium to high MTA	Moderate to high

V.1.5. ECONOMIC INSTRUMENTS

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Provide economic incentives for storage of surface water runoff and constructions that permit aquifer recharge	<ul style="list-style-type: none"> i. construction of storm water reservoirs needs to be addressed during road planning and culvert design ii. partial responsibility for aquifer recharge shifted to agricultural sector - uses increasingly higher proportions of aquifer reserves iii. studies to explore the efficiency of combining such measures with soil conservation measures iv. ensure greater efficiency in irrigation practices v. increase surface and underground storm water storage facilities 	<ul style="list-style-type: none"> 1. Department of Agriculture 2. Works Division 3. MRA 4. WSC 	<ul style="list-style-type: none"> - NGOs - Local councils - Farmers' Co-operatives - MEPA - Land owners - WSC - Private contractors 	Immediate to long-term	Maltese Islands	Medium to high MRA Department of Agriculture WSC	Moderate
2. Meeting the increased demand of good quality water for domestic use	<ul style="list-style-type: none"> i. create a price structure that better reflects water costs ii. reward & subsidise water conservation measures, e.g. construction of cisterns iii. invest in technology that permits sustainable water recycling systems 	<ul style="list-style-type: none"> 1. MRA 2. Department of Agriculture 	<ul style="list-style-type: none"> - NGOs - Local councils - Farmers' Co-operatives - Land owners - WSC 	Medium	Maltese Islands	Medium WSC MRA	Moderate

3. Prevent further fragmentation of field units	<p>i. enforce legal and economic provisions that discourage fragmentation</p> <p>ii. promotion of economic incentives to ensure the survival of viable farms and even consolidation of existing fragments</p>	<p>1. Department of Agriculture</p> <p>2. MEPA</p> <p>3. ALE</p>	<ul style="list-style-type: none"> - NGOs - Land owners - Farmers - Farmers' Co-operatives - Local councils 	Medium to long term	Agricultural units	Low	Moderate to low
4. Control recreational activity that leads to soil erosion	<p>i. enforce and strengthen current legislation regarding rubble-wall protection and off-road activity</p> <p>ii. monitor and control spread of trapping sites</p> <p>iii. enforce legal provisions regarding prohibition of trapping sites on state-owned land</p>	<p>1. MEPA</p> <p>2. ALE</p> <p>3. Department of Agriculture</p>	<ul style="list-style-type: none"> - NGOs - Land owners - Farmers - Farmers' Co-operatives - Local councils - Hunters & trappers 	Long term	Rural areas	Low	High
5. Ensuring integrated water resource management	<p>i. resolve issues related to water ownership and use</p> <p>ii. assignment of specific ownership rights and responsibilities to concerned departments</p>	<p>1. MRA</p> <p>2. WSC</p> <p>3. MRI</p> <p>4. MEPA</p>	<ul style="list-style-type: none"> - NGOs - Land owners - Local councils - Farmers - Quarry owners 	Long term	Watercourses, and rural areas	Medium	High
6. Safeguarding biodiversity	<p>i. provide legal protection</p> <p>ii. ensure adequate enforcement</p> <p>iii. provide environmental management and constituency building</p>	<p>1. MEPA</p> <p>2. ALE</p>	<ul style="list-style-type: none"> - NGOs - Local councils - Public in general - Beach users 	Short to long term	Maltese Islands	Medium	Medium

V.1.6. PROTECTION OF NATURAL RESOURCES

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Maintenance and conservation of watercourses	i. issue a tender for ecologically sensitive cleaning of valleys ii. train contractors and/or public workers in selective watercourse cleaning iii. provide effective supervision during clearing operations	1. MRI 2. MEPA 3. MRA 4. Department of Agriculture 5. NGOs	- Farmers - Conservationists - NGOs - Local Councils	Immediate to long term	Watercourses	Medium to high costs MEPA Ministry for Agriculture & Fisheries	Very high
2. Repair and maintain rubble walls	i. immediate repairs to areas which are most severely affected (Erosion Risk Map) ii. introduce financial and other aid packages to help farmers to rebuild rubble walls. iii. Extend study to rest of Malta and Gozo	1. Department of Agriculture 2. MEPA 3. MRA 4. MRI 5. NGOs	- Farmers - Farmers' Co-operatives - Land owners - NGOs - Local Councils	Immediate to long term	Agricultural units	Medium to high costs MEPA Ministry for Agriculture & Fisheries	Very high
3. Decrease the threat of terrestrial and marine pollution	i. implement effective management plan ii. control pollutants that contaminate aquifers iii. apply Blue Flag management standards v. management of storm water vi. construction of sewage treatment plants	1. MEPA 2. MRI 3. Ministry for Agriculture & Fisheries	- NGOs - Local Councils - Malta Maritime Authority - Malta Tourism Authority - Fisheries' Co-operatives - MHRA	Short to long term	Maltese Islands	Medium to high MTA MRI	High

4. Safeguard biodiversity	i. provide environmental management and constituency building ii. designation of specific areas requiring protection, e.g. zones of aquifer recharge, potential MCA locations iii. provide co-ordinated concerted efforts by the relevant authorities to satisfy the tourism and health sectors	1. MEPA 2. ALE	- NGOs - Local councils - Public in general - Users	Short to long term	Maltese Islands	Medium MEPA	Medium
5. Activate an integrated management plan for a network of MCA	i. draft strategic plan for national system of MCAs ii. ensure that EIAs for coastal development address cost benefit analyses and contingency valuation in ToRs	1. MEPA	- NGOs - Local councils - Public in general/users - Fishermen - Fisheries' Co-operatives - Divers and diving schools/clubs	Short to long term	Potential MCA sites	Medium MEPA	Medium
6. Explore and invest in water-efficient irrigation systems	i. encourage drip irrigation, mulching and the planting of drought resistant crops. ii. a drought mitigation & management plan to be drafted immediately iii. the use of 2 nd class water, should be promoted for irrigation	1. Department of Agriculture 2. UNCCD National Action Body	- NGOs - Local councils - Public in general/users - Farmers & Co-operatives - MEPA - Land owners - WSC - MRA	Immediate to long-term	Rural areas	Low to medium MEPA Department of Agriculture	Very high
7. Conserve and protect the cultural and historical heritage of the Maltese Islands	i. more responsive agency to Maltese heritage ii. establishment of a National Heritage Inventory as baseline	1. Heritage Malta (Museums Department)	- Malta Tourism Authority - MEPA - tourists	Immediate to long-term	Cultural sites	Moderate to high Museums Directorate	Moderate

V.1.7. TECHNOLOGICAL INNOVATIONS

OBJECTIVES	ACTIONS TO IMPLEMENT	RESPONSIBLE AUTHORITY	POTENTIAL STAKEHOLDERS	TIME FRAME	GEOGRAPHICAL EXTENT	ESTIMATED COSTS & POSSIBLE SOURCES OF FUNDING	FEASIBILITY
1. Identification of alternative sources of water for secondary uses	<p>i. improve and increase efficiency of sewage treatment plants and market second class water</p> <p>ii. provide for efficient management and utilisation of storm water</p>	1. MRA	<ul style="list-style-type: none"> - University of Malta - MCAST - Department of Agriculture - Local councils - WSC 	Immediate to on-going	Maltese Islands	<p>Medium to high</p> <p>MRA WSC</p>	High
2. Promote agro-tourism aimed at specific agricultural produce, e.g. viticulture, olive production	<p>i. sensitisation of Department of Agriculture and other concerned parties towards benefits of this activity</p> <p>ii. encourage viticulture and olive production</p>	1. Department of Agriculture	<ul style="list-style-type: none"> - University of Malta - MCAST - Institute/College of Agriculture - Local councils - MTA 	Immediate to on-going	Rural areas	<p>Low to medium</p> <p>MTA Department of Agriculture</p>	High
3. Explore and invest in water-efficient irrigation systems	<p>i. encourage drip irrigation, mulching and the planting of drought resistant crops.</p> <p>ii. a drought mitigation and management plan needs to be drafted immediately</p> <p>iii. the use of second class water, recovered from sewage, should be promoted for irrigation</p>	<p>1. Department of Agriculture</p> <p>2. UNCCD National Action Body</p>	<ul style="list-style-type: none"> - NGOs - Local councils - Public in general/users - Farmers - Farmers' Co-operatives - MEPA - Land owners - WSC - MRA 	Immediate to long-term	Rural areas	<p>Low to medium</p> <p>Department of Agriculture MRA</p>	Very high

VI. PRIORITISATION OF POST PROJECT ACTIVITIES

Several post project activities have been identified as priority activities to be implemented. Prioritisation followed a natural pragmatic approach – a project that is of immediate time frame, is highly feasible to implement and that requires low to moderate costs.



Plate VI.1. Coastal cliffs are popular recreational places especially during Winter (Vella, 2003)

Title	SETTING UP OF A COASTAL RESOURCES ADVISORY BOARD (CRAB)
Geographical extent	Coastal zone (Maltese Islands)
Lead agency	MEPA
Aims	To establish an advisory committee for issues related to the coastal zone
Objectives	To advise NCSD and MEPA on coastal issues To disseminate information of ICAM
Benefits	Integrated and sustainable management of the coastal zone Co-operation and co-ordination between concerned entities Effective public participation Dissemination of knowledge
Project duration	On-going
Implementation costs	Lm 2,000 (estimate)

Title	IMPROVING THE STATUS OF BEACHES IN NORTHWEST
Geographical extent	Northwest, Malta
Lead agency	Subregional Centre on Tourism, Environment and Health
Aims	To draw up recommendations to upgrade the state of beaches in the NW to Blue Flag standards as minimum.
Objectives	Identification of potential Blue Flag beaches in the NW Draw up recommendations for the upgrading of these beaches to Blue flag criteria Draw up recommendations for beach management of non Blue Flag beaches Draw up policy of action for setting up beach management committees Serve as a demonstration model for management of beaches in Malta and in the Mediterranean, especially in islands.
Benefits	Effective beach management and maintenance Increased regular and continuous monitoring of the status of beaches Increased quality of beach experience
Project duration	18months
Implementation costs	US\$ 35, 000

Title	WATERCOURSE MAINTENANCE AND CONSERVATION
Geographical extent	Watercourses/valleys
Lead agency	MEPA/Ministry for Resources & Infrastructure
Aims	To protect the unique ecosystem of valleys thus ensuring adequate drainage
Objectives	<p>Draw up a management plan/Guidelines for valley maintenance</p> <p>Rehabilitate valleys according to management plan/Guidelines</p> <p>Collect & dispose of debris & re-use sediment trapped behind check dams</p> <p>Initiate a training programme for good maintenance practices</p>
Benefits	<p>Reduced risk of flooding in agricultural fields contiguous to watercourse</p> <p>Enhanced water infiltration and aquifer recharge</p> <p>Enhanced potential of nature / country walks</p> <p>Watercourse habitat protection</p>
Project duration	Ongoing
Implementation costs	Lm20,000 per valley system (rough estimate)

Title	DRAFTING A DROUGHT MANAGEMENT PLAN
Geographical extent	Rural areas (Maltese Islands)
Lead agency	Ministry for Agriculture & Fisheries
Aims	To draw up a management plan for drought mitigation and erosion control
Objectives	<p>Identification and setting of a multidisciplinary committee (NAB)</p> <p>Identification of priority areas with a high erosion risk</p> <p>Identification of socio-economic aspects</p> <p>Draw up of recommendations for remedial, preventive and curative measures</p> <p>Draw up policy of action</p>
Benefits	<p>Efficient use of water</p> <p>Inputs provided to the Rural Strategy development plan</p> <p>Enhanced agricultural productivity</p> <p>Increased agro-tourism</p> <p>Satisfy obligations to the UN Convention to combat Desertification</p>
Project duration	24 months
Implementation costs	\$7,000

Title	PRESERVATION OF TERRACES AND MAINTENANCE OF RETAINING RUBBLE WALLS
Geographical extent	Maltese Islands
Lead agency	Ministry for Agriculture & Fisheries/MEPA
Aims	To protect soil and the rural landscape
Objectives	Completion of Erosion risk map for SE Malta and Gozo. Repair of breaches in rubble walls Catalogue & disseminate mitigation measures taken by farmers to reduce soil loss at field level Initiate a sustained education campaign
Benefits	Enhance soil and water availability leading to retention of productivity Enhance general cost effectiveness of agricultural activities Decrease need of intensive cleaning in watercourses Minimise sediment deposition in the marine environment
Project duration	Ongoing
Implementation costs	Lm20,000 per Local Council (rough estimate)

Title	DEVELOPMENT OF A PILOT MARINE PROTECTED AREA
Geographical extent	Rdum Majjesa to Ras ir-Raheb, NW Malta
Lead agency	MEPA and RAC/SPA
Aims	To declare proposed site as a marine conservation area
Objectives	Draw up management plan Implement necessary protection & conservation measures
Benefits	Effective public participation Continuous monitoring of the sites Protected and conserved the marine ecosystems Minimised conflict between users within the sites Demonstration plan for a system of marine conservation areas in the Maltese Islands
Project duration	2002 - 2004
Implementation costs	Partly funded through EU SMAP project

Title	DRAFTING AND IMPLEMENTING A MANAGEMENT PLAN FOR A SYSTEM OF MCAs
Geographical extent	Marine protection sites as proposed in the Structure Plan (PA, 1992)
Lead agency	MEPA
Aims	To declare a system of marine conservation areas around the Maltese Islands
Objectives	<p>Draw up a management plan/s for a network of marine protection/conservation areas</p> <p>Conduction of carrying capacity surveys for beach users</p> <p>Conduction of spatial and temporal surveys for specific sets of recreational activity within the MCAs</p> <p>Initiate a sustained education campaign</p>
Benefits	<p>Effective public participation</p> <p>Continuous monitoring of the sites</p> <p>Protect and conserve the marine ecosystems</p> <p>Minimised conflict between users within the sites</p>
Project duration	2002 - 2012
Implementation costs	Lm10,000 per year

Title	COASTAL AREA MANAGEMENT PROGRAMME FOR THE SOUTHERN PART OF MALTA
Geographical extent	South of Malta (as delineated by the Local Plans)
Lead agency	MEPA
Aims	To implement integrated and sustainable coastal area management for the Maltese Islands
Objectives	<p>Draw up management plans for the South of Malta based on ICAM methodology</p> <p>Completion of maps prepared for the NW</p>
Benefits	<p>Holistic appraisal of coastal issues for Malta</p> <p>Transfer of knowledge and information acquired</p> <p>Application of ICAM techniques</p>
Project duration	48 months
Implementation costs	Lm30,000

Title	GUIDELINES FOR ICAM IN THE MALTESE ISLANDS
Geographical extent	Coastal areas of the Maltese Islands
Lead agency	MEPA
Aims	To ensure effective and sustained ICAM in Malta
Objectives	<p>Preparation of transparent guidance manual for agencies, institutions and stakeholders regarding application of sustainable management practices for the coastal area based on ICAM</p> <p>Compilation and publication of Guidelines for best practice</p> <p>Ensure public & stakeholder participation</p> <p>Ensure integration of issues</p>
Benefits	<p>Effective public participation</p> <p>Minimised conflict between users within the sites</p>
Project duration	18 months
Implementation costs	Lm7,000

Title	COASTAL AREA MANAGEMENT PROGRAMME FOR GOZO & COMINO
Geographical extent	Gozo and Comino
Lead agency	MEPA and Ministry for Gozo
Aims	To implement integrated and sustainable coastal area management for the Maltese Islands
Objectives	<p>Draw up management plans for the South of Malta based on ICAM methodology</p> <p>Completion of maps prepared for the NW</p>
Benefits	<p>Holistic appraisal of coastal issues for Malta</p> <p>Transfer of knowledge and information acquired</p> <p>Application of ICAM techniques</p>
Project duration	24 months
Implementation costs	Lm20,000

VII. FUNDING OPTIONS

This funding strategy is divided into recommendations for the Post Project Activities (PPAs) in the immediate, short- medium and long term, and follows an analysis of the range and type of actions being proposed in the Action Plan. In order to reduce the number of funding sources to be pursued it is recommended that actions are grouped in to a limited number of integrated themed projects from which a number of key bids have been identified.

In addition, a number of parallel activities are recommended to extend the potential range and type of future funding sources.

The importance of action in the very short term that maintains the core expertise of the CAMP, maintains momentum, achieves visible results and builds long-term capacity is emphasised.

Analysis of the key actions defined in the report illustrates a wide and complex range of funding implications for government institutions, organisations and individuals to ensure their implementation. Broadly however, they can be categorised into 3 time scales:

1. Short – term actions, post project activities in the immediate months following the CAMP to maintain the momentum of CAMP Malta and build longer term capacity.
2. Short- medium term interventions to tackle urgent problems or promote new and innovate actions on a project basis, broadly within a 2 – 5 year time span. These activities are the most suited to the project grant approach from either domestic or international sources, or a combination of both.
3. Long-term interventions to change practices by institutions or individuals, build capacity or improve infrastructure. The report identifies that ICAM cannot rely solely on legal and regulatory actions; long term financial or economic incentives and durable funding mechanisms are essential keys to success. These may require new funding or the redirection of existing funding sources.

Malta's eligibility for assistance from external environmental funds is relatively limited. However, the key areas have been evaluated below.

VII.1. SHORT – TERM FUNDING

Within the immediate post project period of 6 months to one year the following actions are considered essential and of the highest priority to ensuring Malta's ability to develop ICAM in the long-term and to realise its national and international potential in this field.

VII.1.1. Maintain ICAM Capacity

The immediate priority must be to maintain the considerable core of expertise, the international centre of excellence and the partnerships developed at a national and local scale within CAMP Malta. Thus it is recommended that immediate support for core activities to retain expertise and develop post project programmes is provided.

VII.1.2. Build Partnerships

The 6 months following completion of the CAMP Malta are critical to developing the future partnerships. Sources of match funding for the co-financing of bi- and multi-lateral national and trans-national partnerships is essential.

Earlier this year the EU approved a Recommendation (2002/413/EC) concerning the implementation of Integrated Coastal Zone Management in Europe. The Recommendation required all Member States to produce a National Strategy for the management of their coasts by February 2006. The preparation of CAMP gives Malta a unique advantage and opportunity to demonstrate competence in this field; this in turn could lead to further funding opportunities. Malta should maintain its presence in activities relating to the implementation of the EU's ICZM Recommendation and develop links for potential future partnerships.

Malta is not currently a partner in METAP (Mediterranean Environmental Technical Assistance Program) supported by the European Commission, the European Investment Bank (EIB), the United Nations Development Program (UNDP) and the World Bank to help Mediterranean countries cope with and reduce the effects of environmental degradation. This is particularly unfortunate as the three priority themes of METAP; Capacity Building, Arresting and Controlling Emerging Pollution, and Integrated Water and Coastal Resources Management are of direct relevance to this project. Apart from direct grant support, METAP helps generate further investment from the World Bank or European Investment Bank.

VII.1.3. Establish Coastal Micro-Finance Scheme

Short-term, high profile "demonstration" activities are vitally important to maintaining momentum and rising local awareness of the process. Unfortunately, by their nature trans-national programmes have a lengthy application process while participatory coastal planning processes deserve early attention in the programme. Even modest micro-financing schemes, whereby small environment projects can be implemented quickly and effectively, have been shown to have disproportionate benefits in engaging the interest and support of the public. In addition they have been shown to be effective in leveraging additional funding from other sources (e.g. Coastcare Australia).

VII.1.4. Integrated "Project Clusters"

In developing future grant bids it is recommended that the Action Plan be subject to a further iteration in order to identify integrated "project clusters" around agreed themes and relevant to targeted grant programmes. This will not only aid an integrated approach, but will help maximise grant support. Potential project clusters are identified in the project table later in this report.

VII.2. SHORT- MEDIUM TERM FUNDING

There are two main potential external funding routes for short- medium term interventions:

VII.2.1. Mediterranean Action Plan

It is firmly recommended that the Action Plan be used as a basis for further MAP support for a CAMP Malta Post Project Activities. In particular, to consolidate the success of the existing project and build capacity to provide a sustainable basis for ICAM in Malta in the long term. The experience gained by Malta in the development of CAMP places it in a strong position to lead future regional co-operations should these be developed by MAP.

It is therefore recommended that a 5-year programme of Post project Activities be agreed with MAP. Particular attention should be paid to the potential of Malta to lead Regional Partnerships in future CAMP Programmes.

VII.2.2. Future CAMP Multilateral Regional Collaborations

In any future re-orientation of the MAP ICAM Programme towards regional co-operation on key themes Malta should offer the expertise gained from the CAMP exercise to work with, and where appropriate lead such partnerships. The development of MCAs has been proposed for such a co-operation. Malta would have a particularly valuable role to play in this as a potential “bridge” between the development of Marine Natura 2000 Sites within the EU and non-EU marine MCA sites. Thus, multilateral collaboration as a Post Project Activity with priority to the development of a Regional Network of MCAs could be included.

VII.2.3. European Union

On 19th December 2001, a Framework Agreement was signed with Malta, which enables it to participate as a candidate country in Community Programmes open to candidate countries of Central and Eastern Europe. Participation in individual programmes is to be agreed between Malta and the European Commission.

- EU LIFE Programme, LIFE–Third Countries

The key instrument for the implementation of ICAM is the LIFE financial instrument supporting Community environmental policy. Since 1996, Malta has actively participated in LIFE – Third Countries, an action reserved for third countries bordering the Mediterranean and the Baltic Sea other than the Central and Eastern European countries. LIFE is currently seen as the vehicle for delivering priorities of MAP and SMAP programmes (SMAP - Short and Medium-term Priority Environmental Action Programme for the protection of the Mediterranean environment). Calls are issued on an annual basis.

- Pre-Accession Partnership

Implementation of ICAM may also be eligible for financial and technical assistance under the Pre-Accession Partnership, either through grants for technical assistance or for twinning, particularly in the area of capacity building.

Pre-Accession support be sought for the implementation of key areas of European legislation of relevance to ICAM namely; the Habitats Directive in the identification and designation of Marine and coastal Natura 2000 sites, the Water Framework, Nitrates and Bathing Water Directives.

- 6th Framework RT&D

Malta may also be eligible for participation in other Community Programmes. Of particular interest to ICAM is the 6th Framework RT&D programme. The EU's Framework Programme for Research and Technological Development is a major tool to support the creation of the European Research Area (ERA). This could assist a number of the research activities in the Action Plan. ICZM is clearly identified as a research priority in the Programme.

Two types of activity in 6th Framework in particular are of interest:

1. The networks of excellence (NoE's) instrument is designed to strengthen excellence on a particular research topic by networking together the critical mass of resources and expertise needed to provide European leadership and to be a world force on that topic.
2. The integrated projects (IP's) instrument is designed to generate the knowledge required to implement the priority thematic areas. It will do that by integrating the critical mass of activities and resources needed to achieve ambitious, clearly defined scientific and technological objectives of a European dimension.

Both are intended for the establishment of collaborative, transnational research partnerships.

6th Framework support is also available for individual, country-based projects, but their applicability to ICAM currently appears limited. This should be kept under review.

Although calls have not been issued for the Programme at the time of writing, the Commission has called for expressions of interest (EoIs) to test demand. Interest in ICZM has been considerable and Malta was included in an EoI submitted by a potential network "ALIGN" ICZM Research network led by the MARE (Centre for Maritime Research), Amsterdam. Co-operation in the 6th Framework on ICZM be promoted through the Malta Council for Science and Technology.



Fig. VII.1. The Northwest of Malta is endowed with area of high aesthetic value (Vella, 2000)

VII.2.4. Other EU Programmes

There are a considerable number and range of relevant projects under development at any given time throughout the EU for a range of programmes which require partners and which would not require Malta to take the lead role. Participation in such projects can provide a relatively “quick fix” to specific problems whilst raising profile with the Commission and other regions.

- **INTERREG III**

Of specific interest to ICAM is Interreg III Community initiative which aims to stimulate interregional co-operation in the European Union and which runs from 2002 - 2008. Interreg is financed under the European Regional Development Fund (ERDF) to promote cooperation across national and regional borders, in order to strengthen economic and social cohesion and the 'balanced development' of the EU's territory. Interreg is divided into 3 strands a, b & c of which only b & c are potentially relevant to Malta.

- **INTERREG Strand IIIb**

Interreg Strand IIIb promotes trans-national cooperation between national, regional and local authorities to promote better integration within the Union through the formation of large groups of European regions. It also promotes better integration between the 15 Member States and candidate countries and other neighbouring countries.

Within Strand b, particular emphasis is placed on ultra-peripheral and island regions. It also provides opportunities for promoting co-operation between groups of regions facing common problems, such as mountainous areas.

For the purposes of Interreg IIIb, Europe is divided up into 11 regional groups. Malta is linked to the ARCHIMED (Greece, Sicily, Calabria, Basilicata, Puglia) Interreg regional grouping. The protection, safeguarding and exploitation of the cultural and environmental resources is a general Interreg priority. Environmental issues such as desertification and pollution, the management of both the natural and cultural environment and tourism development are specifically referred to in the draft ARCHIMED programme. Although the ARCHIMED regional programme is not yet fully approved and operational, Interreg may be of particular value in dealing with the actions to promote sustainable economic development such as tourism, or the management of the cultural landscape as a key asset of regional distinctiveness, or in the planning and management of water resources.

Early contact with the ARCHIMED Interreg IIIb Secretariat will therefore establish eligibility as well as identify potential partners and projects.

➤ INTERREG Strand IIIc

Further potential exists in the Interreg IIIc Strand, highlighted by the Commission as a potential vehicle for the development of ICZM on a European scale. The issues of maritime and coastal co-operation, spatial planning, co-operation on insular and ultra-peripheral issues are specifically identified.

IIIc promotes inter-regional cooperation to improve the effectiveness of regional development policies and instruments through large-scale information exchange and sharing of experience (networks) in a structured way. For the purpose of IIIc the territory of the EU has been divided into four programme zones: North, East, South and West. Malta would be eligible for co-operation with the South programme zone consisting of Spain and Portugal, southern France, western Italy and Sicily and southern Greece and the islands.

This Programme is currently under development but the guidance identifies three types of actions. Actions 2 & 3 are the most likely areas for the development of ICZM:

Action Type	Partners	Contribution for each operation (Euros)
1. Regional framework operations (RFO) composed of a group of regional authorities or equivalent regional bodies aiming at exchanging experience on methodology and project-based activities.	From at least 3 countries, 2 must be Member States	500,000 – 5,000,000
2. Individual project a co-operation of public authorities or equivalent bodies aiming at exchanging experience on methodology and project-based activities as well as on common implementation of single projects.	From at least 3 countries, 2 must be Member States	200,000 – 1,000,000
3. Networks aimed to link public authorities or equivalent bodies of various regions inside and outside the European Union on project implementation methods and development related to regional policy topics.	From at least 5 countries, 3 must be Member States	200,000 – 1,000,000

Table VII. 1. Interreg IIIc

It is thus recommended that contact be made with the Interreg IIIc [South Joint Technical Secretariat](#) to identify potential partners and projects.

VII.3. BILATERAL CO-OPERATION

The CAMP activities in Malta have much to offer other states currently addressing the management of their coastal areas. Consequently there are opportunities for bilateral co-operation for the mutual exchange of good practice and experience. Malta CAMP offers particular areas of expertise and innovation in the field of Systemic and Prospective Sustainability Analysis and public participation. The instigation of bilateral partnerships on coastal management with other coastal states engaged in ICAM is necessary.

VII.4. PUBLIC/PRIVATE PARTNERSHIPS

Although public/private partnerships are much vaunted in the environment field as a source of funding, experience indicates that they are more often of more symbolic than real value unless they are underpinned by legal or fiscal incentives. Opportunities will no doubt exist to gain private support for projects highlighted in the Action Plan but the priority should be to ensure that the necessary management infrastructure is in place.

VII.5. KEY ACTIONS FOR SPECIFIC, SHORT – MEDIUM TERM FUNDING SUPPORT

The Actions identified in the Matrices have been “clustered” into a limited number of project titles. For each of these “clusters” a lead funding source is identified as set out in the following table.

CAMP Malta Post Project Activities should be seen as the initial priority to establish the central structure from which all other actions and funding bids flow.

KEY ACTION/PROJECT TITLE	FUNDING SOURCE	TIMING
1. Coastal micro-finance scheme – small grant scheme for environmental activities and promotion on the coast	National and sponsorship	LAUNCH 2003
2. CAMP MALTA PPAs – building capacity for sustainable, long term ICAM through CRAB and extend CAMP to remaining coast, Gozo and Comino. Consider also trans-national collaboration with EU trans-national ICZM initiatives through Interreg IIIc	MAP EU Interreg IIIc	Post project activity, evaluation and project initiation 2003. Initiation, formulation and implementation from 2004
3. CAMP MALTA PPA & Regional Collaboration – participation in future regional collaborations on key themes including MCAs	MAP	Post project activity, evaluation and project initiation 2003. Initiation, formulation and implementation from 2004
4. Development and Management of MCAs as potential Natura 2000 sites.	LIFE Third Countries	Identify local and potential trans-national partners and bid to next funding round in 2003
5. Development and Implementation of Integrated Beach Management Plans	LIFE Third Countries	Bid to next funding round in 2003
6. The Sustainable Management of Water Resources on Malta	LIFE Third Countries (in co-operation with UNCCD) or Interreg IIIb/c	Identify potential trans-national partners and bid to next funding round in 2003
7. Valorisation of Cultural Landscapes	Interreg IIIb or IIIc	Identify potential trans-national partners and bid to next funding round in 2003
8. Development of Marine and Coastal Monitoring programme	6 th Framework Integrated Project	Mid 2003, Subject to programme approval
9. Implementation of key EU legislation in the coastal zone	Pre-Accession Partnership	2003 onwards
10. Additional relevant projects led by external partners	LIFE, Interreg, etc.	Identify potential programmes and partners 2003 onwards

Table VII.2. Possible funding sources

VII.6. LONG-TERM FUNDING

Long-term interventions, those which are designed to change practices by institutions or individuals, build capacity or improve infrastructure, are identified in the Action Plan and particularly relate to the management of land and water resources in Malta. Funding is required for such actions where they cannot be achieved by regulatory actions, alone.

Through the ICAM process it is worth raising the possibility of new and innovative funding mechanisms to tackle the problems identified (the use of fiscal instruments such as charges and taxation are outside the remit of this document). Malta CAMP II can be used to further develop long term funding mechanisms such as those set out below.

There is no substitute however for secure, long term funding for the core functions of ICAM at the national level. Worldwide experience bears out the problems resulting from the stop-go, project-based approach to ICAM. The EU ICZM Recommendation referred to earlier calls for all Member States to identify sources of “durable” long term funding along with a thorough stocktaking of administrative functions.

The following are proposed as key areas for further evaluation.

VII.6.1. Agri-Environment

A common issue relating to a wide range of the Key Actions is the achievement of sustainable management of the landscape by farmers and landowners. Any discussion of land management at this time raises the wider issue of Malta’s accession and the EU’s Agricultural Policy. The actions proposed in this CAMP can be seen as an agri-environment programme for which support may be available under SAPARD (Special Accession Programme for Agriculture and Rural Development) which supports the efforts made by the applicant countries to join the Union's Common Agricultural Policy. It includes a wide range of measures including the protection of the environment and technical assistance.

The protection and restoration of rubble walls, encouraging sustainable irrigation and water use practices, aquifer recharge, maintaining biodiversity, communication with farmers and training could be combined into a single agri-environment programme.

The basic principle of the scheme would be a two-tier one in which, at the basic tier, farmers sign up to binding agreements to carry out specified actions or maintain existing features in return for regular, area-based payments. Further payments would be available for specific actions agreed in a conservation management plan. Such schemes have proved popular in marginal farming areas elsewhere in Europe as illustrated below.

Through a targeted and voluntary financial incentive system, these measures could also help support farm viability. Agri-environment scheme can be applied to protect water resources, maintain traditional landscape features and support biodiversity.

Case study: Environmentally Sensitive Areas

There are many examples of agri-environment models around Europe but the Environmentally Sensitive Area (ESA) of West Penwith in Cornwall shows the most similarity with landscape, issues and landholding with Malta.

In this area of southwest England, the ESA scheme offers 10-year agreements to protect and enhance the environment within designated areas. The exposed, treeless coastal landscape is one of the most ancient in Europe with stone walls and monuments dating back over 4,000 years. Landholdings are small and predominantly grazed.

In return for a fixed annual payment, farmers agree to maintain the existing field patterns of stone “hedges” and walls (of a similar construction and size to those on Malta), maintain existing ponds and streams, not to damage or destroy any features of historic interest, along with other measures relating to good agricultural practices, public access and the use of chemicals.

Further payments and grants are available for approved works in a Conservation Plan such as the construction or rebuilding of stone hedges, stiles, wildlife habitats, and restoration of ponds. The success of the scheme introduced in 1987, is evidenced in the near 100% take up rate and the retention of the historic landscape.

www.defra.gov.uk/corporate/regulat/forms/erdp/esa/wpesainfo.pdf



Plate VII.2. Wied iz-Zurrieq, inaccessible to development on steep slopes (foreground), accessible in low lying areas (background) (Role', 2000)

VII.7. ENVIRONMENTAL STEWARDSHIP

The critical importance of the undeveloped coastal landscape is recognized in the CAMP, as are the pressures on it. Planning regulation is well developed in Malta to maintain protection from specific types of development. However other countries have recognized that further measures are required to ensure that such landscapes of outstanding national importance are managed or protected in a sustainable way in the long term. The various options range from the management agreements with existing landowners to outright purchase, in most cases however a dedicated organization is tasked with this function.

Given the vital long-term importance of the coastal landscape to the character, identity and economy of Malta, it is feasible to establish a new body or support an existing organization, to secure the long-term stewardship of the coastal landscape be undertaken.

VII.7.1. Case Study 1

A number of models exist. These include the American "easement" approach by which landowners formally agree to certain permanent restrictions on the property's uses and potential development. The conservation easement is a popular choice because it "keeps land in the family" or in private ownership, while ensuring the property's long-term protection. A not inconsiderable incentive is that easements may greatly reduce a landowner's burden from estate, income and property taxes. Such easements are negotiated and managed by land trusts such as the Maine Coast Heritage Trust or government agencies.



Plate VII.3. Ramlal-Mixqua Bay, forming part of the proposed MCA (Grech, 2000)

Alternatively, the UK has the well known National Trust, a charitable organisation which, as the result of the Enterprise Neptune initiative now protects through ownership or agreement nearly one mile in every five of the national coastline, along with 53,000 hectares of coastal hinterland. The National Trust spends 3 million GBP a year on buying coastal land. Once bought the land becomes inalienable and cannot be resold. The National Trust is funded by membership, grants, income from property and other activities and sponsorship; properties are obtained by purchase, by donation or legacy. *Din l-Art Helwa* is the Malta affiliate of the National Trust.

VII.7.2. Case Study 2

In France, concern over the loss of fine coastal landscape led to the creation in 1975 of a public organisation, the "Conservatoire de l'espace littoral et des rivages lacustres", with the remit of ensuring the definitive protection of outstanding natural areas on the coast, banks of lakes and stretches of water of 1000 hectares or more.

The Conservatoire has three procedures it can use to acquire land: either by private agreement, by pre-emption in coastal areas defined by the departments or, more rarely, by expropriation on grounds of public interest. The great majority of acquisitions today are made by private agreement. Once acquired the land also becomes inalienable. The Conservatoire is empowered to receive all donations and legacies and is also supported by company patronage. In addition, it benefits from donations in lieu of death duties.

The benefit of such a body with a remit to secure coastal land would be to provide a focus for private sector support, particularly from the tourism sector, for popular support from the residents, visitors and the Maltese Diaspora.

The above long-term mechanisms and models are presented in order to stimulate discussion and consideration of durable funding mechanisms for the stewardship of Malta's coastal assets. The case for such durable funding sources is clear, but the precise applicability of any model to the Maltese situation would be complex; it is recommended however that early consideration be given to the development of such mechanisms in order to provide lasting security for the coastal heritage of the Maltese Islands.

VIII. CONCLUSIONS OF PROJECT

- All the activities have shown that the Northwest of Malta should be protected and conserved due to its high agricultural, aesthetic, touristic and economic value.
- The lengthy preparatory phase and short implementation phase of this Project has proven to be successful.
- New tools and techniques of ICAM were introduced and applied during this Project. It was observed that however, the methodologies have to be adapted to the small scale of Malta (e.g. erosion risk mapping, marine benthic surveying).
- Numerous and diverse activities are continuously occurring on the coastal zone. Thus issues and problems should not be taken into consideration on their own but in a holistic approach. This integrative approach was adopted in the CAMP Malta Project and has indeed proven to be effective.
- Effective public participation is possible. During the implementation of the CAMP Malta Project, public and stakeholder participation was carried out continuously and successfully.
- Stakeholders are interested and willing to actively participate in discussions concerning the coastal zone and other related issue. In fact, their input into the CAMP Malta Project was invaluable.
- Sustainability indicators are a useful tool for monitoring.
- The baseline data collected and compiled during this Project needs to be followed up, thus ensuring continuity.
- The emerging issues and gaps are a concern and thus need to be tackled in post-project activities.
- The fact that data was handled by one single source has proven to be very beneficial and ensured data exchange and sharing. Thus a central data base centre is absolutely required.
- Data from other sources should be made more available and not at a too costly price.
- During the Final Presentation Conference, this FIPD was presented and endorsed by the participants.

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ANNEX 1

INDIVIDUAL PROJECT SUBMISSIONS PROPOSED FOR INCLUSION IN CAMP MALTA

A full list of the original individual project activities is being reproduced here. The agency that submitted proposal is also being given.

- Assessing the physical aspects controlling the carrying capacity of coastal embayments – CAMPBAYS
Submitted by Physical Oceanography Unit
- Monitoring of sea surface currents using radar techniques
Submitted by Physical Oceanography Unit
- Coastal zone management programme for Malta making use of the *Posidonia* - a study for land reclamation
Submitted by the Department of Agriculture
- Proposal for a study on the tourism carrying capacity of popular bathing areas in Malta and Gozo
Submitted by the Department of Biology, University of Malta
- Management of a nature reserve – Il-Ballut ta' M'Xlokk
Submitted by Environment Protection Department
- Development of spill response capabilities for the Island of Malta
Submitted by Environment Protection Department.
- Assessment of soil erosion in Malta
Submitted by Environment Protection Department and Department of Agriculture
- Tourism and health
Submitted by WHO Regional Centre of Environment, Health and Tourism
- Marine Conservation Areas
Submitted by Environment Protection Department
- Integrated water resources management
Submitted by Institute of Water Technology, Water Services Corporation
- Coastal zone management
Submitted by Planning Authority

ANNEX 2

Activity 1: SUSTAINABLE COASTAL MANAGEMENT (SCM)

Additional consultations with stakeholders and the general public were held under the work of the co-ordinating functions of CAMP Malta, namely Public Participation Programme and Systemic Sustainability Analysis.

This activity has been running in parallel with other work being carried out by the Planning Authority (PA), namely the North West Local Plan and the Structure Plan review. This activity therefore built upon existing work and consultation already undertaken with key players within the coastal zone.

The objectives of the Sustainable Coastal Management Activity were the following:

- Defining the role of coastal /marine resources for sustainable development of the island,
- Preparing an Integrated Management Plan for the North West area of the island, with particular reference to the Coastal Zone Subject Plan of the area,
- Assisting national authorities in implementing principles of sustainable development and tools and procedures of ICAM into the national planning process, and,
- Introducing and applying, techniques and procedures of the participatory process into the national planning practice.

The SCM activity included a variety of tasks ranging from data collection to training in new skills. The main stages were as follows:

- Preparation of a review of the coast;
- Training on Resource Valuation and Strategic Environmental Assessment;
- Undertaking of a Strategic Environmental Assessment of the Draft North West Local Plan coastal policies;
- Formulation of a Strategic Plan for the North West coast.

The formulation of two documents, Coastal Profile I and Coastal Profile II, which incorporated a review of the resources present within the Maltese coast and the current issues concerning existing coastal uses respectively. Coastal Profile I provided an overview of the main coastal habitats present as well as the current issues affecting the natural resources within the North West coast. Coastal Profile II looked at development trends, legislation as well as national and international policy.

At this stage, data collected from a survey on law and practice carried out for the Structure Plan Review was utilised to address the current issues related to management and administration of the coastal zone. In addition this document also assessed the Draft North West Local Plan by identifying the policies that related to the coastal zone and consequently any issues that were not tackled. A series of land use and sea use maps were plotted and forwarded to the Data Management Activity.

In summary, the Coastal Profiles present the North West of Malta as primarily rural in nature when compared to the rest of the island. The coastal cliffs are dominated by agricultural activities whereas the stretched of low-lying coast have been taken up by tourism and recreation related development. Malta's main bathing areas, including the largest sandy beaches are found along this coastline. Even areas having limited access to the sea have been overexploited for local recreation.

The main coastal habitats have been afforded legal protection against most types of development. Moreover the urban developing zoning scheme in Malta allocates most of the coastline in the NW the designation of Outside Development Zone with some exceptions. The highest demand for development has been from activities and uses that do not necessitate a coastal location and most of the permitted development is along the recreational focal points. This resulted in an increased encroachment of the immediate shoreline with the gradual elimination of open space available to the public for informal recreational use. On the marine side, the main uses are bunkering, aquaculture and boating. The coastal stretches along Qawra point, Cirkewwa, Golden Bay and Ghar Lapsi have all been identified as Marine Conservation Areas within the current Structure Plan.

With respect to management, there are eleven (11) out of fourteen (14) Ministries in the Maltese Islands that are directly involved in regulating coastal areas and uses, yet there is no specific reference in current legislation to the coastal zone. The only document that makes reference to coastal zone management is the Structure Plan, the legally recognised document that regulates development in the Maltese Islands. There is also no reference for policy co-ordination or co-operation between government entities in their policy formulation stages with the exception of the Development Planning Act, 1992.

A set of sustainability indicators was developed in parallel with the SPSA activity. In addition to further training, the SPSA activity provided a forum within which the SCM team could consult with stakeholders. Further public participation was obtained in the exhibition that was set up for the whole Project.

The management objectives proposed by the SCM activity for the North West of Malta can be summarised as being a Strategic Plan, largely influenced by the land-use planning process whereby spatial planning of the coastal zone is translated into geographical units with different characteristics. In recognising the sectoral approach within the Maltese Islands, the SCM activity has gone a step further than traditional land-use planning by focusing on policy integration measures for the coastal zone. To this effect the final activity output was the formulation of a Strategic Plan that incorporated the findings from other CAMP Malta Thematic Activities as well as the strategy adopted within the NWLP.

The SCM activity proposes the establishment of a multidisciplinary team to take responsibility for the implementation of the management plan with representatives from other agencies present on a Committee. Members of the scientific community may have a potential role within the Committee to co-ordinate research requirements. The function of this team would be to oversee the co-ordination required for implementation, through the delegation of responsibilities to other entities.

Other objectives have been recognised as priority areas and relate to specific action for particular issues such as rehabilitation projects, management plan formulation for protected areas and beach management programs. Sub-committees for these priority areas are proposed. They are to be composed from representatives of stakeholders within the area in question, including members of the private sector, the public as well as non-governmental organisations.

The priority areas identified are listed as follows:

- Development of Management Plans for Protected Areas
- Establishment of Marine Conservation Areas and formulation of Management Plans
- Rehabilitation and Improvement of Agriculture
- Development of Rehabilitation Programs for spent quarries and legal dump sites
- Development of Beach Management Programs

The most critical factor for implementation is the availability of financial resources. The SCM activity acknowledged the need for commitment from separate Ministries to appoint representatives on the Co-ordinating Committee to work full-time on the project. It also recognised that there are potential sources of funding include foreign organisations and institutions such as the EU and METAP that can assist in the implementation of the priority action areas. A tentative work programme spanning the same time-frame as the NWLP has been put forward.

Activity 2: THE STUDY FOR THE EVALUATION, DESIGNATION AND MANAGEMENT OF A MARINE CONSERVATION AREA

This activity focused on the study and assessment of the status of the marine biological resources along the coast stretching from Rdum Majjiesa to Raheb Cave on the northwest coast of the island of Malta with the purpose of developing recommendations concerning the planning and management of the site, notably as a Marine Protected Area.

The main activity objectives were:

- a) To implement a pilot study related to the identification, establishment and management of a Marine Conservation Area, following the criteria and guidelines elaborated within MAP, as a contribution to national efforts toward conservation of fragile and vulnerable marine resources and sustainable development of the island;
- b) To initiate and provide the basis and experience for a continuous activity on Marine Conservation areas in the country, by formulating protection and management resources for the project area, and proposals for the follow up of the activity.

The activity was implemented in four main phases:

Phase I	Collection & analysis of existing information; planning of fieldwork
Phase II	Survey of the study area
Phase III	Compilation and processing of field and bibliographic data and information
Phase IV	Preparation of recommendations for a Management Plan and final report

The benthic survey was divided into a desktop study and three field surveys. In brief, the desktop study involved the compilation and perusal of existing bathymetric charts, terrestrial survey sheets, and reports on biological studies conducted in the area. A working boundary was set, the outer (seaward) boundary being the 45 – 50m depth contour. The whole area subdivided into six regions.

The total area of seabed and length of shoreline were estimated using a digital version of the survey sheets, extended to the outward boundary using the appropriate software techniques. This was followed by the field surveys consisting of a preliminary survey using SCUBA; a bathymetric survey using a hand-held GPS and echo-sounder and a benthic survey using numerous snorkeling and SCUBA diving techniques.

The benthic survey was conducted between March and October 2000 and a report was drawn up, entitled “Report on surveys of the bathymetry, submarine geophysical features, seascapes and benthic biotic assemblages of the area from Rdum Majjiesa to Raheb Cave on the northwestern coast of the island of Malta, designated as a candidate Marine Conservation Area” (Pirotta, K. and P.J. Schembri, 2000). This report gives a very comprehensive and detailed description of the benthic survey conducted as part of this study.

The benthic survey, although not a completely exhaustive study and not an inventory, has however showed that the site is characterized by a varied littoral and sublittoral geomorphology that includes all the main types of seascape elements encountered in the coastal waters of the Maltese Islands. It also includes representatives of most locally occurring marine biotopes and a high biodiversity. This confirms the preliminary work conducted in this area and justifies the proposal that the area is a suitable candidate for a Marine Protected Area.

The report also addresses the main coastal uses in the study area and its environs which include tourism and recreation; agriculture; fisheries; maritime and shipping and infrastructure. Some of the issues arising from these activities include:

- The formation of numerous tracks, some of which have been cemented or tarmac, to facilitate accessibility to the fields, even by vehicles. These give rise to trampling on natural habitats and create a negative visual impact.
- Irrigation needs have caused farmers to redirect freshwater courses, thus depriving natural vegetation and resulting in a general degradation of communities. Present irrigation techniques needed to be improved to make better use of these invaluable resources.
- Natural ecosystems are threatened by the planting of alien species particularly in the boulder screes areas.
- Limited access due to various reasons have caused people to tend to concentrate in localized areas, thereby accelerating localized impacts from trampling.
- The presence of numerous pleasure craft especially in Fomm ir-Rih Bay has placed seagrass meadows under threat from anchors dragging on the seabed.

One undeniable fact comes out – the extreme heterogeneity of the area and its diversity of socio-economic significance of the activities taking place. This fact makes the study site an excellent model for the application of the Multiple Use Marine Conservation Area, a designation which is the most realistic and appropriate approach to attain the recommended goals and objectives, allowing the preservation and maintenance of biodiversity and the conservation of seascapes and adjacent landscapes, with a concurrent fulfilment of socio-economic requirements and obligations.

A management plan is proposed for the study area that includes a strategy coastal uses discussed previously and the natural resources present in a site. Management plans for Marine Protected Areas require focused guideline based on properly interpreted scientific data which must be applied in the right environmental, socio-economic, cultural, spatial and temporal context in order to succeed.

The zoning scheme being proposed emanates from a careful and in depth analysis of the data and information resulting from the benthic survey. This scheme was proposed as a guideline to be used in conjunction with a comprehensive assessment including the landward side of the coast, as established from the various studies conducted during the last decade. This scheme is being proposed on the basis of it giving prominence to areas with a high ecological and/or conservation value and areas which are socially and economically viable. Such seemingly diverse attributes are in fact interlinked and cannot realistically be treated separately, or to the exclusion of each other. This gives a common purpose for protection - that of protecting natural resources for conservation and for sustainable use and long-term preservation of the resource.

In order to ensure that provisions of the Management Plan and consequently of the various action plans are abided by, one of the first actions of the Coordinating Committee would be to draft and publish the necessary legislation, and policies, which will outline the obligations necessary for the proper protection and/or conservation of the area as an MPA. This would give the relevant institutions the necessary legislative and enforcement powers to enact the various policies and obligations for the safeguarding of the resources in the area and the betterment of the environment.

It is recognised that the declaration of a marine conservation area and the formulation and implementation will act as the departure point for the subsequent establishment of other candidate sites as Marine Conservation Area and the drawing up of a national policy for the protection of the marine environment. The achievement of these objectives thus will enable the safeguarding and enhancement of the island's natural heritage and effective decision making, development planning and control along the coast and at sea.

Activity 3: INTEGRATED WATER RESOURCES MANAGEMENT FOR NORTHWEST MALTA

The water resources of Malta are mainly groundwater originating from the mean sea level aquifer and desalinated seawater. The groundwater is pumped via about 90 boreholes, none of which in the NW and 13 pumping stations out of which 5 in the activity area. Desalinated water has, for years now, been used to blend the ever-increasing saline groundwater. However, increasing desalination costs as well as increasing salinisation of groundwater due to uncontrolled private extraction, has compelled the water authority to contemplate the polishing of groundwater and eventually reduce on desalinated seawater.

Apart from the chloride content which is high, then there is the problem of nitrate which has also increased over the years. No use of groundwater found on the perched aquifers is used for potable purposes because of the high nitrate content. Groundwater in perched aquifers is mainly used for irrigation and domestic washing purposes.

Alternative sources of water for secondary uses have been identified in order to alleviate stress on first class water. These are storm water and treated sewage effluent. The use of the latter has already been practiced in the South East of the Island for these last 18 years and has proved to be successful even though improvement in sewage quality and eventual more efficient use would make this source of water more attractive to use. Use of storm water has been made over the years for irrigation but no real study has ever been concluded to ascertain the quantities, the quality and the effect of storm water.

In the NW region, there are 26 catchment areas. However, most of these have small surface areas. It was decided that in order to carry out a concise hydro-geological and morphological study, the largest river basin, Burmarrad, was considered. This catchment area is 42 km², while the valley system is made up of 19 drainage sub-branches.

The main objectives of this activity was therefore to:

- Contribute to the sustainable management of national water resources
- Reduce dependency on expensive desalinated water
- Provide basic study for future projects namely groundwater polishing, reuse of treated sewage effluent and stormwater

In order to attain the above objectives, a set of project stages were stipulated:

1. An analytical phase which included the assessment of the actual hydro-climatological parameters predominant in the NW area;
2. An assessment of the hydrological and hydro-geological characteristics of the North West area. This included presence of perched aquifer blocks in the NW as well as that of surface water and in particular in the largest water catchment of the region, namely that of Wied il-Qlegha also known as Burmarrad catchment. A water balance of each block was also made.
3. An inventory of the water resources available as well as sources of pollution and impacts on water resources. This included water infrastructure development (e.g. fresh water, storm water, sewerage systems) as well as the socio-economic status in the region.

During the implementation of the activity, the following aspects were also taken into consideration:

- Qualitative and quantitative assessment of resources.
- MSLA gallery beneath Blue Clay.
- Potential use of surface run-off and TSE
- Identification of cost-effective treatment methods.
- Land use impact on groundwater quality.
- Assessment of water quality trends.
- Water Demand assessment.
- Design treatment plant for GW sources in the north-west.

Thus, reports were produced on the hydroclimatological factors, quantity and quality of the surface waters and groundwater, natural water balance, water demand and utilization including the analysis of the natural and socio-economic factors. Moreover, a general overview of the present situation in the production and distribution of potable water supply, sewerage system, treatment plants, storm water and wastewater infrastructure was given for the NW region. Short term and long-medium term solutions and projections have been included.

The present state of groundwater quality is the inevitable result of a long history of disregard towards environmental conservation. Disturbances are generated by many different sectors of the Maltese society and they are often associated to land development. A new institutional and legal framework is today required that would set the measures and regulations need to protect groundwater resources. This may be attained with the institution of the Malta Resources Authority.

On the whole, the experience gathered during the implementation of the activity was positive since it threw light on certain aspects which previously might have been underestimated if not outright ignored. The most important conclusion that came out of this project is not purely technical. The importance of having structured and regular monitoring of all parameters related to the aspects and issues mentioned in the report came out clear. Moreover, a National Data Management unit (apart from or as a part of the NSO) would be appropriate. This would eventually divulge raw or manipulated information to the various entities to compile reports as required. Alternatively, more funds should be made available to the various departments so that the necessary data is kept and managed effectively.

Activity 4: SOIL EROSION/DESERTIFICATION CONTROL MANAGEMENT

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 an age-old practice of soil conservation. However, this has traditionally necessitated heavy investment in the maintenance of terraces. Despite this, there have been very few, if any, attempts to appropriately address and mitigate for this widespread problem on a national level.

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

- 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.

The Project activity was implemented through the application of the new consolidated erosion mapping and assessing methodological procedure as defined in the "Guidelines for Erosion and Desertification Control Management with particular reference to Mediterranean Coastal Areas" (UNEP/MAP/PAP, 2000). The mapping survey procedures mainly identified and assessed physical parameters and processes that were integrated during the synthesis phase with socio-economic factors such as land use, cropping practices and urbanisation.

During the implementation of the activity, there was a constant concern for participatory approaches, sustainability assessment and monitoring and integration of sectoral surveys. As the participatory approach was considered as a pre-requisite for proper determination of priority areas and elaboration of sustainable remedial options, special emphasis was placed on formal and informal contacts with the Project stakeholders. In fact, involving the main stakeholders, i.e. local authorities, the population involved in agricultural activities, the scientific community and NGOs, was an asset to the activity. A close link was therefore kept with the participatory programme within the CAMP project.

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. Data was collected such that scenarios for the future could also be developed. Five main indicators were identified, namely the number of flood warnings, land tenure, the number and length of breaches in rubble walls and the number of claims for compensation of storm damages. The source of data for monitoring these sustainability indicators was also identified.

The erosion/desertification control management activity was implemented in three main phases:

- Phase I: Preliminary analysis/processing/interpretation
- Phase II: Erosion mapping/surveying at different levels
- Phase III: Final synthesis and remedial recommendations

The general sequence of actions consisted of eight sub-programs of specific activities: collection of basic technical data and information; development of an erosion GIS; site-descriptive erosion mapping; other surveying activities; integration of mapping outputs within a socio-economic background; diagnostic analysis; strategy development and monitoring/capacity building.

For integration of mapping outputs with socio-economic parameters, a report on the relevant socio-economic patterns and strategies was prepared. The main patterns identified to have an impact on soil erosion/desertification processes can be summarised as being:

- population (population changes and urbanisation, road development, farming practices)
- exploitation of freshwater resources (irrigation, salinisation, nitrate pollution in water table, irrigation with 2nd class water)
- costs of soil erosion (cost of soil replacement, cost of preventing soil erosion)
- soil as a non-agricultural resource (hunting and trapping, quarries, ecotourism)
- industrialisation of agriculture (greenhouses, hydroponics, animal husbandry, irrigation techniques, reservoirs and bore-holes, crop type, viticulture)
- land tenure (fragmentation of holdings, land abandonment).

As a result of the field surveys, predictive mapping and the integration of the socio-economic parameters, priority areas for immediate intervention were identified and categorised:

- Clay soils with a low degree of maintenance of rubble walls
- Steep slopes with a current agricultural use or abandoned fields and neglected rubble walls
- Valley beds/flood prone areas
- Areas under the influence of runoff water from non-absorbent sealed surfaces (roads and buildings), where storm water runoff is not taken into consideration in the planning or construction stage.

Furthermore, one of the main indicators for the identification and delineation of priority areas for preventive, curative and/or protective remedial measures was the state of repair of retaining rubble walls. For this purpose, the state of repair of rubble walls in Northwest Malta was surveyed during the period July 2001 and August 2001. The main aim of this mapping exercise was to observe and note the state of rubble walls and terracing in the area. A practical legend was adopted which took into consideration all the possible variants encountered during the field visits.

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.

Following the completion of the activity, the need for further research was felt in order to assess erosion/desertification phenomena in Malta. Therefore, a number of post-project activities were identified for future implementation. The following two recommendations should be considered:

- The study is extended to the whole island of Malta and Gozo so as to complete the determination of priority areas for the Maltese Islands.
- The development of site specific rehabilitation and remedial measures schemes should be addressed by a specific project in order to make full use of the results of the diagnostic analysis provided in this project activity.

Moreover, this activity has produced some important baseline data which should be followed up. Thus, arrangements for regular follow-up surveys for soil erosion processes should be made. Funding of these activities should be included in the regular budget of the relevant institutions. Also, the relevant Government Institutions should explore the possibility that key stakeholders, (e.g. Farmers' Co-operatives) ensure monitoring of erosion/desertification processes through the sustainability indicators. A central database needs to be identified and accessibility of the data has to be guaranteed to the stakeholders.

Activity 5: THE STUDY OF THE ENVIRONMENTAL HEALTH IMPACTS ON TOURISM IN THE NORTH WEST AREA OF MALTA

The tourism industry is one of Malta's main economic pillars. Malta boasts about its agreeable warm weather conditions, its beautiful and clear bathing waters, as well as its rich archaeological, historical and cultural heritage. This wealth must be scrupulously preserved in order to retain and maintain its magical effect. This can only be achieved by ensuring tourism is kept at sustainable levels.

Preserving a healthy and sustainable state of the environment is an important necessity to ensure that the tourism industry remains buoyant. While the importance of preserving the natural environment for the sake of tourism is obvious, the detrimental effect on the tourism sector by public health issues is still not yet well recognised. There is however a clear need for greater synergy between the tourism and public health sectors so as to sustain tourism in Malta. The benefits to be reaped by improved health from maintaining adequate environment standards in the hotel industry are obvious, i.e. a better quality tourism product which will contribute to more sustainable tourism and increased economic development in Malta

The activity thus was geared towards the study of environmental health issues highlighted by the local tourism sector. The activity identified key issues that are important to the tourist visiting the Mediterranean, substantiated through questionnaires to the sectors concerned, together with data gathering and analysis to corroborate the findings in these questionnaires.

The main objectives of this activity were to contribute to sustainable development of tourism in Malta, reducing and eliminating potential impacts on health of the resident population and tourists in the NW area, as well as to protect the environment upon which public health depends in large measures making sure of the rational use of tourism resources, improving health conditions and increasing the level of sanitary protection and control. Recommendations and proposals for land use and future development of tourism were formulated taking into consideration the relevant health aspects identified during the activity.

The study was limited to the Northwest of Malta. The study was implemented by means of a series of questionnaires and field surveys. However, stakeholders' involvement was evident and constant throughout the activity, which was implemented during the official summer season, i.e. between the 15th May and the 31st October, 2000. The methodology employed included medical questionnaires, bathing water analysis, drinking water analysis, a study on beach cleanliness and availability of amenities and food control.

Following these studies, a set of recommendations were proposed:

- Setting up of a centre dealing specifically with tourist health
- Health promotion leaflets, brochures and audiovisual aids
- Implement services for the prevention of road accidents
- Educate the tourist about traveling and having fun in a safe manner
- Implement public pool regulations (safety)
- Hotel staff to have first aid knowledge
- Health ID card for travelers
- Promote the need to avoid excess sun exposure
- Elderly travelers to have a geriatric assessment prior to travel

- Promotion on prevention of disease
- Implementation of HACCP Systems in food establishments
- Training of food handlers (including street vendors)
- Setting up beach management committees with stakeholders
- Contingency plans for oil spills should be adequately rehearsed
- Regular monitoring programme for sand quality
- Acquire blue flag criteria
- Involvement of Local Councils
- Increased surveillance during the summer months
- Co-operation between authorities with respect to water supply, building permits etc.

HORIZONTAL ACTIVITY: SYSTEMIC AND PROSPECTIVE SUSTAINABILITY ANALYSIS

Blue Plan's activities are focused on studies to evaluate current situations before exploring the possible future relationships between development and environment as well as observing through indicators the progress towards sustainable development in the Mediterranean.

The SPSA was one of the cross-cutting projects within CAMP Malta. Its main objectives were:

1. to contribute to efforts towards a sustainable development of the island, and in particular of its North West area, by preparing a set of sustainability indicators and a systemic sustainability analysis, to be made on the basis of description and assessment of level of sustainability by main indicators;
2. to introduce and apply systemic sustainability analysis as a specific tool for sustainable management, in this case of coastal and marine areas;
3. to create inputs of interest for the activities of the Mediterranean Commission for Sustainable Development, for wide use in the Mediterranean region.

The SPSA approach was to identify and measure sustainability indicators with the participation of key stakeholders. This approach was designed to produce Sustainability Indicators in a holistic perception and in an inclusive and participatory manner. This approach sought to achieve agreement between stakeholders as to what constitutes sustainable development within their system and how this is to be measured.

The activity consisted of five workshops during which participants, which included team members from the thematic projects, were exposed to the process for the development of sustainability indicators. The intensive group work that constituted most of the workshop sessions and the sharing of experiences with stakeholders were the salient element of the Activity. The process provided a learning experience and a valued opportunity for Blue Plan with a basis on which to test the approach in a particular context and determine its application.

The final outcome of the whole project was to propose and provide a monitoring programme in order to follow progress or down turns in the process to achieve sustainable development according to key indicators. SIs have been identified for the thematic activities and a shorter list of key SIs which would reflect the level of sustainable development in the NW was identified.

A number of scenarios were developed to test the indicators. Scenario 1 was based on current trends and indicates that the absence of any form of management and integration of activities existing issues are unlikely to be solved.

On the other hand with Scenario 2 sustainability would be possible if a number of actions are taken and these include:

- Management measures in recreational areas to reduce private car use and improvement in public transport system;
- Increased Regulation of recreational vessels in the marine environment;
- Introduction of rural tourism;
- Provision of new recreational facilities

The SPSA was a learning process and this was the first time that such an approach was adopted in a CAMP project. This approach certainly gave a new dimension to the concept of sustainable development and extended the understanding of this concept down the line to the specific stakeholders, rather than retaining this concept at a theoretical level.

HORIZONTAL ACTIVITY: DATA MANAGEMENT

The general objective of this horizontal activity was to ensure cost-effective implementation of the Project by providing comprehensive data management and the creation of a Project Database and GIS.

In order to achieve this, the activities implemented were:

1. Compilation and distribution of an Initial Data Base to the five thematic teams;
2. Addition of any specific requirements of other teams;
3. Identification of missing data; any data/information that was required was thus compiled. This was done with the assistance of the consultant and/or studies;
4. Provision of a data capture standards and output standards by the different activities;
5. Output Mapping according to needs;
6. Data analysis;
7. Production of a final Integrated Project Database.

The first phase of this activity involved preparation and initialisation. Following several meetings with the team leaders, data requirements of all the project activities were identified. The relevant datasets were then collated and compiled into an Initial Project Database. This was produced on a CD which was distributed to all team members.

Data capture and output standards were identified and documented to ensure that all the thematic data conform to the same geographic co-ordinate system, scale, data formats and structure. Furthermore, technical methodologies were outlined and discussed with the team leaders so as to determine what software and data capture tools were available.

The second phase of this activity depended on the outputs and schedules of the other thematic groups. All the different activities' requirements and outputs were gauged in order to assess the level of spatial awareness across the various project groups and to determine what assistance would be required for the spatial analysis of each activity's final output. All activity output data were converted to a standard data format and a metadata dictionary of the project data was compiled with the assistance of the team leaders.

The mapping outputs of each activity were given to the relevant teams in hard and digital formats for inclusion in the respective Final Activity Documents.

The final phase of this activity involved the collation of all activity data into an Integrated Project Database available onto a final project CD. This CD has been distributed to all team leaders and stakeholders.

It should be highlighted that this activity has accrued a great benefit to the CAMP Project by adopting an integrated data approach. Worth mentioning is the reduction in the duplication of data across activities, provision of standard data outputs, data sharing and communication between thematic activities.

ANNEX 3

LIST OF NATIONAL EXPERTS

Co-ordination and Integration	Environment Protection Department (Ministry for the Environment)	Louis Vella	National Project Coordinator
		Christine M Tanti	National Project Administrator
	PAP/RAC (MAP UNEP)	Ivica Trumbic	Director (operational co-ordination & supervision)
		Arsen Pavasovic	Co-ordinator obo MAP
		Neven Stipica	Administrator obo MAP
	MEDU	Arab Hoballah	Deputy Co-ordinator (overall supervision & co-ordination)

Activity	Responsible Authority	Team leaders	Team members
Sustainable coastal management	Planning Authority	Adrian Mallia	Michelle Borg Alexei Zammit Rachel Portelli Adrain Mifsud Michelle Sant
Marine conservation areas	Environment Protection Department	Prassede Grech	Adrian Mallia Michelle Borg Prof P J Schembri Konrad Pirota
Integrated water resource management plan for Northwest Malta	Institute for Water Technology (WSC)	Ernest Azzopardi	John Mangion Paul Micallef
Erosion/desertification control management	Environment Protection Department	Christine M Tanti	Anthony Borg Avertano Role' Ivan Calleja Sonya Vella Rene Attard Joseph Gerada
Tourism: impacts on Health, with particular reference to the NW area	WHO/EURO Sub-regional Centre on Health, Environment and Tourism	Lucienne Licari	Health Inspectors John Attard Kingswell Charles Bonnici Paul Spiteri
Data Management	Planning Authority	Carol Aguis	Saviour Formosa
Systemic and Prospective Sustainability Analysis	Ministry for Economic Services	Ray Cachia Zammit	Anthony Ellul Andrew Vella Claire Tonna/Dennis Grech Joslyn Magro
National Steering Committee	Environment Protection Department	Louis Vella	Ernest Azzopardi Godwin Cassar Anthony Mifsud Lucienne Licari Ray Cachia Zammit Avertano Role' Christine M Tanti Vince Attard

LIST OF MAP EXPERTS

Activity	Responsible Centre	Consultants
Final Integrated Project Document	PAP/RAC	Brian Shipman
Sustainable coastal management	PAP/RAC	Gojko Berlengi Glafkos Constantinides Barry Sadler
Erosion/desertification control management	PAP/RAC	Jean-Claude Griesbach
Integrated water resources management	PAP/RAC	Jure Margeta
Public Participation (training)	PAP/RAC	Michael Scoullous
SPSA	Blue Plan	Elisabeth Coudert Simon Bell Stephen Morse
MCA	RAC/SPA	Chedly Rais Marco Barbieri
Tourism & health	WHO/EURO office	George Kamizoulis

ANNEX 4

CONCLUSIONS AND RECOMMENDATIONS OF THE FINAL PRESENTATION CONFERENCE, NOVEMBER 2002, SLIEMA, MALTA

Conclusions

1. The results achieved by the project as a whole and by its individual thematic activities represent an important contribution towards the protection and rational use of national resources, sustainable development, and integrated coastal management in Malta.
2. The ICAM methodology, as proposed by MAP and as adapted to the specific Maltese and local conditions was endorsed and highly appreciated as a contribution to national practice.
3. The basic approach applied by the project was innovative and task oriented, resulting in concrete actions for implementation.
4. The structure of the project facilitated the bottom up approach with a strong participatory component, accompanied by project actions and results driven by stakeholders.
5. The concept of the Coastal Resources Advisory Board (CRAB) was perceived and endorsed as a body to facilitate integrated management towards sustainable development of coastal and marine areas, and to facilitate the implementation of relevant actions and projects.
6. The ICZM Conference Declaration is considered as a policy instrument, which is innovative and adapted from the regional level to Maltese conditions and prospective since it gives guidance towards conservation, protection and sustainable use of national coastal and marine areas.
7. The participants to the Conference thank MAP and the respective RACs, especially PAP/RAC for their support and assistance to the Project and congratulate the national institutions: Malta Environment and Planning Authority (EPD and PA), Institute for Water Technology (WSC), WHO Euro Office, University of Malta, Ministry for Economic Services, National Statistics Office, Department of Agriculture, Department of Health Policy and Planning, Economic Planning Division and the respective national teams involved in the project for their dedicated efforts, contribution and the innovative results achieved.
8. Finally, the Conference emphasizes the fact that the use of Project results and introduction into national practices of the innovative methodologies and tools resulting from the Project, will require concerted and well structured efforts by relevant national authorities, as well as further support and assistance by MAP, in particular during the implementation of the post project phase.

II. Recommendations

1. In order to maintain the momentum achieved by the project, the programme for follow up activities, (in particular for the post project phase envisaged by the project agreement), should be formulated and agreed upon with MAP within a reasonably short time and adopted; its implementation should start during the first quarter of 2003.
2. The Conference recommends to the national institutions to seek to include appropriate funding from National and other sources, to facilitate as the initiation and/or continuation of the post project activities.
3. The conference recommends to the national institutions provide direct funding and endorsement for multilateral and bilateral financing by prioritising the post project proposals.
4. The conference recommends to the national institutions that further in-depth studies be undertaken on the use of economic instruments for coastal zone management with emphasis on concrete Maltese conditions and needs.
5. The Ministry for the Environment is invited to establish a Coastal Resources Advisory Board and to provide means for its efficient and effective operation.
6. MEPA should secure the necessary technical support and expertise for a long term implementation of project proposals and recommendations and secure durable funding for sustainable coastal area management.
7. The Conference recommends that the ICAM Declaration be disseminated to the general public, stakeholders and authorities and institutions at national and local levels; and that MEPA might consider the opportunity to adopt it in the present or adapted version as a bases for the preparation appropriate legal instruments on integrated coastal area management.
8. The Conference recommends the wide dissemination amongst the general public, stakeholders and institutions, of the major outputs of the project. These should be taken into account when defining and deciding on future coastal and marine related policies and projects.
9. The Conference recommends in particular that monitoring of sustainability, using the Sustainability Indicators identified by the SPSA thematic activity with the involvement of all national teams, to be established as a regular programme.

ANNEX 5

WHAT IS ICAM?

Since this Document will set out the bases for future ICAM activities in Malta it would be useful to explain the basic concepts of Integrated Coastal Area Management (ICAM).

The coast is obviously the area where the land meets the sea. However, that definition refers more accurately the shore. The coast extends over a much larger area. Hansom (1998) defines the coast as 'the air-sea- land interface zone around continents and island', adding that inland it reaches as far as the maximum extent of sea-spray and seawards it reaches to the 'outer extent of the continental shelf'. While Hansom's definition is a geomorphological one, Beatley *et al.* (1994) describes the coast from an ecological perspective as 'a transition zone, or an ecotone, lying between oceanic environments (or lakes) and terrestrial systems'.

A river or valley catchment can also be considered since a particular event in an upland catchment will eventually reach the sea. From an economic perspective, the coastal zone could be highly varied: fisheries, industries such as ports and harbours.

By international and Mediterranean definitions, the Maltese the coastal zone extends to the whole island. For a small island and especially for an Island State, this definition is considered as inappropriate and as a result of the work carried out in the CAMP Project the term coastal zone was re-defined into a more appropriate and meaningful concept.

Examples of definitions of the Coastal Zone

The coastal zone may be defined as the area where land and sea interact with its landward boundary defined by the limits of ocean influence on the land and the seaward limit being the limit of influence of land and freshwater on the coastal ocean, or put another way that part of the land affected by its proximity to the sea and that part of the ocean affected by its proximity to the land.

US Commission on Marine Science, Engineering and Resources, 1986

The inland and ocean boundaries are not however spatially fixed...

IUCN

The coastal zone is the interface where the land meets the ocean, encompassing shoreline environments as well as adjacent coastal waters. The limits of the coastal zone are often arbitrarily defined, differing widely among nations, and are often based on jurisdictional limits or demarcated by reasons of administrative ease. For practical planning purposes, the coastal zone is a special area, endowed with special characteristics, of which the boundaries are often determined by the specific problems to be tackled.

World Bank

Coastal Zone (the subject of coastal zone management) is a geographically delineated area. It is distinctively characterized by the aggregation of interacting coastal environments and corresponding natural and man-made structural systems.

World Coast Conference

The coastal zone is defined as a strip of land and sea territory of varying width depending on the nature of the environment and management needs. It seldom corresponds to existing administrative or planning units. With regard to fisheries, it is common to limit the coastal zone to territorial waters as defined in the Convention on the Law of the Sea, although this limit does not correspond to any distinct biological or management unit.

The natural coastal systems and the areas in which human activities involve the use of coastal resources may therefore extend well beyond the limit of territorial waters and several kilometers inland.

European Commission

ICAM is a process designed to 'join up' all the different policies which have an effect on the coastal regions. It is about both planning and management of coastal resources and coastal space. It is not a 'one off' solution but an ongoing dynamic process that will evolve over time.

It is also a conflict minimization, if not resolution, process which strives to bring together all the local, regional, and national policy-makers and other stakeholders whose activities affect coastal regions. These 'stakeholders' need to include not only government, and regulatory agencies officials and policy-makers but also other interested parties such as the local residents, non-governmental organisations and businesses. Without coordination at all levels, efforts to protect the coastline are bound to have only a limited success.

ICAM is not just an environmental policy. Whilst the need to protect the functioning of natural ecosystems is a core aim of the strategy, ICAM also seeks to improve the economic and social well-being of coastal zones and help them develop their full potential as modern, vibrant communities. In the coastal zone, these environmental and socioeconomic goals are intrinsically interconnected.

Definitions of Integrated Coastal Zone Management (ICZM)

ICZM is a continuous process of administration the general aim of which is to put into practice sustainable development and conservation in coastal zones and to maintain their biodiversity. To this end, ICZM seeks, through more efficient management, to establish and maintain the best use and sustainable levels of development and activity (use) in the coastal zone, and, over time, to improve the physical status of the coastal environment in accordance with certain commonly held and agreed norms.

European Commission

Integrated Coastal Zone Management (ICZM) is a governmental process and consists of the legal and institutional framework necessary to ensure that development and management plans for coastal zones are integrated with environmental (including social) goals and are made with the participation of those affected.

World Bank

Integrated Coastal Area Management (ICAM) is defined as an adaptive process of resource management for sustainable development in coastal areas. Sustainable development requires that the quantity and quality of coastal resources are safeguarded in order that they not only satisfy the present needs but provide a sustained yield of economic and environmental services for future generations.

UNEP

The concept of Integrated Coastal Zone Management - ICZM - aims to build a platform for different authorities, sectors, interests and communities, to focus on the interaction between various activities and demands for natural resources in coastal zones, with the common objective to achieve an ecologically sustainable development within a specific geographical area.

HELCOM

Integrated coastal areas management (ICAM) may be defined as a process of resource-management aimed at the sustainable development of coastal areas. The prerequisite for sustainable development is the preservation of the high quality and quantity of coastal resources, whilst meeting not only the current needs, but also whilst securing long-term (or sustainable) economic and ecological benefits for future generations.

Guidelines for Carrying Capacity Assessment for Tourism in Mediterranean Coastal Areas.
PAP/RAC Split, Croatia

Integrated Coastal Zone Management is a planning and management process which aims to balance multiple human activities and demands on the coastal space and resources with the protection of dynamic and vulnerable coastal systems and the maintenance of the functions and services which they provide. ICZM provides a means to enhance regional economic development and to improve the quality of life in coastal areas.

Demonstration Programme on Integrated Coastal Zone Management, European Commission

ANNEX 6

EU STRATEGY ON ICZM

The Spanish Ministry of Environment in the context of the Presidency of the Council of the European Union and the European Commission as well as representatives of EU Member States and Candidate Countries, with the value support of representatives of European Parliament, meeting in La Vila Joiosa, Alicante, España, from 18 to 20 April 2002, reflecting a true political will to implement ICZM in Europe, recommend to:

1. Make advances towards achieving an integrated and ecosystem approach of the coast, considering the interrelation of physical, biological and geomorphological processes, relevant aspects such as biodiversity, social progress, degree of satisfaction, and particularly advances towards devising objective economic valuation techniques for externalities of main impacting activities.
2. Emphasise the need to propose and agree upon a common understanding of the "coastal zone" in functional terms, a sense of vision of how we wish the coast to meet the needs of current and future generations as well as the interpretation of ICZM as a pro-active tool to facilitate appropriate development of coastal areas and resources.
3. Consider the urgent need to define precise scenarios and their probable consequences, in co-ordination with the relevant International Bodies, such as UNEP MAP, concerning the three most patent issues that affect to European coasts: the possible rising sea level due to global warming, the gradual depletion of fishing stocks and the increasing population growth registered in coastal areas. At this respect, short-term financial profits should not prevail over broader, long-term economic, social and environmental costs.
4. Promote the general use of existing comparable indicators i.e. for sustainable development, and if appropriate to develop indicators on a national basis to provide standardised descriptions of the status of the coast and possible impacts of human activities, throughout the European Union, as well as of the progress made towards ICZM in Europe.
5. Make advances in the management and development of knowledge, specifically, in knowledge organisation, in light of the opportunities provided by new technologies, and supported by common, systematic and standard formats, capable of producing standardised data bases that facilitate the flow of information on a European scale with the use of standardised G.I.S. too.
6. Underscore the need to compile a Guide to Good Practices with particular reference to main impacting activities (i.e. tourism, fishery, aquaculture, harbours management urban planning in coastal zone) so as to integrate horizontal decision making processes, and also provide a foundation for communicating the benefits brought by ICZM implementation.
7. Promote ICZM on a local scale, in the conviction that local governmental bodies and stake-holders play an essential role in the success of ICZM. Furthermore emphasising the possibility to use spatial planning integrated with sea-use planning and marine resources management, at national, regional and local level as a way to apply a holistic and dynamic perspective in ICZM in order to create a common vision of the sustainable development in the coastal zone and to ensure dialogue and participation of local and regional stakeholders.
8. Continue with the ICZM Demonstration Projects Programme undertaken by the European Commission, giving priority to those that can serve as good examples for the implementation of the Recommendation of the European Parliament and of the Council on ICZM and to those that aim to optimise the use of public resources, administrative processes and decision making, as well as to transnational and co-operation projects with non-European Union neighbouring countries.
9. Take advantage of the synergies arising in the application of numerous Community instruments affecting coastal zones, such as Water Framework Directive, EIA and SEA, and particularly those emerging from the new Environmental Action Programme: *Environment 2010: Our Future, Our Choice*, and from the Community Strategy on Sustainable Development. Ensure compatibility between Community large-scale financing/investment instruments and national/regional/local co-ordination of initiatives and subsequent strategies on ICZM.
10. Ensure the continuity of the *La Vila Joiosa Forum*, with the aim of facilitating progress towards a common ICZM understanding, and to improve the sharing of information on future national developments in the implementation of the European Recommendation on ICZM.

Finally, in support of the high level forum, the Commission could facilitate an expert group, recognising the enormous complex challenges coastal zones face and the need to develop common understanding and methodologies to adapt to the challenges. This expert group will follow the principles of transparency and stakeholder involvement.



ANNEX 7

COASTAL DECLARATION for MALTA (as presented and endorsed during the CAMP Malta Final Presentation Conference)

On the bases of the general deliberations resulting from the CAMP Malta project, the following declaration is endorsed as the **national vision** for the sustainable use and management of Malta's coastal areas:-

Reaffirming our commitment made in RIO⁷, and in Chapter 17 of Agenda 21 entitled 'Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas and coastal areas, and protection, rational use and development of their living resources'.

Recognising that for Maltese citizens, the coastal zone is the main and last remaining "open space" and that it has considerable sociological, cultural and psychological importance, its accessibility for recreational and leisure activities thus needs to be ensured and conserved, and where possible and practical, enhanced.

Recognising also that the coastal zone is an invaluable natural resource which is under great pressure resulting from demographic and lifestyle pressures, and that accessibility and use need to be managed in order to ensure a sustainable utilisation of the many material and living resources to be found therein.

A balance between material prosperity, social development, spiritual and cultural fulfilment, and ecological integrity, should be sought in the interests of all Maltese.

Efforts to ensure that Maltese citizens enjoy the coast in a spirit of community and shared responsibility will be initiated.

Efforts should be made to ensure that all Maltese will accept that the coastal zone is to be enjoyed in a spirit of community and shared responsibility, and thus they need to take responsibility for the health and sustainability of the environment, particularly for the coast, in a spirit of stewardship and caring.

We emphasise the need to agree upon a common understanding of the "coastal zone" in functional terms, and of a sense of vision of how we wish the coast to meet the needs of current and future generations, as well as the need for broad endorsement and acceptance of ICZM as a pro-active tool to facilitate appropriate and sustainable development of coastal areas and resources.

Guidance for the proper management of the Maltese coast shall be provided to allow the correct and appropriate management of coastal areas, in a way that current and future generations will benefit.

We therefore commit ourselves to the management of our coast in a way that benefits present and future generations, and that international, national and local obligations are honoured.

⁷ RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT
Special reference is made to principles 3, 4, 5, 10, 11, 15, 16, 17, 24 and 25.

We support the following set of principles which should guide our actions and set the goals and objectives for our Coastal Policy.

PRINCIPLES FOR AN INTEGRATED COASTAL AREA MANAGEMENT PLAN

To achieve the ideal of a truly sustainable coastal development, the following principles for integrated coastal management are proposed:

1. **National heritage.** The coast should be formally and legally recognised as an outstanding national and global heritage.
2. **Economic development.** Economic development opportunities in the coastal zone should be exploited in a sustainable manner to meet human needs and to promote human well-being.
3. **Social equity.** Coastal management efforts should ensure that all people, including future generations, are treated with dignity, fairness and justice.
4. **Inclusivity.** Coastal management shall be carried out in a socially inclusive manner, having sought the views and opinions of all parties, including stakeholder, non-governmental organisations and the general public.
5. **Ecological integrity.** The diversity, health and productivity of coastal ecosystems should be maintained and enhanced.
6. **Holism.** The coast should be treated as an indivisible system, recognising the inter-relationships between coastal users and ecosystems and between the land and sea.
7. **Risk-minimisation and precautionary principle.** Coastal management efforts should adopt a risk-minimisation and a precautionary approach under conditions of scientific and economic uncertainty.
8. **Duty of care.** Coastal management is a shared responsibility. All people should be responsible for the consequences of their actions, and have the duty to act with care to avoid damage to others and to the coastal environment.
9. **Co-ordination and integration.** Coastal management efforts should be co-ordinated and integrated, and conducted in an open, inclusive and transparent manner.

ANNEX 8

DRAFT TERMS OF REFERENCE FOR THE PROPOSED COASTAL RESOURCES ADVISORY BOARD

Functions

CRAB is envisaged to have a promotional, advisory and facultative role, and will in essence be a collaborative involvement of coastal users and organisations involved in the planning and management of ICAM initiatives

It is envisaged that it will strive to be a national and a regional centre of excellence on Coastal Issues, and interface with the National Commission for Sustainable Development and act as its centre of excellence on Coastal matters:

- Sustainable use of coastal resources
- Coherent spatial planning
- Improved stakeholder understanding and decision making
- Agreement on prioritisation of coastal issues
- Fostering a strong community feeling and thus participation and concurrence
- Promote a better quality of life through coastal services and facilities
- Promote a 'bottom up' approach to decision making
- Recommend measures leading to sustainable tourism
- Promote habitat conservation and restoration
- Promote and suggest measures leading to reduced erosion, desertification and flooding
- Generally act to lower environmental risks
- Initiate and or support research programs
- Promote greater public awareness
- Conduct periodic people satisfaction surveys
- Disseminate information concerning all aspects of Coastal Zone Management
- Promote formal and popular educational initiatives
- Suggest landscape improvement measures
- Suggest sustainable measures to improved the economic returns from coastal resources
- Promote the creation and maintenance of Blue Flag status beaches.

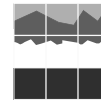
Membership

This could include representatives of various sectors, including stakeholders, Local Councils, NGOs, socio-economic actors and the general public. The board may also invite key persons who can give a contribution to any particular issue.

To the fullest extent possible, those members who have actively participated in CAMP Malta should be retained on CRAB.



PRIORITY
ACTIONS
PROGRAMME



MAP CAMP “Malta” Project
Final Presentation Conference
Report
(Malta, November 28-29, 2002)



CAMP/2000-2001/MT/FC.1
Priority Actions Programme
Regional Activity Centre
Split, December 2002

I. Background Information

1. The implementation of the MAP CAMP "Malta" project started in early 2000, the respective Agreement being signed on October 23, 1999. The project was related to the island of Malta, with particular reference to its NW area. The project structure included four "transversal" activities (Integration/Co-ordination, Data Management, Participatory Programme, and Systemic Sustainability Analysis) and five "thematic" activities (Sustainable Coastal Management, Marine Conservation Areas, Integrated Water Resource Management Plan for the NW area, Erosion / Desertification Control Management, and Tourism: Impacts on Health with particular reference to the NW area).

2. The Environment Protection Department¹ (EPD) within the Ministry of the Environment acted as the National Project Lead Agency, whilst specific units within the EPD, the Planning Authority, the Institute for Water Technology of the Water Service Corporation, the Department of Agriculture, WHO within the Department of Health Planning and Policy, NGOs, especially Nature Trust representing local NGOs and the University of Malta were actively involved in the implementation of individual project activities. From the MAP side, the MAP Co-ordinating Unit in Athens acted as the overall co-ordinator and supervisor on behalf of MAP, and PAP/RAC acted as operational co-ordinator of the project. The co-operation and assistance in the implementation of individual project activities were provided by PAP/RAC, BP/RAC, SPA/RAC and the WHO/EURO Project Office in MAP.

3. In comparison with previously implemented CAMP projects, a number of innovative elements of conceptual, structural and organisational nature were introduced and successfully applied in the "Malta" project. These innovative elements were based on the conceptual framework for CAMP projects, adopted by the Sixteenth Meeting of the Co-ordinating Unit of the Mediterranean Action Plan and Regional Activity Centres (Cairo, 1998), and following the Operational Manual for the Formulation and Implementation of CAMP Projects, prepared on the basis of that Meeting conclusions.

4. The implementation of the individual project activities was completed by the end of 2001. During the first half of the year 2002, the Final Activity Documents were drafted, revised and finalised. The formulation and preparation of the Final Integrated Project Document started in June and was completed in October 2002. It should be noted that, due to organisational innovations applied and a good co-ordination of project implementation from both sides, the implementation period of the "Malta" project was shorter than for any other previously implemented one.

5. According to regular CAMP practice and to the Project Agreement, after the completion of all project activities and of the final project documents, a Final Project Presentation Conference was organised jointly by PAP/RAC and the MEPA.

II. Objectives of the Conference

6. The objectives of the Conference were as follows:

- to present the project results, its characteristic features and benefits,
- to present and discuss the proposals for, and the organisation of the project follow-up activities,
- to present and discuss the experience gained concerning the formulation and implementation of the project, and
- to formulate relevant recommendations of potential interest for future CAMP projects.

¹ As of the March 1, 2002, the Environment Protection Department and the Planning Authority have been merged to form the Malta Environment and Planning Authority (MEPA). The Environment Protection Department is now the Environment Protection Directorate within MEPA.

III. Date and Venue of the Conference

7. The Conference was held on November 28-29, 2002, at Gzira, Malta, in the premises of "The Waterfront" hotel.

IV. Participation

8. The Conference was attended by representatives of Maltese authorities and institutions invited by MEPA, the members of the national teams involved in the project, and by representatives of MAP and its Centres involved in the project. In total the Conference was attended by 52 Maltese participants, 8 representatives of MAP, and 2 invited observers. A complete list of participants is given in Annex I.

V. Opening of the Conference

9. Mr. L. Vella, in his role of National Project Co-ordinator, greeted the participants, and in particular the Honourable Parliamentary Secretary Mr. G. Pullicino, Mr. A. Hoballah, Deputy Co-ordinator of MAP, and Mr. I. Trumbic, Director of PAP/RAC.

10. The Honourable Parliamentary Secretary Mr. G. Pullicino welcomed the participants expressing satisfaction with the outcome of the project. He expressed thanks of the Maltese authorities to MAP, through Mr. Hoballah, MAP Deputy Co-ordinator, for the support and assistance provided, to Mr. Trumbic, PAP/RAC Director, and Mr. Pavasovic, Project Co-ordinator on behalf of MAP, for their personal contributions to the project implementation. He also praised all the Maltese experts involved in the project for their dedicated contribution. The full text of his speech is attached as Annex II to this Report.

11. Mr. A. Hoballah, MAP Deputy Co-ordinator, greeted the Conference on behalf of the MAP. He thanked the Honourable Parliamentary Secretary Mr. G. Pullicino for his lasting support to the project. He also thanked the members of the national teams, and in particular Mr. L. Vella and Ms. C. Tanti for their personal contributions to the co-ordination and successful implementation of the project. He pointed out the importance of coastal areas for the Mediterranean region, and the significance of the integrated coastal management towards sustainable development. Being aware of that, MAP established the MAP CAMP, so far having successfully implemented projects in 9 countries. He expressed great satisfaction of MAP with the success of the Maltese CAMP project, to be not only beneficial for the country, but also to be used as a very good demonstration project in the region. The full text of his speech is attached as Annex III to this Report.

12. Mr. I. Trumbic, on behalf of PAP/RAC, thanked all Maltese authorities and institutions for the involvement in and support to the project, as well as to Mr. Vella, Ms. Tanti and Mr. A. Pavasovic, MAP's co-ordinator of the CAMP "Malta" project. He stressed the innovative elements of the project, its efficient implementation and the results which are not only of national interest, but which will be used as example and basic experience for future projects.

Election of Officers

13. The Conference elected the following Officers:

- | | |
|-----------------|------------------|
| - Chairman | Mr. L. Vella |
| - Vice-Chairman | Mr. E. Azzopardi |
| - Rapporteur | Ms. C. Tanti |
| - Secretary | Mr. N. Stipica |

Rules of Procedure

14. The Chairman informed the participants that, according to UNEP regulations, the Rules of Procedure as formulated in the document UNEP/IG.43/6 Annex XI and its revisions, would be applied *mutatis mutandis* to the work of the Conference.

Adoption of the Agenda

15. The Chairman presented the provisional Agenda which was adopted as presented in the Annex IV.

Presentation of Individual Project Activities

Erosion/desertification Control Management:

16. Ms. C. Tanti, the leader of the national team implementing this activity, presented the final activity document "Protection of Soil and Rural Landscape in NW Malta". She expressed thanks of the national team for the dedicated contribution of Mr. J.-C. Griesbach, PAP consultant, during the preparation and implementation of the activity. She gave a brief overview of the activity, and described how the problem was identified and addressed, the methodology applied and what were the main results and outputs. Furthermore, Ms Tanti gave the strengths and innovations that made part of this activity. A proposed list of recommendations and post project activities was also given.

17. In Maltese agricultural fields, there is an ancient capital of terraces with retaining rubble walls. These terraced fields contain deeper soil. However, when the rubble walls fail, large amounts of soil are lost. Soil erosion, land degradation and preservation of rubble walls are therefore closely interlinked processes. Apart from the actual loss of a valuable resource (soil), the eroded soil is transported by storm water onto dive sites and bathing areas, thus decreasing the quality of water and visibility. Moreover, the rural landscapes are also a tourist resource. In fact a key recommendation that resulted from this activity was that terraces and rubble walls should be maintained.

18. The need to address the problem of soil loss and land degradation was thus of utmost importance, and this was addressed by the application of the UNEP/PAP/FAO "Guidelines for erosion and desertification control management with particular reference to Mediterranean coastal areas". Examples of the main outputs include a set of thematic maps (e.g. soil erosion risk map for the NW Malta), baseline data (e.g. sediment traps) and a set of sustainability indicators for soil erosion/land degradation. Priority areas for mitigation were identified and thus specific recommendations for prevention, curative and protective mitigation measures were drawn up. These form a basis for intervention involving the stakeholders, namely farmers, their co-operatives and local councils.

19. One of the most important aspects of this activity was the active involvement and participation of the stakeholders during its implementation. Formal participation exercises were so successful that they led to informal individual meetings on the fields. Thus, the farmers felt that their voice was being heard and given its due importance.

20. Mr. L. Vella emphasised the experience gained during the implementation of this activity concerning the needed multidisciplinary approach and integration with other interrelated project activities.

21. In the ensuing discussion, the following elements were highlighted:
- importance of the joint implementation of this activity with the SPSA activity, and of the participatory contribution of stakeholders during the identification of respective sustainability indicators,
 - importance of rubble walls for the mitigation and control of land degradation processes in the affected areas,
 - importance of proper management and maintenance of terraces by farmers, and
 - the problems concerning: sediment transport and control, minimisation of soil loss, practical aspects of increasing the soil level, and of management of transported soil and its distribution to farmers.

Marine Conservation Areas:

22. Ms. P. Grech, the leader of the national team implementing this activity, presented the final activity document "A Pilot Study for the Evaluation, Designation and Management of a Marine Protected Area: Rđum Majjiesa to Raheb Cave (N.W. Coast of Malta - Final Report". She expressed thanks of the national team for the assistance and support of the SPA/RAC during the preparation and implementation of the activity. The coastal environment of the Maltese Islands is among the most precious resources. However, it is subject to exploitation by development, urbanisation and lack of proper nature protection measures. Although over the last years extensive work has been carried out on the landward part of the coastal zone, very little has been done in relation to the seaward side. This need has become more obvious during the last decade, and in 1992 the Malta Structure Plan listed 14 candidate sites for designation as Marine Protected Areas. The availability of the required resources has provided the team with the opportunity to conduct a study on one of the sites in preparation for the designation and management of the area. The stretch of coast from Rđum Majjiesa to Raheb Cave was selected for its diversity of ecology and geomorphology. Moreover, some parts of it are already protected as AEI's and SSI's, and the terrestrial part has been exhaustively studied as part of the scientific research conducted for the NW Local Plan. It was thus decided to conduct an intensive study of the marine environment down to the 45m to 50m depth contour line. Results showed the area to be very rich in biotic assemblages (sea grass meadows, photophilic and sciaphilic communities), coastal and submarine geomorphologic features (including boulder shores and *rdum*, sandy coves, wave cut terraces and shore platforms, semi-submerged caves, shoreline cliffs, shoals, stepped drop-offs out to sea and others) some of which are rare or unique. The flora and fauna that these habitats harbour are also of great ecological and conservation interest. A zoning scheme of protection was therefore proposed consisting of, in order of decreasing protection, Level 1 and Level 2 biotope protection zones, resource protection zone, general purpose area and a primary and secondary buffer zones.

23. In this study, several innovative elements were introduced. There was the first-time use of the recently devised SPA/RAC classification scheme for the Mediterranean from which experience was gained which will serve to improve the system and assist future workers. Locally, this was the first potential MPA mapped in detail for zoning as a protected area. The biological approach was extended to include seascape mapping, using the seascape classification system developed for the Maltese Islands. This scheme has extended SPA/RAC criteria from species assemblages to higher ecological units which make up "seascapes". From this, a set of recommendations was outlined, and a management plan will be drawn up with the aim of protecting indigenous biota, cultural and historical heritage, regulating human activities for the sustainability of the resources, and increasing public awareness and education. The plan could formulate a conceptual framework of a Multiple Use MPA model and a Multi-level Protection System.

24. Finally, it has been realised that more work needed to be done in connection with the designation of the area as a MPA, including detailed studies of features with conservation interest, the establishment of baselines for use in future monitoring, more detailed

characterisation of habitats, the formulation of a general framework for the declaration of MPA's and the setting up of management structures and monitoring programme/s to test the effectiveness of management system. Currently, the drawing up of a management plan as a post-project activity is underway, conducted by a team of local and foreign experts under the auspices of SPA/RAC.

25. Mr. C. Rais, Scientific Director of SPA/RAC, congratulated the national team for the successful implementation of this activity and remarkable results achieved. He informed the participants that SPA/RAC and the national authorities and experts were already involved in the implementation of the follow up to this activity, being implemented within the framework of SMAP.

Tourism and Health

26. Mr. J. Attard Kingswell, member of the national team implementing this activity, presented the final activity document "Final Report of Study of Environmental Health Effects on Tourism" on behalf of Ms. L. Licari who was unable to attend the conference. A CD containing the document was distributed to the participants. He expressed thanks of the national team to Mr. G. Kamizoulis, Head of the WHO Project Office at the MAP Co-ordinating Unit, for the guidance and assistance during the preparation and implementation of the activity, and all the others who assisted in the successful completion of this study.

27. He introduced his presentation by giving a statistical overview of the increase of tourism on the Mediterranean coast during the years. He also said that this activity had not only raised the question on the effect that environmental health had on tourism, but also what impact tourism had on the environmental health on the population of the host country. He stated that the activity aimed to contribute to a sustainable development of tourism by reducing potential health impacts and to protect the tourist through increased health protection and control. The study also set out to formulate recommendations for land use whilst taking into consideration relevant health aspects.

28. He explained that the study had been limited to the North West region of Malta, and it involved all possible stakeholders, the use of questionnaires and field surveys. This study, which ran from 15 May 15 to October 31, 2000, included medical questionnaires, laboratory analytical results of bathing and drinking waters, studies on beach cleanliness and availability of amenities on such beaches, as well as the very important topic of food control. Medical questionnaires revealed that the most common ailment reported by tourists were physical injuries, with gastro-enteritis, skin allergies and sunburn also bearing a level of relevance. The study also sought statistical information on hospital referrals, infectious disease, mortality and road traffic accidents among tourists. Statistics on food control in hotels and restaurants, bathing and drinking water quality were readily available from the monitoring programme of the Health Inspectorate Services of the Department of Public Health. Information on beach cleanliness was achieved through checklists, sand sampling and rodent control statistics. The study failed to acquire information on waste disposal from the area since no long-term accurate statistics were available, though it was evident that an increase in tourists would mean an increase in waste.

29. Whilst the ensuing result of each individual indicator did not specify any alarming results, however, the team working on this activity developed separate tourism, health and environment recommendations. Amongst these one would mention the need for a study on the carrying capacity (performed by MTA), improving facilities prior to developing new ones, developing eco-friendly holidays, developing further environmental health indicators, health promotion targeted towards the tourist, the establishment of beach management committees and acquiring blue flag grading for the beaches. In view of all this, one important recommendation would be the setting up of an official tourism, environment and health centre.

Systemic Prospective Sustainability Analysis

30. Mr. T. Ellul, member of the national team implementing this activity, presented the final activity document "Final Report on the Systemic and Prospective Sustainability Analysis Project within CAMP 'Malta'". He expressed thanks of the national team to Ms. E. Coudert of the BP/RAC, and their consultants S. Bell and S. Morse, for the guidance and assistance during the preparation and implementation of the activity, and especially the intensive training activity. The Systemic and Prospective Sustainability Analysis (SPSA) approach was a horizontal project which sought to integrate the sustainability concept within projects and between projects. The SPSA brought in the participation and contribution of stakeholders in determining, through the formulation of specific Sustainability Indicators (SIs), the desired and accepted level of sustainability within the context of the stakeholders. Systemic and Prospective Sustainability Analysis has, therefore, been designed to produce SIs in a manner which maximises their chances of producing a holistic perception of the context in question, and in an inclusive and participatory manner. The participants found the workshops very useful and inspiring, and this encouraged participation in this project. A number of SIs have been produced for the North West, and out of these a lesser number were selected as being important in reflecting the sustainability or otherwise of activities carried out in the North West. The results showed that, in terms of diving and traffic in the NW, sustainability levels have been exceeded, whereas the picture is more acceptable with regard to the quality of bathing water. The SPSA was a learning process both for the locals and for the consultants who devised this approach, and the lessons learned have resulted in a revision of the process, as well as in its application in other projects currently being undertaken in specific Mediterranean countries.

31. Mr. S. Bell, the BP/RAC consultant for this activity, commented on the need for understanding sustainability of processes. The SPSA was implemented as a crosscutting activity, looking for stakeholders' understanding of sustainability in general and in particular when defining the respective indicators. The problem is how to incite people to contribute by providing their understandings. Since stakeholders' views are differing, scenarios have to be offered as choice when defining indicators. He also emphasised the importance of monitoring the sustainability, which has to be understood as an open-ended process, to be institutionalised and included in regular programmes.

32. Ms. E. Coudert, the BP/RAC Programme Officer responsible for this activity, stressed the significance of SPSA as a new approach to, and a tool for understanding and monitoring sustainability. She congratulated the national team directly involved, but also the team leaders of all other project activities who had been involved in SPSA within their sectoral activities.

33. Mr. L. Vella emphasised the innovative character of this activity and the importance of the developed sustainability indicators, to be monitored during the project follow up. He also stressed the benefits from the stakeholders' involvement and contribution.

Integrated Water Resources Management

34. Mr. P. Micallef, member of the national team implementing this activity, presented the final activity document "Integrated Water Management of the North-Western Region of Malta". He expressed thanks of the national team to Mr. J. Margeta, PAP consultant, for his assistance during the preparation and implementation of the activity. This thematic activity aimed to contribute towards sustainable management of the national water resources, so as in the long run the dependency on expensive desalinated water is reduced. Such study has laid a good platform for any future projects, namely groundwater polishing, reuse of treated sewage, effluent and storm water. In order to accomplish such objectives, the hydro-climatological parameters were analysed, and thorough geological and morphological studies of the main catchment area were carried out. Moreover, an inventory of the water resources present in the study area was formulated. The main conclusions and recommendations resulting from this study have been

presented, and include the establishment of a national monitoring and data management unit, preparation of the National Storm Water Master Plan, tighter enforcement of regulations and legislation regarding pollution prevention and groundwater exploitation. Concluding his presentation, Mr. Micallef pointed out that the CAMP experience had been a very positive one since it had thrown light on certain aspects which previously might have been underestimated if not outright ignored. Moreover, it served as a very good platform for joint work of various entities having different roles in the various Maltese socio-economic sectors.

35. In the ensuing discussion the great number of boreholes and the improper practice of water extraction were identified as major problems for a sustainable management and rational use of water resources. Presently, the predominant part of the extraction equipment is being transformed from windmills to electrical pumps, resulting in uncontrolled extraction and waste of water. In addition, road construction further contributes to the waste of rainwater, channelling it straight to the sea. Finally, the problems resulting from pollution of water resources by pesticides, oil waste, and other pollutants were stressed.

36. Mr. E. Azzopardi, Director of the Institute for Water Technology and the national team leader for this project activity, commented on various aspects of the present situation concerning the management and use of water resources. Firstly, it seems that the problem of illegal water extraction is being ignored. Secondly, the responsibility for management of stormwater runoff is not defined. The socio-economic implications of water resource management should be taken into account, and all the relevant institutional aspects defined. Presently, about 4.200 boreholes are extracting water. This number should be reduced, the extraction practices controlled and the procedure regulated. An important fact related to this project activity is that the farmers' points of view were highlighted, calling for solutions aiming at a sustainable use of water resources, but also not neglecting the farmers' needs. Finally, Mr. Azzopardi stressed the need for further actions aiming at raising the public awareness.

Sustainable Coastal Management

37. Ms. M. Borg, member of the national team implementing this activity, presented the final activity document "Strategic Management Plan of North West Coast of Malta" and the document on SEA "Strategic Environmental Impact Assessment Report of the Draft North West Local Plan - Coastal Policies" on behalf of Mr. A. Mallia who was unable to attend the conference. Assistance to this project activity was provided by PAP consultants: Mr. G. Berlingi concerning ICAM, Mr. B. Sadler, on SEA, and Mr. G. Constantinides on resource valuation. The presentation for the Sustainable Coastal Management (SCM) Activity gave an overview of the thematic activity that was targeted for the North West Coast of Malta. This region exhibits wide habitat diversity both on land and at sea, with major economic uses competing for the limited available space on land and at sea. She briefly described the outputs of the SCM activity, mainly the review of coastal characteristics, uses and current administrative practice covered by the Coastal Profile. The SCM Activity ran in parallel with the Structure Plan Review prepared by the Planning Authority, now MEPA, and drew upon the methodology used for the formulation of the Coastal Strategy Topic Paper. The activity also based its work on the Draft North West Local Plan thus obtaining valuable input from the respective public consultation processes.

38. Reference was also made to the Strategic Environmental Assessment of the coastal policies in the Draft North West Local Plan, which was carried out by the SCM Team following an intensive training workshop. The presentation also referred to the training obtained in the technique of Resource Valuation as well as the invaluable contribution from the SPSA workshops.

39. The main benefits achieved through the implementation of this activity were as follows: (a) capacity building – within the lead agency and other government bodies; (b) introducing new

elements within the planning system; (c) increased awareness within institutions and stakeholders on coastal issues; and (d) introducing inter-departmental communication.

40. Ms. Borg then presented the main recommendations proposed within the Final Strategic Management Plan for the NW coast. The Strategic Plan has a set of policies that call for the adoption of the relevant draft North West Local Plan policies, including the coastal strategy proposed in the Structure Plan review, and a number of policies addressing the main issues identified within the NW coast by the SCM activity, as well as the other thematic activities within the CAMP "Malta" project. The establishment of an interdisciplinary Co-ordinating Committee is seen as a priority to ensure the implementation of the Strategic Management Plan for NW coast. This committee should be answerable to the Government to ensure commitment and resources.

41. A set of post-project activities were also put forward, as follows:

- Development of management plans for protected areas;
- Establishment of marine conservation areas and formulation of management plans;
- Rehabilitation and improvement of agriculture;
- Development of rehabilitation programs for spent quarries and legal dump sites;
- Development of beach management programs.

42. She concluded by presenting a list of issues that the SCM team believe are necessary to be addressed within the proposed post-project activities, namely:

- regulation of hunting and trapping,
- pollution risks,
- cultural heritage protection,
- public access and rights of way,
- enforcement,
- data collection and management,
- coastal erosion.

43. In the ensuing discussion, among others, benefits from and the appropriateness of SEA as an important tool for sustainable development planning, improved protection and use of resources, were emphasised.

Data Management

44. Ms. C. Agius, leader of the national team implementing this activity, presented the Data Management Activity. A CD containing the document was distributed to the participants. Assistance to this project activity was provided by PAP consultant, Mr. G. Berlengi. She gave a brief overview of the work and tasks undertaken while fulfilling the role as one of the umbrella activities within the MAP CAMP 'Malta' Project. The main objective was to ensure cost-effective implementation of the project by providing comprehensive data management. The DMA was carried out in three phases.

45. The first phase was mainly dedicated to the activity initialisation. The early data requirements of all the project activities were identified and the relevant datasets were collated and compiled into an Initial Project Database. Data capture and output standards were identified and documented to ensure that all the activity data conform to the same geographic co-ordinate system, scale, and data formats and structure. Technical methodologies were also outlined to determine what software and data capture tools were available and how data could be distributed to the various thematic activities.

46. The second phase of the DMA was the lengthiest and the most difficult to carry out since it depended on the outputs and schedules of all the other CAMP project groups. All the different

activities' requirements and outputs were gauged in order to assess the level of spatial awareness across the various project groups and to determine what assistance would be required for the spatial analysis of each activity's final output. All activity output data were converted to a standard data format and a metadata dictionary of the project data was compiled. Finally, the DMA provided mapping of the project output in both hard and digital formats.

47. The final phase of the project was dedicated to collating all the activity data into an Integrated Project Database available onto a distributable final project CD. A few minutes were devoted to providing a walk through of the project CD.

48. The final point emphasised during the presentation was the benefits accrued by adopting an integrated data approach for the CAMP project. These included amongst others: a reduction in the duplication of data across activities, standard data outputs, data sharing and communication between thematic activities

Presentation of the Final Integrated Project Document:

Overview of CAMP Projects

49. Mr. Trumbic, PAP/RAC Director, presented the overview of the MAP CAMP projects. He first introduced the concept of MAP CAMP explaining what it is, its basic objectives and selection criteria. He then gave a basic information on the CAMP projects implemented hitherto in Albania, Croatia, Egypt, Greece, Israel, Syria, Tunisia and Turkey emphasising the gradual development and strengthening of the CAMP and flexibility of approach taking into account the specific national and local features and needs. The conceptual approach and procedure, as approved by the Contracting Parties, are presented in the Operational Manual for CAMP. Mr. Trumbic also mentioned the on-going CAMP projects in Algeria and Lebanon, as well as those in preparation to be implemented in Cyprus, Slovenia, Spain and Morocco. With regard to the experience gained and the results obtained, the Maltese project will be beneficial for the future CAMP projects, for which there is a growing interest. So, for example, Spain has recently expressed interest in a project and offered to finance it mainly from national sources. He emphasised the importance of the post-project phase of the Maltese CAMP since it would allow for practical implementation of the major project results and further work on priority issues. At present, MAP and PAP are looking for a new generation of CAMP projects to deal with transboundary issues and problems not tackled before.

50. Mr. L. Vella emphasised the benefits for Malta from the applied CAMP approach, and expressed his belief that the post-project phase would be an opportunity for applying in practice the ICAM methodology in the Maltese coastal areas.

Presentation of information on the on-going SMAP project on marine conservation areas

51. As an example of a follow up of project activities, Mr. C. Rais, SPA/RAC Scientific Director, presented a brief information on the on-going SMAP project on MCAs in the Maltese coastal waters. The project is implemented by SPA/RAC as the operational MAP centre, in co-operation with the Italian ICRAM Centre, two ICRAM representatives attending the conference. The project deals with: detailed mapping of marine resources in the Mejjiesa - Rdum area, zoning and delimitation of areas needing protection, education and awareness campaign. A consultative workshop will be organised in March 2003, and the project will be completed in 2004.

52. Mr. Vella commented on the presentation made by Mr. Rais, the case confirming realistic opportunities for further projects as follow-up to the CAMP Project.

Innovative Elements of the Project

53. Mr. L. Vella presented the innovative elements of the project. At the regional level, CAMP Malta was an innovative project since it was the first one formulated and implemented according to the new conceptual framework adopted by MAP at the 16th Meeting of the MAP Co-ordinating Unit and RACs (Cairo, 1998). When considering the innovative elements in CAMP Malta, particular mention needs to be made of the specific tools and methodologies which were introduced for the first time in a MAP CAMP during this Project. This included:

- activities on Systemic and Prospective Sustainability Analyses (which also served as a vehicle for discussions between stakeholders, as well as ensuring sustainability within the Project);
- data management (adding value to the whole Project as well as to the work of the thematic teams);
- a thematic study of environmental health effects on tourism (an important issue for Malta and for the Mediterranean region, implemented for the first time within CAMP); and
- public/stakeholder participation (CAMP Malta took the concept of participation to a higher degree, in that the recommendations were prepared together with the stakeholders).

54. Increasing capacity building was also an important element of the Project, and training courses were held concerning Resource Valuation, Strategic Environment Assessment and Public Participation.

55. Other techniques applied during this Project include the PAP/FAO methodology for erosion assessment and mapping in the Mediterranean region, adapted by the Maltese team for use in small islands, and the application of RAC/SPA methodology for benthic habitat mapping.

56. Moreover, CAMP Malta also introduced administrative innovations:

- It had a lengthy preparatory phase and a short implementation phase which proved to be very beneficial and successful.
- An Inception Workshop, a major step towards ensuring effective integration was organised for the first time. This was effective and useful in that all the teams were set towards one common methodology. Moreover during this workshop, responsibilities for tasks to be implemented were made clear and transparent.
- The Harmonisation workshop held midway through the Project, further enhanced integration; sharing of data; keeping to timeframes and addressing any problems or difficulties immediately.

57. Mr. Pavasovic emphasised the integration concept and procedures applied as major innovative elements of the Project. He praised the role of, and contribution towards integration of project activities made by the project steering committee, the national teams, the national team leaders, and in particular the personal contribution made by Mr. L. Vella in his role of national project co-ordination, and of Ms. C. Tanti, the national project administrator. The procedure applied, in particular with regard to the integration workshop and regular meetings of national team leaders, are good examples, to be applied also in future CAMP projects.

Approach to preparation of the final integrated project document

58. Mr. L. Vella presented the approach applied by the team of authors, concerning the preparation of the final project document. In addition to the terms of reference prepared by PAP/RAC, two meetings of PAP/RAC representatives with the team of authors were held, in order to set up the conceptual basis for the formulation of the document and discuss the authors proposals. In particular, he emphasised the fact that the final document presents the stakeholders understandings of the Maltese coastal resources and their use. The final

document was made as the authors' contribution, not just by applying the cut and paste method. The integrative process was implemented by applying the ICAM methodology, with the aim for the document to be used as a demonstration action plan for the NW area. The key issues identified by the project are presented in matrices. He then commented the matrices, providing for integration of issues, presentation of conflicts and synergies. The need for clearing of watercourses was presented as an illustration of actions proposed. The gaps and emerging issues identified by the project and by the final document will have to be taken into account in future projects, as well as the strategy proposed. Finally, he presented and commented the prioritised list of actions, envisaged for the post project phase.

Synthesis of project results, key issues

59. Mr. A. Rolle presented the key issues identified by the project. The task of integrating the main findings of five thematic activities as well as three horizontal activities proved a considerable challenge to the authors of the final integrated document. The most rational and coherent solution lay in the identification of a set of Key Issues which originated from the thematic activities; supported by the horizontal activities. Each of these sectoral key issues needed to be integrated in such a way as to permit concerted actions to be taken. The utilisation of key issues was particularly advantageous since the bottom-up managerial structure which characterised CAMP Malta was reinforced. In fact these issues were elicited from the concerns and recommendations made in the thematic activities. Further benefits were that the authors of the final document did not have to agree with all of them, and that issues do not have to be exhaustive to be valid.

60. Key Issues were organised into sets of matrices for each thematic activity. These were further grouped under the three main principles of sustainable development (i.e. environmental integrity, economic feasibility, and social equity). The horizontal headings in the matrices reflected a standard logical argument: i) the manifest problem, ii) the main identifiable causes of the problem, iii) the geographical sphere of impact of the issue, iv) any specific actions which are currently addressing some aspect of the issue or some future actions that can address it. Examples from the Soil Erosion/Desertification and the Marine Conservation Area thematic activities were discussed in the presentation in order to illustrate some aspects of the methodology.

61. Two case studies of integration were also discussed. The first case dealt with the problem of clearing the watercourses which several farmers demanded. This illustrated the interactions and time frames of a potential source of conflict since environmental authorities and legislation prohibit such activities. The second case study explored the synergies that can be realised through the maintenance and rehabilitation of field terraces and their retaining rubble walls. Each of these studies was analysed through the employment of systems diagrams where specific flows and components were identified in a typical cause and effect relationship.

62. Several post-project activities were identified as priority activities following a natural pragmatic approach, i.e. reasonable time frame, highly feasible to implement and requiring low to moderate costs. A full list of the proposed projects is given in the Annex VI of the project document.

63. During the ensuing discussion, a number of issues was raised and discussed:

- the possibility of using the applied approach in other areas of the region,
- need to involve more actively the local councils in future projects of the kind, taking into account the good experience and results obtained with that respect during the implementation of the CAMP "Malta" project,
- need for further education on long-term benefits of conservation and restoration of resources and habitats,

- concerning public participation as a key issue: the need for a well structured approach, in order to achieve intensive communication, to result with interaction,
- need for a more active involvement and participation of NGOs, when dealing with the key issues identified,
- concerning SIs, further in-depth actions were recommended, to capture the dynamics of the processes and determine precise strategies for solving individual critical issues, and
- the need for a better definition of responsibility for watercourses.

64. In addition, a rich discussion was dedicated to the issue of land degradation, and in particular:

- the problem of people living on land, or owing the land, but not farming it, resulting in a marginal agriculture, abandonment of terraces and land degradation,
- the problem of and need for replenishment of the topsoil layer,
- the responsibility for maintenance and management of rubble walls,
- conflicts between farmers and MEPA, due to the legal obligation of farmers to maintain the rubble walls,
- alternative strategies to be applied; incentives versus enforcement; a reasonable combination of the two was recommended,
- need to analyse and perhaps upgrade the actual legislation concerning the management and maintenance of rubble walls, and
- finally, various aspects of erosion were commented, highlighting also the significance of wind erosion.

Proposed strategy and action plan

65. Ms. Tanti presented the strategy and action plan as proposed by the Project. She emphasised that the individual strategies and actions address problems identified during the CAMP Malta Project. A set of matrices presented by the document and the actions recommended by each thematic activity were developed to incorporate the necessary administrative and operational structures. Emphasis on the bottom-up approach was again an important element of the matrices since they reflect well the outcomes of discussions with the respective thematic teams as well as the views of the main stakeholders.

66. The matrices are grouped into specific categories which reflect ICAM categories and also facilitate comprehension by key decision makers and satisfy institutional and administrative requirements. These categories include governance (processes through which policies and plans originate), legal action (referring to the drafting of the verbalised "political" concepts), capacity building (human, material and financial resources), knowledge and information (collection, assessment, analyses and quality control of data), economic instruments (for ensuring sustainable coastal management); technological innovations (new techniques, tools and methodologies), protection of coastal resources (actions aimed at the conservation and enhancement of coastal resources).

67. The matrices also propose the responsible authorities which can potentially take up a role as lead agencies for specific areas of the strategy. They also give an indication of other institutions that may have an overlapping (perhaps conflicting) or complimentary (acting in synergy) interest in the matter. A tentative idea on the time frames and duration for the implementation of the projects as well as estimate of cost and possible funding sources are also given.

68. For each action proposed, an exercise on the feasibility for its implementation was performed. This was based on criteria adapted from the MAP/PAP CAMP Operational Guidelines and incorporates costs, the role of actors, the level of implementation, i.e. national, local, pilot area level, and implementability (i.e. whether it requires a low, or a high intensity

effort in the preparatory phase). However feasibility of addressing the problem was also taken into account. The element of the magnitude of change involved was additionally included.

Presentation of approaches to the post-project programme

69. Mr. Vella presented the elements of the post-project programme. Starting immediately after the conference, a preparatory phase will deal with the formulation of a detailed programme. He invited the teams and interested institutions to submit their respective proposals, based on the results of individual project activities. He also invited NGOs to join in.

70. Mr. Bell invited the responsible national authorities to react quickly by identifying the actions to be implemented. The hitherto experience indicates that the moment when a project is closed is a critical one, and that the follow-up activities should start almost immediately, to avoid the loss of momentum.

71. Mr. Pavasovic reminded that, according to the Project Agreement, the post-project activities should start immediately after the closure of the project. Therefore, the post-project programme should be proposed urgently by the responsible national institution, in this case MEPA, to be agreed upon with MAP, and the implementation of the programme to start by end January 2003.

Project funding strategy

72. Mr. B. Shipman, PAP consultant engaged to assist the team of authors of the final project document, presented the issue of post project funding strategy. The funding options for Post Project Activities (PPA's) were presented in terms of their priority for short, medium and long-term action. PPA's were also clustered into integrated, themed projects from which a number of key bids were identified. Parallel activities were recommended to extend the range and type of funding sources.

73. Immediate short-term action is seen as essential to maintain the core expertise of the CAMP, achieve visible results and build long-term capacity. Also, in the short term (up to 12 months) a programme of PPA's should be agreed with MAP including Malta taking a lead role in future CAMP interregional co-operations. In the short to medium term, Malta should consider becoming a METAP partner and maintain its presence in current high-level EU debates on ICZM. Key EU funding programmes for future ICAM on a bi- or multi-lateral basis were identified; these include LIFE 3rd Countries, 6th Framework RT&D, and Interreg III. In promoting partnerships, Malta should consider itself as a regional centre of excellence in ICAM.

74. Long-term interventions to change practices, build capacity or improve infrastructure were identified, particularly relating to the management of land and water resources. Long-term 'durable' funding for the core functions of ICAM should replace the current stop-go, project-based approach. A single, integrated agri-environment programme was proposed to achieve CAMP objectives through a targeted and voluntary financial incentive system. This combines the protection and restoration of rubble walls, sustainable water use practices, aquifer recharge and the maintenance of biodiversity. The measures could also help support farm viability. Models of land stewardship from the USA, France and the UK were also put forward for consideration in the long term.

75. The ensuing discussion was dedicated to a number of funding aspects and prospectives:

- prerequisites for approaching various EU funding sources,
- participation of NGOs in various EU programmes,
- criteria of the INTERREG programme,
- counterpart (national) contribution requested by individual programmes, and
- eligibility of Malta for various funding sources.

Mr. Shipman and the MAP representatives provided answers to question raised, as appropriate.

Proposal for the establishment of the Coastal Resources Advisory Board (CRAB), and for the adoption of the Coastal Declaration

76. The Chairman presented the proposal for CRAB, as enclosed in the conference documents. He commented on its envisaged structure and role to act as a professional and scientific body, providing advice to national institutions concerning coastal resources. During the implementation of the project, the need for such a body was identified and discussed. In fact this was one of the proposed post-project activities which had already secured Ministerial approval. Mr Vella gave the main functions of this Advisory Board, which should, among others, ensure the sustainable use of coastal resources, provide for coherent spatial planning, promote improved stakeholder understanding and decision making, initiate and/or support research programmes and act as an interface with the National Commission for Sustainable Development whilst acting as a Centre of Excellence on coastal matters.

77. Furthermore, a draft workplan for the setting up and functioning of this Board was given. The proposed members of this Board include stakeholders (e.g. Local Councils, NGOs) and team members who actively participated in the CAMP Malta Project.

78. Questions were raised on the structure of CRAB, details of mandate and on the institutional framework within the present governance system. Answers and explanation were provided by the Chairman.

79. The Chairman then presented the proposal for adoption of the Coastal Declaration. The Coastal Declaration, drawn up by a team of authors, was given to the participants of the Conference for their endorsement. This declaration is set out according to the principles of sustainable development (environmental integrity, social equity and economic viability), as well as the principles laid out in the Rio Declaration (in particular Chapter 17 of the Agenda 21).

80. The Coastal Declaration for the Maltese Islands refers to the coast as an invaluable natural resource which is under great pressure and which has sociological, cultural and psychological importance. The Maltese coast is probably the last remaining "open space" in the Islands. Due to this, its protection and conservation is of utmost importance and urgency. The main aim of the Declaration is to provide guidance for the proper management of the coast of the Maltese Islands, following the main principles of ICAM.

81. After the presentation of the Declaration point by point, and short comments and discussion on various points, the participants adopted the declaration, enclosed as Annex VI to this report. Furthermore, the conference recommended to MEPA to publish and disseminate the declaration, and in particular to present it to all relevant national authorities, institutions and stakeholders.

Closure of the Conference

82. The Chairman presented a draft of the conference Conclusions and Recommendations prepared by the secretariat on the basis of the presentations made and discussions held at the conference. The draft text was presented and discussed point by point, and with some minor amendments adopted, as enclosed in the Annex VI to this report.

83. The Chairman expressed his satisfaction with the results of the conference which had confirmed the results and success of the implemented MAP CAMP "Malta" Project. He thanked all the participants for their contributions to the conference results. He thanked once more, on behalf of the Maltese authorities and institutions, MAP and PAP/RAC, Messrs. Trumbic and Pavasovic, and all the MAP staff and consultants involved, for their support and assistance

provided during the Project. Finally, he thanked all the national institutions and teams involved, for the participation in and dedicated contribution to the Project.

84. Mr. Trumbic, speaking on behalf of MAP and PAP/RAC, stated that the CAMP "Malta" Project was a breakthrough and one of the most remarkable MAP CAMP projects. Its results will not only be beneficial for the country, but will also be used as example for the on-going MAP CAMP projects and those in preparation. Finally, he thanked the participants for their contributions to the conference results, and the Chairman for his efficient chairing of the meeting.

85. The Chairman declared the conference closed on November 29, at 16.30 hours.

Annex I

List of Participants

Omitted from TRS to save space

Annex II

Speech by Mr. George Pullicino, the Hon. Parliamentary Secretary for the Environment.

Dear Deputy co-ordinator of MAP
Director of Priority Actions Programme, Regional Activity Centre

Dear participants, ladies and gentlemen.

It is customary to start such speeches by stating that the speaker is honoured to have been invited to address the meeting.

In may case I will depart slightly from the 'protocol' by saying that I am disappointed to come in so late to appreciate to the fullest extent the great and extensive work, and the new ground covered by the Coastal Area Management Programme which has been in progress for the past two years.

I have had the opportunity to read the final integrate report, and some other documents produced throughout this CAMP, and I have also had the benefit of a presentation on the project, and I must express my general admiration for what has been carried out. The outputs from CAMP Malta are quite impressive and note worthy.

All this could not have been carried out without a lot of effort from the participants and from the various stakeholders who participated, many of whom are in this room.

Certainly nothing would have been done without the assistance of MAP acting through its regional activity Centre PAP in Split.

I wish, through Mr. Hoballah, to convey my tanks to MAP, and I also wish to thank Mr. Ivica Trumbic the Director of PAP for their efforts in making CAMP Malta happen.

At this point I also wish to thank Mr. Arsen Pavasovic, consultant with PAP for his great patience in co-ordinating the project, for his helpful advise and suggestions and for his understanding and smoothing out the many difficulties which I am sure must have cropped up during the past years. His efforts in this respect are acknowledged with heartfelt thanks by all the participants including especially (I am told) Louis Vella and Christine Tanti.

A number of areas within CAMP Malta have impressed me.

Without in any way trying to prioritise these areas, let me mention the activity connected with systemic sustainability analyses which has been received extremely well and has introduced new knowledge on the formulation of SI's amongst a number of key persons in Malta. Some of these are members of the National Commission for Sustainable Development, with which I have a considerable involvement. My thanks to Blue Plan and to its consultants Dr. Simon Bell who is present here, and to his colleague Dr. Stephen Morse who could not make it to Malta this time.

I must also express my great interest in the activity relating to Soil Erosion and Desertification Control. It has served to highlight an important environmental problem in our country and has also made valuable suggestions for measuring its extent and for dealing with it. The importance of restoring our rubble walls, amongst other suggestions needs to become one of the country's priorities.

The other subject which caught my attention was the activity dealing with the study of the environmental health impacts on tourism which was supported by the WHO office in MAP. This is a very important issue in Malta, and I am sure it ought to receive more importance in the tourist destinations all around the Mediterranean. This activity is in complete resonance with the policies of my ministry. On the bases and outcomes of this thematic activity we have prepared project proposals to improve the beaches in Malta. On this subject I have made, on behalf of Government a commitment at Johannesburg to put into practice effective integrated coastal areas management.

Another project which is of great interest, and one on which the Environment Protection Directorate has long been working concerns the designation of one or more Marine conservation areas. It is essential that we give some greater or lesser degree of protection to a number of marine sites. These could be wholly in the sea or encompass a land and marine contiguous areas. An appropriate degree of protection will ensure that threatened species are conserved for future generations and also that the areas surrounding such protected areas will be enriched in commercial species, through 'overflow' from the protected zone.

I was pleased to learn that on the bases on the work carried out in CAMP, we are participating in a SMAP project under the guidance of RAC / SPA. Here I must thank the Director of the Tunis Centre for the opportunity to participate in this regional project.

I was also impressed by the advances and innovations made, in public participation, by some of the thematic groups, in their efforts to seek closer contacts with stakeholders. I believe that this is the closest yet, we have got to in Malta, of actually preparing recommendations or action together with stakeholders. This soft introduction to a bottom up approach to public involvement needs to be further cultivated.

I also wish to place particular importance on the section of the report, where key issues were identified, in turn leading to follow up activities to the CAMP. The activities mentioned in outline should be refined and implemented without undue delays. I trust that MEPA which is now a full and main partner in CAMP will take the lead, not only in the finalisation of the plans but also in the endorsement with the required permits and authorisations for plans and projects to be translated into action within specified timeframes for their completion.

I encourage all the entities who have participated in CAMP to take a lead each acting within its brief but with a common aim, which is to bringing about the required conditions for a truly sustainable development and environmental improvement to Malta. There are many ideas suggested in the document, and these can be taken up within your respective briefs as most appropriate.

Certainly you should continue to harmonise your day to day work, since in this manner the greatest environmental benefits can be achieved.

On the part of the Ministry I will nominate an advisory board to oversee the future continuation of the Integrated Management of Coastal Areas and the implementation of these projects. Its main function will be to continue the process of dialogue which has characterised this CAMP. It will assist and facilitate the partners, including stakeholders, in bringing these projects to the implementation stage as quickly as possible. It could also encourage the partners to expand the ideas initiated in this report, with a view to either extend them to other parts of the country, or to come up with new projects.

I am very keen, if not anxious to now translate these plans and studies into concrete action. I want the public to start to see that the environment is truly starting to improve. A lot naturally depends on the available finances which can be put at the disposal of the projects. My government is making its part as can be deduced from the budget speech announced by the Minister of Finance last Monday. Some other funds could also be made available locally through

the Environmental Fund of MEPA. However, we also need to consider the external funding possibilities which are open to us now, or later on when we will form part of an enlarged European Union.

I am pleased to note that the final integrated document also deals with the funding possibilities which can be tapped to implement the suggested action plan.

Ladies and Gentlemen I will unfortunately have to leave rather early in this conference, since my parliamentary duties call me. You will appreciate that the protection of the environment is a shared responsibility which is shared between the public and experts and that also have a part to perform in parliament.

I hope to rejoin the meeting at a later time, and till then I wish you a profitable outcome to your deliberations.

I wish once again to thank MAP and PAP for the excellent work which has been carried out by them in Malta, and I wish to express my sincere hope that this close collaboration will continue in the future through more projects in Malta and through further collaboration and mutual support of MAP, PAP and the other Centres in the region.

Thank you.

Annex III

Speech by Mr. A. Hoballah, the MAP Deputy Co-ordinator

Your Excellency,

On behalf of UNEP/MAP, its Co-ordinating Unit and its Regional Activity Centres, we first would like to take this opportunity to thank you for your hospitality and for the kind and efficient support provided by your team, in particular Mr. Louis Vella and Ms. Christine Tanti;

Your Excellency,

Dear Colleagues,

Ladies and Gentlemen,

Sustainable Development concept and approach have framed and guided most of the global, regional, national and local environment and development activities. And it is obvious that SD in the Med. Region depends mainly on the efficient management of its coastal regions that generally constitute fragile ecosystems; moreover, they are subject to various pressures deriving from concentration of population, intensive use of resources, increasing economic activities, production and consumption patterns, tourism, wastes, infrastructure and transport systems.

This explains how important is the CZM component in the activities of the MAP, which progressively became one of the most important pillars of MAP's programme of work. Considering the Mediterranean geographic, natural and human context, controlling and preventing marine and coastal pollution could not be seriously conceived and efficiently tackled without a sustainable management of the coastal regions. And in most Med. Countries, the management of these coastal regions constitutes the cornerstone for national SD.

Considering the crucial importance of these coastal regions that have had a key role in the development of the Mediterranean civilisations, cultures and commercial relations in the past as well as in the present, the Contracting Parties to the Barcelona Convention have since 1975 given due consideration to the management of coastal regions not only through the Convention but also by establishing the Regional activity Centres of the Blue Plan and of the Priority Actions Programme in 1977, together with the Regional Activity Centre for the Specially Protected Areas in 1982. This interest was further confirmed by the launching of the CAMP activities and the revision in 1995 of the Barcelona Convention so as to explicitly embrace the Coastal Regions.

This interest was further confirmed by the Mediterranean Commission on Sustainable Development that selected among the priority issues of its programme of work the "Integrated and Sustainable Management of Coastal Regions" but also the "Management of Water Demand", the "Tourism and SD", the "Sustainable Management of Urban Development" and more recently the "Local Governance and SD". For all these important issues and others of high interest for the coastal regions such as agriculture, rural development and waste management, the CAMP approach constitutes an excellent learning process and practical exercise for both MAP and for the beneficiary Countries. In this context and thanks to its excellent preparatory process and efficient implementation, CAMP "Malta" constitutes a very good pilot and demonstration project.

The encouraging results obtained so far through a clear commitment since the beginning from the Maltese Authorities with an efficient co-operation between concerned teams from Malta and UNEP/MAP through its various RACs, these encouraging results should now be followed by an implementation process with necessary technical and institutional means.

Naturally complex, coastal management always calls for trade-offs and balance between economic, social and environmental concerns for an economic development and a land use management that avoid and prevent irreversibility risks and promote solid basis for SD. It is then first and foremost a Governance issue that, beyond the analyses of status and pressures, of stakes and responses, requires the identification of concerned actors, national and local, public and private, with their respective responsibilities as partners for the future of a concerned common region.

This was clearly stated in the recent Plan of Implementation of the World Summit on Sustainable Development but also by the Contracting Parties in their Med. Declaration for the WSSD in which they agreed that “actions at ...all levels with the collaboration between all actors are needed in order to protect effectively the quality of the unique Mediterranean environment, to facilitate integrated management of coastal areas, to promote integrated management of water resources ..., to sustain the precious biodiversity of the region and to combat desertification and land use degradation efficiently”. This is also in perfect harmony with the EU Strategy on ICZM.

At their last meeting in November 2001 in Monaco, the CP have reiterated the importance of the sustainable management of coastal regions, in particular through the CAMP projects with the preparation of adequate legal instruments at regional and national levels. This follows the recommendations of the MCSD on coastal region issues, calling for:

- The improvement and strengthening of institutional mechanisms, in particular the inter-ministerial co-operation structures;
- The establishment and implementation of appropriate legal instruments;
- The implementation of specific measures and regulatory mechanisms for the protection of areas of special interest as well as the control and prevention of urban and tourism impacts, etc;
- The promotion of the participatory approach with the active involvement of local actors and civil society;

Without pretending for solving all the problems, the integrated and sustainable management of coastal regions through CAMPs could constitute, if efficiently implemented, a valuable contribution to the sustainable development of Malta.

The “Malta” CAMP, concerning primarily the Northwest region but that could be considered as a pilot and demonstration project for the rest of the country, has dealt with four issues of major interest for the country: Marine Conservation Areas, Integrated Water Resources Management, Soil Erosion and Desertification, and Tourism and Health; they were all analysed through the three key pillars of SD, environmental integrity, economic viability and social equity with, in each case, a set of interesting proposals for further consideration by concerned authorities.

To these three pillars of SD, we should add the Governance one that has been considered through the Participatory Approach, the Systemic and Prospective Sustainability Analysis, the Partnership Assessment, the Decision-Making Process and the Institutional Building. This wealth of information and recommendations, with a team of qualified experts and committed institutions and partners, provides solid basis for preparation an implementation and follow up strategy to be structured around a consistent legal framework and an adequate body with appropriate means for the sustainable management of the coastal regions of Malta. UNEP/MAP, with its capacities and means, stands with Malta, and is willing to accompany concerned authorities in implementing and following up the CAMP proposals, making it an example to other countries and why not a “success story” in the Mediterranean.

Thank you for your attention.

Annex IV

Agenda

Thursday, November 28

First session

- | | |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 08.30-09.00 | Registration of participants |
| 09.00-10.00 | Opening of the Conference and welcome addresses:
Rules of procedure and objectives of the Conference
Election of officers (Chairman, Vice Chairman, Rapporteur, Secretary)
Adoption of the Conference Agenda
Overview of CAMP |

Second session

Presentation of individual project activities

- | | |
|-------------|--------------------------------------------------|
| 10.30-11.00 | Soil Erosion/Desertification Control Management |
| 11.00-11.30 | Marine Conservation Areas |
| 11.30-12.00 | Tourism and Health |
| 12.00-12.30 | Systemic and Prospective Sustainability Analysis |

Third session

Presentation of individual project activities (cont.)

- | | |
|-------------|----------------------------------------|
| 14.00-14.30 | Sustainable Coastal Management |
| 14.30-15.00 | Integrated Water Resources Management. |
| 15.30-16.00 | Data Management |
| 16.00-16.30 | General discussion/conclusions |

Friday, November 29

Fourth session

Presentation of the Final Integrated Project Document

- | | |
|-------------|---------------------------------------------------------------------------------------|
| 09.00-09.45 | Overview of CAMP Projects in other countries |
| 09:45-09.50 | Presentation of information on the on-going SMAP project on Marine Conservation Areas |
| 09.50-10.15 | Innovative elements and actions implemented in CAMP Malta |
| 10.15-10.30 | Introduction to the Final Integrated Project Document |
| 11.00-12.00 | Synthesis of project results – Key Issues |
| 12.00-12.30 | Discussion |
| 14.00-14.30 | Presentation of Proposed Strategy/Action Plan |
| 14.30-15.00 | Post-project Programme |
| 15.00-15.30 | Proposed funding strategy |
| 15.30-16.00 | Presentation on Coastal Resources Advisory Board and Coastal Declaration |
| 16:00 | Concluding statements and closure of the Conference |

Annex V

Coastal Declaration for Malta

On the bases of the general deliberations resulting from the CAMP Malta project, the following declaration is endorsed as the **national vision** for the sustainable use and management of Malta's coastal areas:-

Coastal Zone Declaration.

Reaffirming our commitment made in RIO¹, and in Chapter 17 of Agenda 21 entitled 'Protection of the Oceans, all kinds of seas, including enclosed and semi-enclosed seas and coastal areas, and protection, rational use and development of their living resources'.

Recognising that for Maltese citizens, the coastal zone is the main and last remaining "open space" and that it has considerable sociological, cultural and psychological importance, its accessibility for recreational and leisure activities thus needs to be ensured and conserved, and where possible and practical, enhanced.

Recognising also that the coastal zone is an invaluable natural resource which is under great pressure resulting from demographic and lifestyle pressures, and that accessibility and use need to be managed in order to ensure a sustainable utilisation of the many material and living resources to be found therein.

A balance between material prosperity, social development, spiritual and cultural fulfilment, and ecological integrity, should be sought in the interests of all Maltese.

Efforts to ensure that Maltese citizens enjoy the coast in a spirit of community and shared responsibility will be initiated.

Efforts should be made to ensure that all Maltese will accept that the coastal zone is to be enjoyed in a spirit of community and shared responsibility, and thus they need to take responsibility for the health and sustainability of the environment, particularly for the coast, in a spirit of stewardship and caring.

We emphasise the need to agree upon a common understanding of the "coastal zone" in functional terms, and of a sense of vision of how we wish the coast to meet the needs of current and future generations, as well as the need for broad endorsement and acceptance of ICZM as a pro-active tool to facilitate appropriate and sustainable development of coastal areas and resources.

Guidance for the proper management of the Maltese coast shall be provided to allow the correct and appropriate management of coastal areas, in a way that current and future generations will benefit.

We therefor commit ourselves to the management of our coast in a way that benefits present and future generations, and that international, national and local obligations are honoured.

We support the following set of principles which should guide our actions and set the goals and objectives for our Coastal Policy.

¹ RIO DECLARATION ON ENVIRONMENT AND DEVELOPMENT
Special reference is made to principles 3, 4, 5, 10, 11, 15, 16, 17, 24 and 25.

Principles for an Integrated Coastal Area Management Plan

To achieve the ideal of a truly sustainable coastal development, the following principles for integrated coastal management are proposed:

1. **National heritage.** The coast should be formally and legally recognised as an outstanding national and global heritage.
2. **Economic development.** Economic development opportunities in the coastal zone should be exploited in a sustainable manner to meet human needs and to promote human well-being.
3. **Social equity.** Coastal management efforts should ensure that all people, including future generations, are treated with dignity, fairness and justice.
4. **Inclusivity.** Coastal management shall be carried out in a socially inclusive manner, having sought the views and opinions of all parties, including stakeholder, non-governmental organisations and the general public.
5. **Ecological integrity.** The diversity, health and productivity of coastal ecosystems should be maintained and enhanced.
6. **Holism.** The coast should be treated as an indivisible system, recognising the inter-relationships between coastal users and ecosystems and between the land and sea.
7. **Risk-minimisation and precautionary principle.** Coastal management efforts should adopt a risk-minimisation and a precautionary approach under conditions of scientific and economic uncertainty.
8. **Duty of care.** Coastal management is a shared responsibility. All people should be responsible for the consequences of their actions, and have the duty to act with care to avoid damage to others and to the coastal environment.
9. **Co-ordination and integration.** Coastal management efforts should be co-ordinated and integrated, and conducted in an open, inclusive and transparent manner.

END of DECLARATION

Annex VI

Conclusions and Recommendations of the Conference

I. Conclusions

1. The results achieved by the project as a whole and by its individual thematic activities represent an important contribution towards protection and rational use of national resources, sustainable development and integrated coastal management in the country.
2. The ICAM methodology, as proposed by MAP and as adapted to the specific Maltese and local conditions was endorsed and highly appreciated as a contribution to national practice.
3. The basic approach applied by the project was innovative and task oriented, resulting with concrete actions for implementation.
4. The structure of the project facilitated the bottom up approach and a strong participatory component, with project actions and results driven by stakeholders.
5. The concept of the Coastal Resources Advisory Board (CRAB) was perceived and endorsed as a body to facilitate integrated management towards sustainable development of coastal and marine areas, and to facilitate the implementation approach applied by the project was innovative and task oriented, resulting with concrete actions for implementation.
6. The structure of the project facilitated the bottom up approach and a strong participatory component, with project actions and results driven by stakeholders.
7. The concept of the Coastal Resources Advisory Board (CRAB) was perceived and endorsed as a body to facilitate integrated management towards sustainable development of coastal and marine areas, and to facilitate the implementation of their dedicated efforts, contribution and the innovative results achieved.
8. Finally, the Conference emphasises the fact that the use of project results and introduction into national practices of innovative methodologies and tools will require concerted and well structured efforts by relevant national authorities, as well as further support and assistance by MAP, in particular during the implementation of the post project phase.

II. Recommendations

1. In order to maintain the momentum achieved by the project, the programme for follow up activities, in particular for the post project phase envisaged by the Project Agreement, should be formulated and agreed upon with MAP within a reasonably short time and adopted. The implementation should start during the first quarter of 2003.

The conference recommends to the national institutions to seek to include appropriate funding from national and other sources, to facilitate the continuation of the post project activities. They should provide direct funding and endorsement for multilateral and bi-lateral financing by prioritising the post project proposals.

Further in-depth studies on use of economic instruments for coastal zone management with emphasis on concrete Maltese conditions and needs, should be implemented.

2. The Ministry for the Environment is invited to establish Coastal Resources Advisory Board, and provide means for its efficient and effective operation.

3. MEPA should secure the necessary technical support and expertise for a long-term implementation of project proposals and recommendations and secure durable funding for sustainable coastal area management.

4. The Conference recommends that the ICAM Declaration be disseminated to the general public, stakeholders and authorities and institutions at national and local levels; and MEPA might consider the opportunity to adopt it in the present or adapted version as a bases for the preparation appropriate legal instruments on integrated coastal area management.

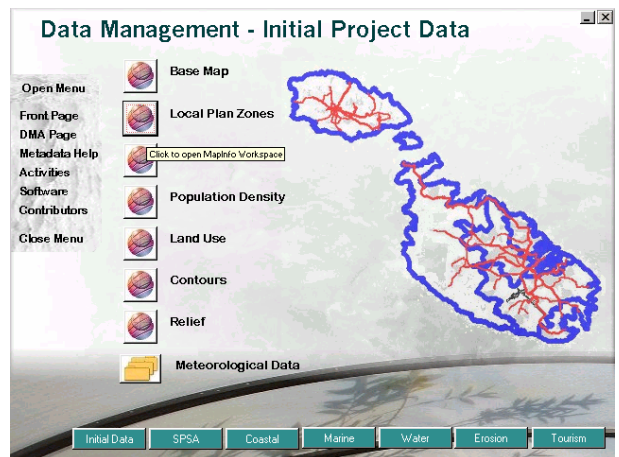
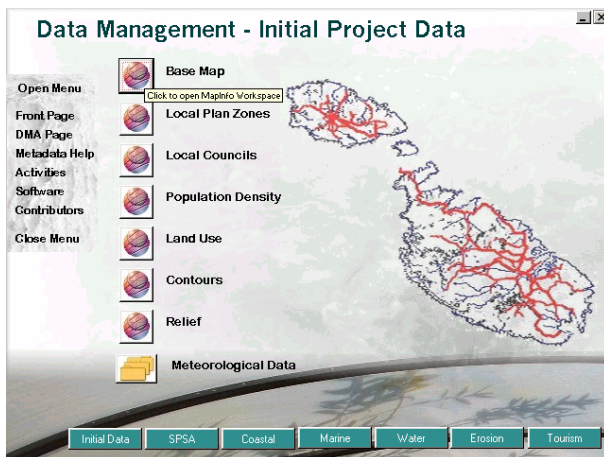
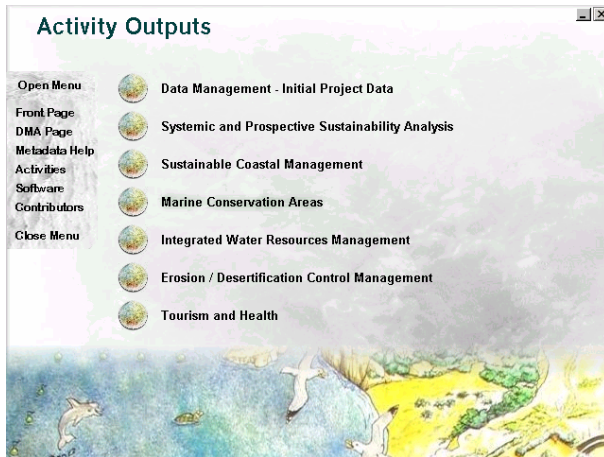
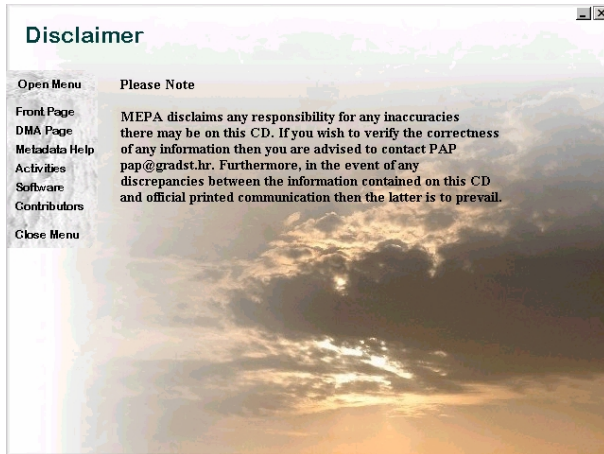
5. The Conference recommends the wide dissemination amongst the general public stakeholders and institutions, of major outputs of the project. These should be taken into account when defining and deciding on future coastal and marine related policies and projects.

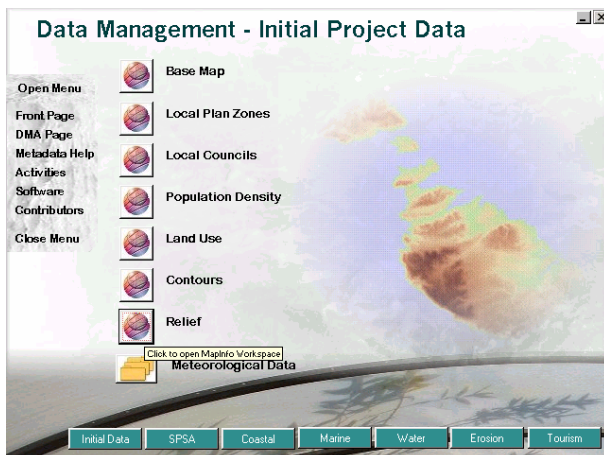
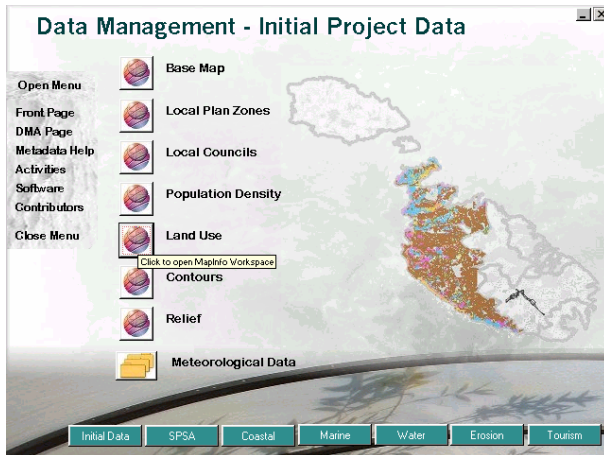
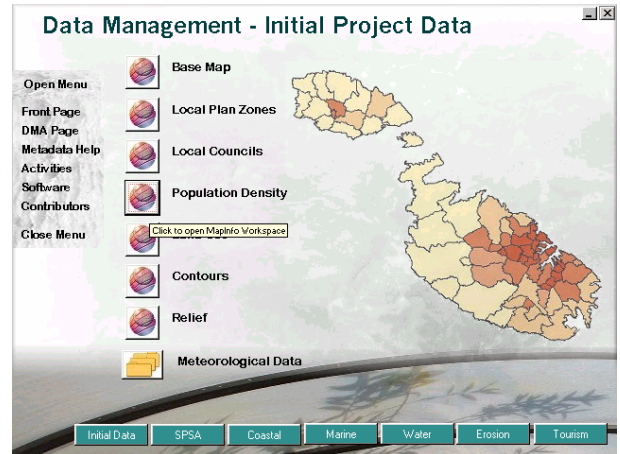
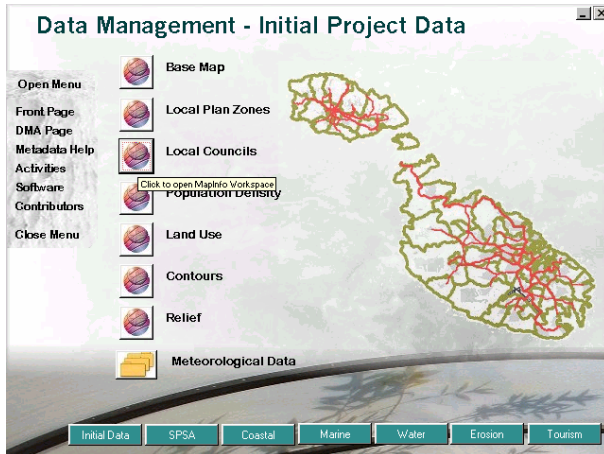
6. Concerning issues of general nature highlighted by the project, and those related to innovative elements, the Conference recommends in particular monitoring of sustainability, using the Sustainability Indicators identified by the SPSA thematic activity with the involvement of all national teams, to be established as a regular programme, and the needed prerequisites to be met as appropriate.

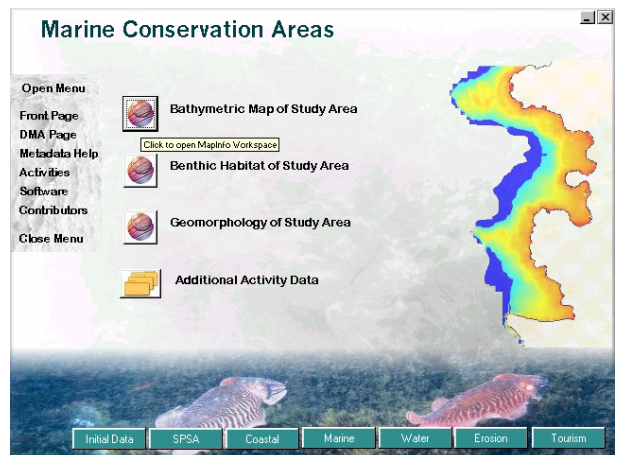
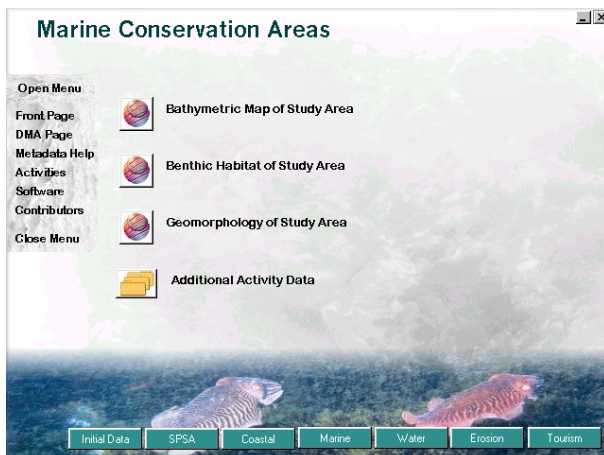
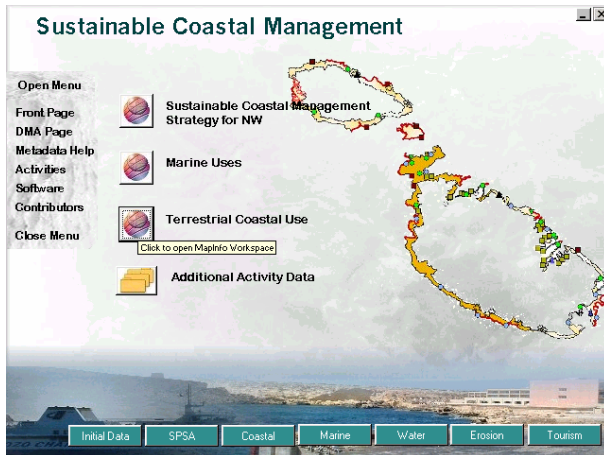
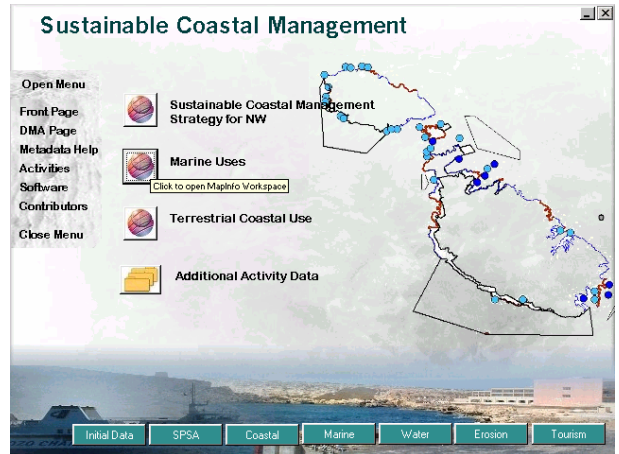
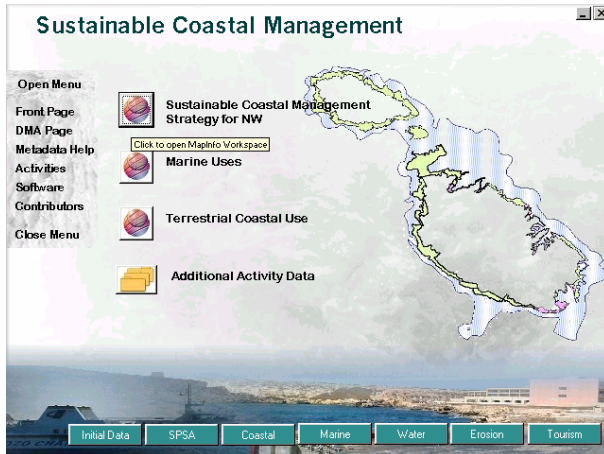


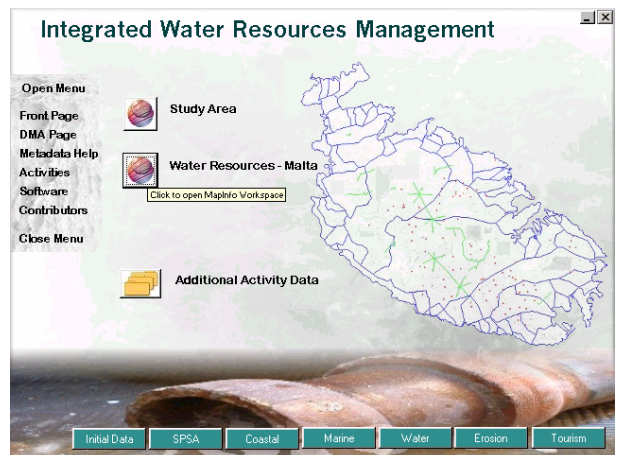
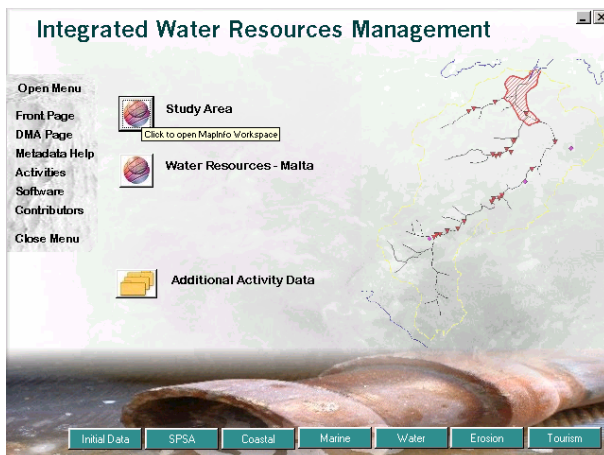
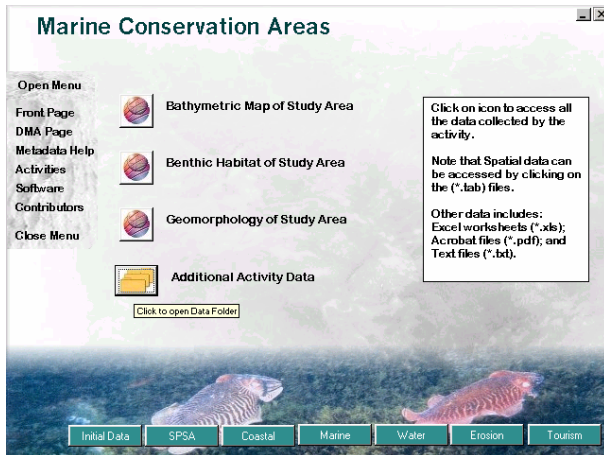
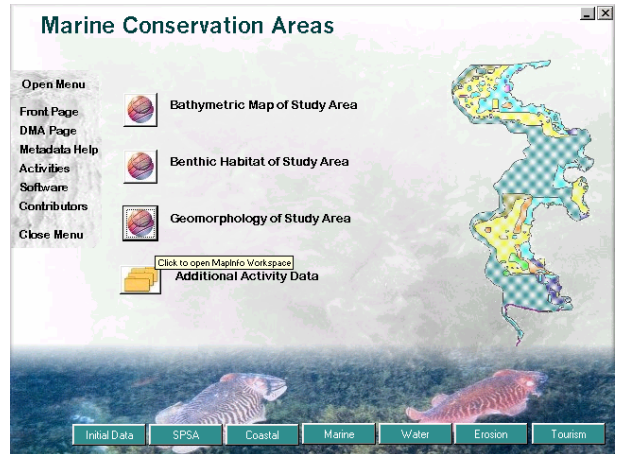
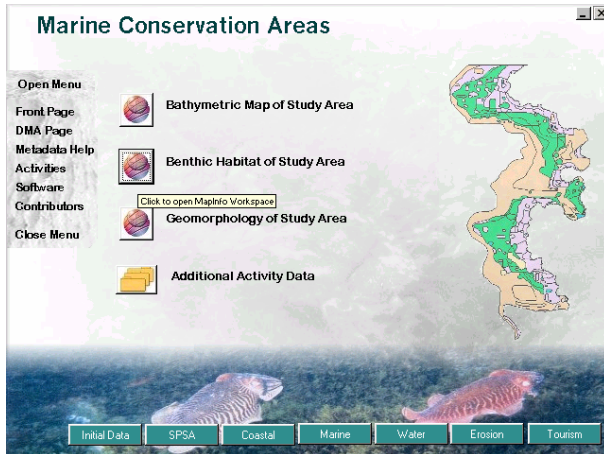
Final Integrated Project Database
Data Management Activity











Integrated Water Resources Management

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Study Area

Water Resources - Malta

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 Excel worksheets (*.xls);
 Acrobat files (*.pdf); and
 Text files (*.txt).

Initial Data | SPSA | Coastal | Marine | Water | Erosion | Tourism

Erosion / Desertification Control Management

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Slope Classification

Soil Protection Management

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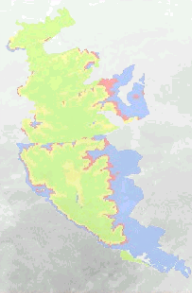
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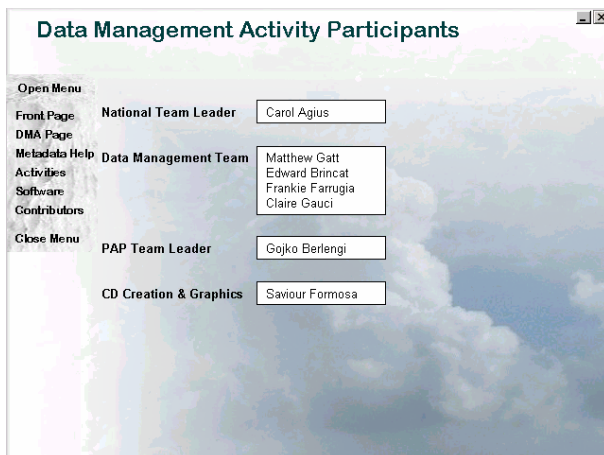
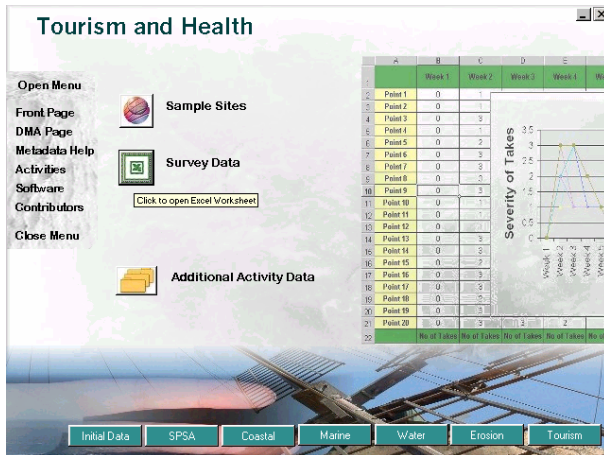
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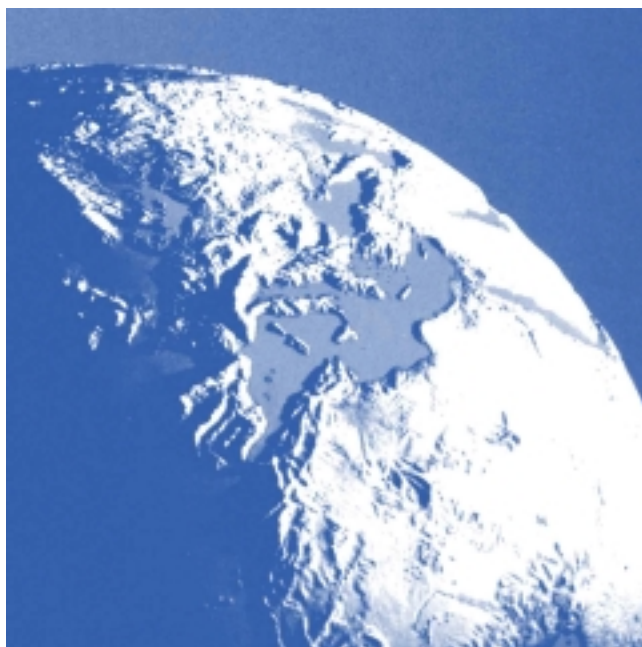
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**FINAL REPORT ON
THE SYSTEMIC AND PROSPECTIVE
SUSTAINABILITY ANALYSIS PROJECT
WITHIN CAMP « MALTA »**



Ministry for
Economic
Services
Malta

Blue Plan
Regional Activity Centre

Sophia Antipolis,
April 2002

The activity described in this document is undertaken in co-operation between Maltese Authorities (Ministry for Economic Services, Planning Authority, National Statistics Office, Environment Protection Department and Economic Policy Division) and Mediterranean Action Plan-Blue Plan Regional Activity Centre.

Report prepared by

**Anthony Ellul,
Planning Authority**

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A final thanks goes to Mme. Elisabeth Coudert from Blue Plan who co-ordinated the whole project and her Director, Mr. Guillaume Benoit, for the support given by Blue Plan and to Dr. Simon Bell, Blue Plan Lead Consultant, and Dr. Steve Morse, Blue Plan Consultant, for their direction in the whole exercise and the interesting workshop sessions which, as all agree, were FUN.

Introduction

The Mediterranean Action Plan (MAP) is one of the regional plans of the Regional Seas Programme of the United Nations Environment Programme (UNEP). There are currently 12 Regional Action Plans being implemented around the world. The legal basis of MAP, which started in 1975, is the Convention for the Protection of the Mediterranean Sea against Pollution or, as it is more popularly known, the Barcelona Convention, and its related protocols. The Convention was revised in 1995 and all Mediterranean Coastal states plus the European Community are the Contracting Parties to the Convention.

Since 1995 MAP has been working on the Phase II Action Plan and on the Priority Fields of Activities for the Environment and development in the Mediterranean basin (1996 – 2005). These priority fields are related to the following aspects:

- a) integration of environment and development;
- b) integrated management of resources;
- c) integrated management of coastal areas;
- d) activities of particular importance for environment protection and sustainable development;
- e) assessment, prevention, and control of marine pollution;
- f) conservation of nature, landscape and sites.

The institutional structure of MAP consists of the MAP Co-ordinating Unit – MEDU in Athens and its 6 Regional Activity Centres amongst which the Blue Plan Regional Activity Centre (BP/RAC) in Sophia Antipolis, France and the Priority Actions Programme Regional Activity centre (PAP/RAC) in Split, Croatia. These two Regional Activity Centres are actively involved in the Coastal Areas Management Programme – CAMP - (Malta) Project with the Blue Plan/RAC piloting the Systemic and Prospective Sustainability Analysis Activity.

Blue Plan Regional Activity Centre activities focus on systemic and prospective studies in order to evaluate current situation before exploring the possible futures of relationship between development and environment as well as on observation through indicators of progress towards sustainable development in the Mediterranean. In addition, Blue Plan has also a mandate to assist Mediterranean countries in addressing up sustainable development problems and in this task the development of indicators for sustainable development play an important role. Blue Plan worked with METAP on Environmental Performance Indicators and with the Mediterranean Commission for Sustainable Development (MCSDD) on indicators for sustainable development. The work with METAP resulted in the identification of 34 Environmental Performance Indicators relating to air, solid waste, water resources and pollution & air quality. The work on sustainability indicators with MCSDD produced a common set of 130 Mediterranean Sustainable Development Indicators. The report of this work was published in 2000.

It is in this context that Blue Plan sought to introduce the Systemic Sustainability Analysis (SSA) based on its previous work and on the approach developed by Dr. Simon Bell and Dr. Steve Morse, in the formulation of sustainable development indicators for the various projects that formed part of the Coastal Areas Management Programme (CAMP) Malta Project. The CAMP is the MAP Programme for sustainable coastal management, integrating environmental concerns with development planning. The conceptual framework of CAMP is based on the principles of sustainable development and integrated coastal area management.

The SSA project is one of three cross-cutting projects, which assisted the five individual thematic projects, which formed part of the CAMP (Malta) Project. The individual thematic projects are:

1. Sustainable Coastal Management
2. Marine Conservation Areas
3. Integrated Water Resources Management
4. Erosion/Desertification Control Management
5. Tourism and Health.

The other two cross-cutting activities are:

1. Participatory Programme
2. Data Management.

The Systemic Sustainability Analysis (SSA) activity is co-ordinated by Blue Plan, with the assistance of two consultants and a local team composed of representatives from the following Government agencies – Ministry for Economic Services, Planning Authority, Environment Protection Department, National Statistics Office and the Economic Policy Division.

The SSA activity consisted of five workshops during which participants, which included team members of the various thematic projects and cross-cutting projects, were taken through the various stages of the process. The approach was an interactive one during which the different participants were given the opportunity to work in groups adapting the process to their own individual thematic projects. The outcome of the various workshops is presented in the workshop reports, which are reproduced as appendices to this report.

This report will primarily summarise the achievements from the workshop sessions and seek to relate the findings to the sustainable development of the North West of Malta, which was the area chosen for the CAMP Malta Project, and the significance of this to the sustainable development of the Maltese Islands. A final section will outline the main lessons learned through this experience and which would prove useful for the implementation of this approach in other countries or regions.

Tasks and objectives

The main tasks to be implemented within the SSA are the following:

- identification and agreement on the system, the stakeholders and the main sustainability indicators;
- participatory development of the systemic sustainability analysis with description and assessment of the system by main indicators;
- provision of inputs to final Project documents and post project activities (level of sustainability, critical points, future activities toward sustainability).

The main objectives of this activity are:

- to contribute to efforts towards a sustainable development of the island, and in particular of its north-west area by preparing a set of sustainability indicators and a systemic sustainability analysis, to be made on the primary basis of a description and assessment of the level of sustainability by consideration of the main indicators and the process which generated them;
- to introduce and apply the systemic sustainability analysis as a specific tool for empowering sustainable management, in this case coastal and marine areas;
- to contribute to the preparation of comprehensive integrated final Project documents, by presenting significant analysis; and,
- to create inputs of interest for the programme and activities of the Mediterranean Commission for Sustainable Development.

As stated previously these tasks and objectives were achieved through the series of workshops conducted by the consultants, meetings with stakeholders and discussions between the local team members together with members of the various thematic and cross cutting projects. The intensive group work that constituted most of the workshop sessions and the sharing of experiences with stakeholders proved to be the salient elements of this project which besides a learning experience for the local teams provided Blue Plan and the consultants with a basis on which to test the approach in a particular context and determine its application. The next section will explain the approach identifying the main phases through the use of examples from the various workshop sessions.

The SPSA methodology

Before outlining the methodology, it is important to state at this early stage that the Systemic Sustainability Analysis (SSA) project has subsequently been revised and is now being referred to as the Systemic and Prospective Sustainability Analysis (SPSA) project. Thus, throughout the rest of the report the project will be referred to as the SPSA.

The basis of the SPSA is three-fold - systemic analysis, the concept of sustainability and prospective. It is these pillars that steer the approach. The SPSA combines the main themes of systemic analysis, core elements from sustainability indicators and long term visions, i.e. it allows a team engaged in analysis to explore, describe and assess the level of sustainability of an agreed system by the use of indicators, in the past, present and future.

SPSA provides a global approach and has a dynamic characteristic because it takes into account the relations between the indicators, which describe the elements of the system and their interactions. The system is represented by indicators chosen by the team of participatory stakeholders engaged in the SPSA – it is decided from the perspective of the contributing stakeholders. The external context is considered in term of beneficial or harmful influence. The level of sustainability is assessed by the team according to a deep understanding of the relevance and interpretation of the combined messages of the selected sustainability indicators.

Systemic analysis, sustainable development and prospective

It is appropriate at this stage to explain in brief the thinking behind systemic analysis, the concept of sustainable development and prospective. The Blue Plan's definition of a system is the following – ***a system is an intellectual construction, for a certain purpose, constituted by chosen elements in dynamic interaction in order to describe and represent a complex reality or phenomenon.*** Figure 1 is an overall diagram of the main components of the environment-development system, designed by Blue Plan for the purpose of making Mediterranean scenarios¹.

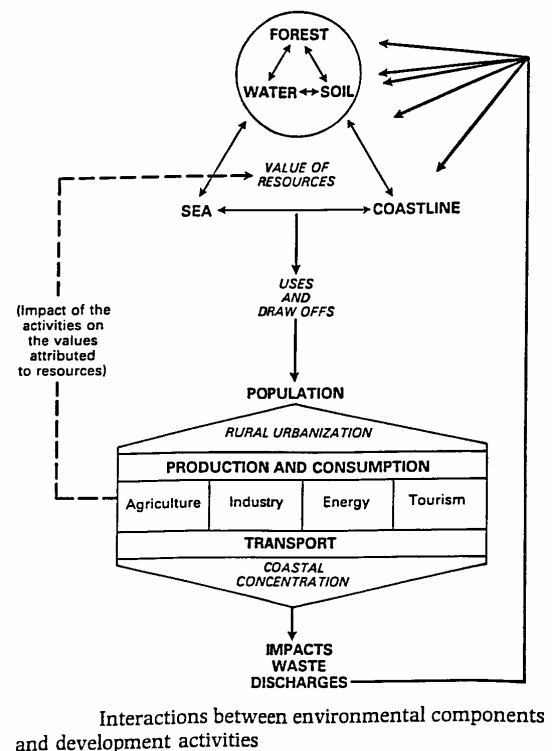


Figure 1. Main components of the environment-development system

¹ Grenon M., Batisse M., 1989. Futures for the Mediterranean Basin, the Blue Plan. Foreword by M.K. Tolba. Oxford University Press.

The purpose of developing a systemic approach to problem solving is generally to gain an in-depth perception resulting in knowledge of a complex reality or phenomenon represented by the system. The systems approach makes intelligible and understandable the complexity of a particular system and allows analysts and stakeholders to concentrate attention on mutually agreed elements and above all on the relationships between these elements. The approach is global in its scope and considers the system as a whole capable to change under the interactions of different elements within the internal and external context.

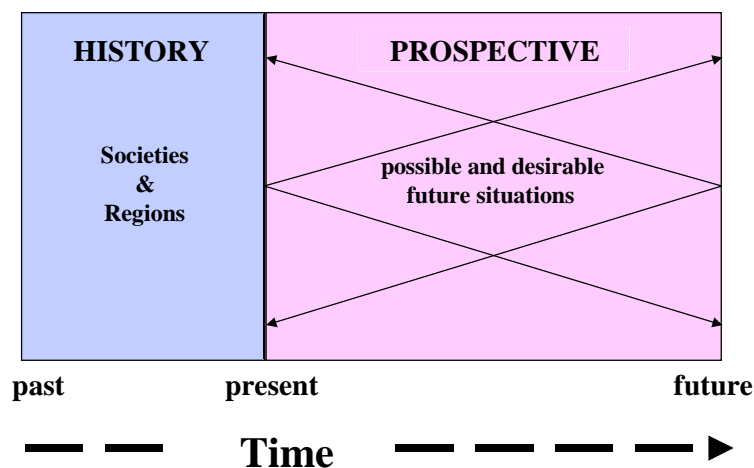
A system has a boundary with the external context or the external environment and within a system there are subsystems operating which need to be carefully defined as well as their own boundaries.

Systemic analysis can be applied in improving knowledge about each element in relation to other elements, defining inter-linkages, identifying actors who control these elements, quantify the weight of the elements in the potential change of the system, and therefore develop an intimate understanding of the interests and complexities associated with the actors.

Systemic analysis requires defining and agreeing the system to study as well as the relevance of each chosen element and the boundaries of the system and subsystems. The next stage is to gain a thorough understanding of trends within the system and the system context, made from such items as – current analysis of stakeholders perceptions, review of past data and examination of present significant activities in order to identify constraints and seeds of change.

Prospective approach allows the projection of past and current trends into the future to identify the system's possible changes in the future, according to various hypothesis of evolution and according to actions that can be undertaken to achieve future desirable and feasible situations, which help to anticipate needs or negative impacts.

The Future : Subject of the Prospective



source : d'après K. Valaskakis , 1994

Figure 2. Looking into the future: the prospective.

Source: Blue Plan

The term "sustainable development" has probably been one of the most widely used (and sometimes abused) terms throughout the last decade. Emanating from the 1987 report – Our Common Future – or better known as the Brundtland Report, sustainable development rose to international concern following the Rio conference in 1992.

Sustainable development has been defined in the Brundtland report as '**development that meets the needs of current generations without compromising the ability of future generations to meet their needs and aspirations**' (WCED, 1987). Blue Plan's definition is '**a development which is respectful of the environment, technically appropriate, economically viable and socially acceptable to meet the needs of present generations without compromising the ability of future generations to meet their own needs**'.

The Blue Plan definition identifies the three elements of sustainable development – economic, social and environmental. The sustainability concept is the outcome of societies' political ability to put its wishes into action, in accordance with its environmental, social and economic concerns. It is important to measure sustainability and to explore the possible outcomes of current actions and policies in order to attempt to avoid crisis and environmental breakdown.

Sustainability Indicators (SIs) have been designed to measure impacts of practice and policy. There is a vast literature on the subject and little agreement matters of detail but it can be argued that indicators have as their primary aim the need to give useful information about:

- The State of the environment as well as social, economic and ecological components of development and changes observed – Examples of **State SIs** include threatened species; population growth in coastal areas;
- Pressures, which act to the detriment of an already degraded status by breaking the highly fragile balance between development and the environment. These pressures can also be essential Driving Forces for economic and social development whose impact on the condition of the environment is not directly perceivable or quantifiable – Examples of **Driving Force SIs** include number of tourists per km of coastline, loss of arable land due to urbanisation.
- Economic, political and institutional Responses which aim to reduce these pressures and improve the situation – Examples of **Response SIs** include public expenditure on conservation and value enhancement of natural, cultural and historic assets, waste water treatment rate.

Sustainability indicators are intended to give the level of sustainability in the past, for the current situation and in the future according to certain assumptions about change and evolution. The definition of the level of sustainability for any given indicator is a difficult task, which assumes an acute knowledge of both the indicator and its milieu. Developing and evaluating indicators is further complicated because this process as applied in the current context is being undertaken in a subjective and participatory manner.

The SPSA approach

Systemic and Prospective Sustainability Analysis (SPSA) has, therefore, been designed to produce SIs in a manner which maximises their chances of producing an *holistic perception* of the context in question, and in an *inclusive and participatory* manner. The stages followed in this approach are briefly described below.

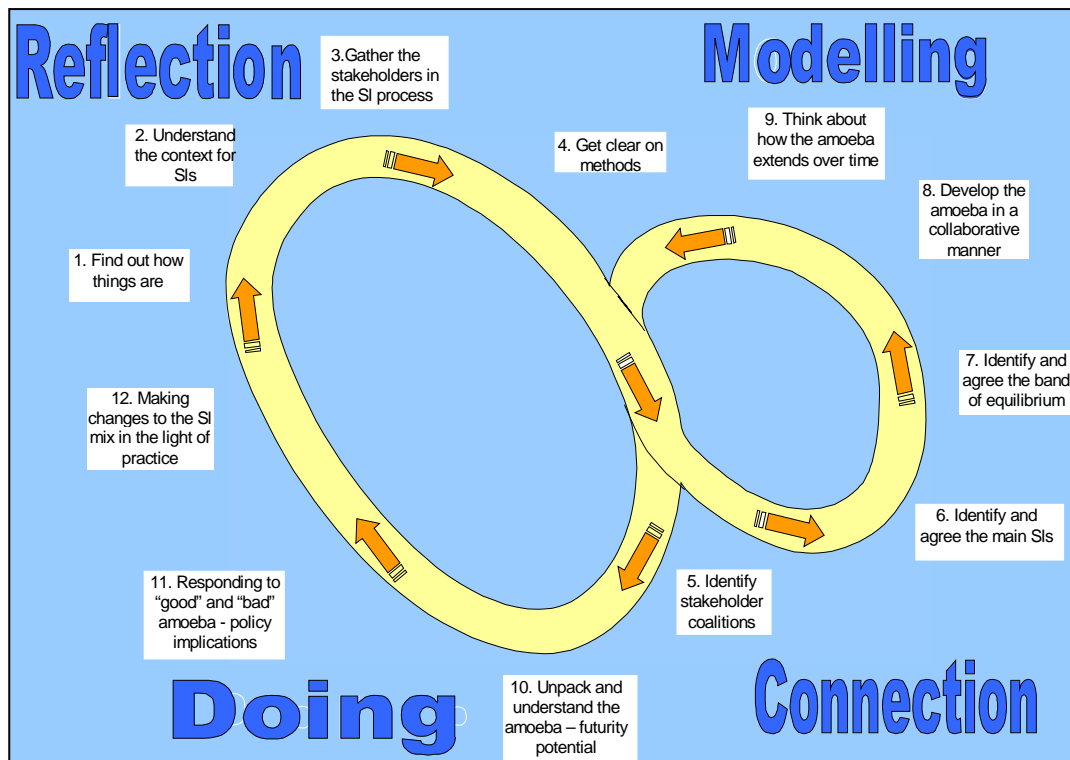


Figure 3. The SPSA process

The main stages of the SPSA approach are shown in Figure 3 above. The SPSA approach makes use of the soft systems approach to understand complex situations. This includes using main elements of the soft systems method such as rich pictures, root definitions and conceptual models. Each stage of the SPSA will be briefly described in the following sections.

STAGE 1 - FINDING OUT HOW THINGS ARE

The first stage in the process is to understand the prevailing mood within the system being addressed. This is done by bringing into play the various actors involved and stakeholders to identify the controversial and common interests in the system. This initial 'soul-searching' exercise identifies the problems to be addressed, the players and their roles, the strengths and weaknesses as well as opportunities and threats (SWOT) as well as the inter-relationships between the various actors. This approach sets the mood of the issue and the particular climate within which the various stakeholders are to operate – whether a climate of conflict or cooperation. The outcome of this stage is insight into the potential for the people involved in the project intervention to deal with the

issues and tasks which the context may throw up. It also provides an opportunity for emerging new themes and ideas².

STAGE 2 - UNDERSTANDING THE CONTEXT FOR SIS

This stage is very much an extension of the first and both can be regarded as integrally linked. This second stage extends the first by pictorial representation of the system under review through the use of the 'rich picture'. The rich picture as applied in SPSA summarises what has been identified and what is known about the system under review in a manner that can be easily understood in a 'cartoon-type representation'. The rich picture represents formal and informal elements, structures and processes (things and activities), which are then translated into tasks and activities necessary to address the various problems of the system.

The result of these first two stages would provide a clear understanding of the 'prevailing states of mind' of the various actors and stakeholders involved and the complexities of the system being reviewed.

STAGE 3 - GATHER THE STAKEHOLDERS IN THE SI PROCESS

The main characteristic of this approach is stakeholder participation. This approach advocates the participation, learning about and respecting the views of stakeholders. It is also important to find a common definition of sustainability with regard to the system being reviewed, since various stakeholders may be viewing this concept from a personal perspective and it is important to find common trends to come to an agreement on sustainable development within this context. This will condition the process and the outcomes of the subsequent stages.

Stakeholder participation is not only consultative but stakeholders are to influence decisions. This, however, must stem from an informed basis since the diversity of interests and experiences may risk turning this exercise into a power game rather than a collaborative effort. Ways of getting stakeholders together must be identified – workshops, seminars, focus groups, meetings, etc. Once stakeholders are brought into the mechanism they become an integral part of the approach, although it may often be the case that stakeholders have to be selected to ensure a manageable forum.

STAGE 4 - GET CLEAR ON METHODS

Having identified the context, the tasks and activities to be carried out as well as the stakeholders to be involved it is now important to be clear on the outputs and the form these would take, and therefore, the methods to be used. The issues of sustainable development and hence SIs may be new to stakeholders and thus the level of understanding of this concept will determine the form the approach would take and the methods to be used.

² Bell S and Morse S, Sustainability Indicators: Measuring the Immeasurable?, 1999, Earthscan

STAGE 5 – IDENTIFY STAKEHOLDER COALITIONS

The identification of and bringing together the stakeholders is a crucial stage in the SPSA process, particularly to define the sustainability system expected to be achieved at the end of the project process. The stakeholder group becomes the basis for future decisions taken with regard to the project. The sustainability system is now transformed into a **root definition**. In simple terms this root definition becomes the mission or the vision of the system, which stakeholders agreed is to be created.

The root definition is a short paragraph (around 30 words) and includes the following elements:

- **C**ustomer of the system i.e. who will benefit from the system or who is financing the system;
- **A**ctors in the system i.e. the players that will engage in the work of the project;
- **T**ransformation of the system i.e. the change desired after following the whole process;
- **W**orldview refers to a set of assumptions which condition the system;
- **O**wner of the system i.e. who will own the project at the end;
- **E**nvironmental Constraints refer to those constraints which affect the system and within which it has to operate.

These elements are referred to as CATWOE with the root definition being a statement similar to the following: *The project will achieve the **transformation** for the **customer** by the **actors** based on the **worldview** and within the **environmental constraints** and will be owned by the **owner**.*

The basic vision of the system is now defined and agreed. The next task is to identify the SIs that will measure the sustainability of the system.

STAGE 6 – IDENTIFY AND AGREE THE MAIN SIs

The composition of the stakeholder group will determine whether the SIs identified will cover the major aspects of the system. It is important that the identified SIs provide a snapshot of the sustainability of the system. State SIs provide this snapshot whilst Pressure SIs show why the desired situation is or is not being achieved. Agreeing on the final list of SIs might be an extensive exercise and the process may take different formats – e.g. brainstorming amongst stakeholders or use already established and relevant SIs.

STAGE 7 – IDENTIFY AND AGREE THE BAND OF EQUILIBRIUM

This is a delicate stage in the SPSA process particularly since it may entail compromises to determine what stakeholders consider as sustainable. The band of equilibrium is simply a range within which a particular indicator can be considered as having reached a sustainable level. Below or above this range would not necessarily be considered as sustainable. Determining what is the acceptable and agreed band entails having relevant data and both professional

and practical expertise. This may turn out to be a tug of war but indicates that sustainability is also somewhat a subjective concept and what is sustainable for one may not be sustainable for another.

STAGE 8 – DEVELOP THE AMOEBA IN A COLLABORATIVE MANNER

The AMOEBA is simple in presentation but rich in information and serves to map out the SIs indicating the level and extent of the overall sustainability of the system. The SIs are distributed into four categories – Economic, Social, Environmental and Technological – represented on the AMOEBA in four quadrants. The band of equilibrium is represented by an inner circle in the AMOEBA and each SI is represented by a line from the centre of the circle radiating outwards towards the band of equilibrium circle. Should the line stop within this band, the specific SI is considered to be within the agreed sustainability range, but if outside this band the SI is not within the agreed range and it may be the case to investigate why. The AMOEBA immediately shows, through visual representation, where intervention is needed and may also indicate relationships between the SIs, thus emphasising the importance of a holistic approach to sustainable development.

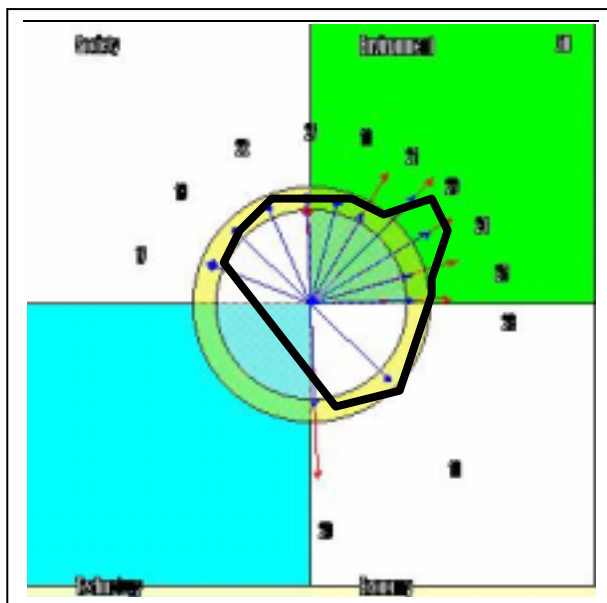


Figure 4. The AMOEBA

Figure 4 shows an example of the AMOEBA indicating the four quadrants together with a sample of SIs and their relation to the band of equilibrium. The AMOEBA is actually formed by joining each indicator to obtain a shape within the circle.

At this stage the team has an information product, the means to produce it, a set of agreed SIs and a methodology for formulating SIs.

STAGE 9 – THINK ABOUT HOW THE AMOEBA EXTENDS OVER TIME

The stage is extending the AMOEBA over time and projecting SIs into the future to gain an understanding of what is likely to happen based on past trends and data. Producing AMOEBAE allows monitoring of specific indicators over time to evaluate whether actions being taken are being effective in achieving the desired result. The important aspect of the AMOEBA, as already stated, is the possibility to see a holistic picture of the level of sustainability of the system and identify which indicators may be affecting each other. Reducing sustainability to a mere index is misleading and does not identify where action needs to be taken or where intervention is giving results.

STAGE 10 – UNPACK AND UNDERSTAND THE AMOEBA (FUTURITY POTENTIAL)

The scope of the AMOEBA is to be an action oriented tool. This stage identifies which SIs are showing an existing problem or a tendency towards a problem. Thus where corrective or preventive action has to be taken. This stage again brings into play the vision of stakeholders with regard to the sustainability of the system and, therefore, which actions are giving the desired results and which are not.

STAGE 11 – RESPONDING TO 'GOOD' AND 'BAD' AMOEBAE (POLICY IMPLICATIONS)

An AMOEBA, which tends to be close to the band of equilibrium signifies that all sectors are operating satisfactorily, however, this still should not leave room for complacency since further analysis may be necessary to determine with certainty that the system has actually reached a sustainable level. Other aspects may have been missed and this is why the AMOEBA looks 'Good'.

In the event AMOEBA looks 'bad' action must be directed to those areas where SIs are not performing to the desired level, and particularly those tasks which are not assisting in achieving this desired state. The evaluation of the SIs over time may indicate whether the remedial action undertaken has in fact solved the problem.

STAGE 12 – MAKING CHANGES TO THE SI MIX IN THE LIGHT OF PRACTICE

The AMOEBA is intended to provoke. It is the means to an end. It should encourage debate and subsequent action to achieve the desired state. This is where the prospective aspect of the SPSA comes in. Trends in SIs indicate potential future scenarios and stimulate discussion on the tasks to be undertaken to reach the transformation necessary for the desired scenario.

Scenario building and marketing

SIs are a means to an end. It is a means to provoke change where it is needed. The SPSA is a cyclical process and is continuous since the SIs may need to change and new ones introduced, bands of equilibrium may also change. SIs in the SPSA approach provide the basis for scenario building, identifying what is likely to happen and what could happen should certain tasks be undertaken. The marketing of SIs is equally important to encourage change in the direction desired. Marketing change is not easy, but through promotion of a better environment or better income and social conditions, the general public might be encouraged to change customs and methods moving towards more sustainable practices.

The SPSA (CAMP) Malta Project

The SPSA project was undertaken through a series of five main workshops, conducted by the consultants engaged by Blue Plan to apply this innovative approach to SI formulation and scenario building as part of the CAMP (Malta) Project. A team, chaired by the Ministry for Economic Services, was formed in February 2000 composed of officials from the Government agencies mentioned above. The main tasks of this team were:

- To get hands on knowledge of the SPSA approach;
- To steer the project locally among the project teams;
- To organise the workshops planned for this project;
- To assist project teams in every stage of the SPSA exercise;
- To produce the Final Project Report.

Copies of the workshop reports are included as appendices to this document.

The selected approach

Five main workshops were held between March 2000 and May 2001. The workshops were generally held over two to three days with an average participation of between 15 – 25 participants and sometimes even more when stakeholders were invited to attend. The workshops helped participants in gaining a thorough knowledge of the approach and what are the required outputs for each stage of the process.

Whilst learning the SPSA methodology, the participants were also applying this approach in the context of their particular thematic activity. Workshops generally consisted of an introduction, whereby the consultants would explain the theory behind a particular exercise and what is expected from the teams. Following this plenary session the participants would form different groups, generally according to the specific thematic activity, and carry out the exercise in a group. A representative of the group would then give a presentation, after each session, on the results as well as the discussions and issues raised in the process. The workshops also provided an opportunity for team members to discuss any difficulties and problems with the project and how this is relating to each of the thematic projects.

This approach had the advantage of providing participants with a forum to discuss, systemically and analytically, with their colleagues, offered an opportunity to gain hands on experience in the SPSA approach as well as discuss with the consultants any suggestions on the approach and what has/has not worked in the context of the Maltese Islands and particularly the North West.

The SPSA is a cross cutting activity which runs across all the five thematic groups and sought to add a sustainable development dimension in each project with regard to sustainability indicators. Initially most of the project teams felt that this exercise was an additional task to their main project, this was not always seen as being welcome – all teams were already fully engaged in existing tasks. However, the manner in which the workshops were conducted and the

fact that these workshops were some of the few occasions when all project teams met contributed to an interest in the approach and to the success of this particular project. Even though, at times, participation was not as one expected it to be, nonetheless, the few who would attend always found the workshops fruitful and informative.

The SPSA team also participated in the exhibition held in early April 2001 launching some of the work carried out by the various project teams involved in the CAMP (Malta) Project. This exhibition held over a week with a concluding seminar, helped to introduce this approach to visitors who attended the exhibition and the seminar.

Apart from the main workshops, in between workshops, the SPSA team, who were assigned to each project team, would work closely with team members to undertake the work expected from one workshop to another. This often involved meetings with teams as well as with stakeholders, as well as the organisation of half-day workshops. The SPSA team held a series of monthly meetings to keep track of the exercise and to ensure that teams have the necessary support required with regard to commitments concerning the SPSA project. Members of the project teams and the cross cutting activities often attended such meetings.

Progress Report

The following sections will outline the main stages of the SPSA approach undertaken as part of the CAMP (Malta) project as developed during the workshops held.

First Workshop held 27th - 29th March 2000

This first workshop introduced participants to the concept of sustainable development and the use of SIs and how the SPSA methodology can be used to formulate SIs. A presentation was also given of the approach adopted by the Planning Authority in formulating a set of sustainability indicators.

During this first workshop participants were introduced to the first stages of the SPSA approach and particularly understanding the context through the use of the rich picture tool. Each team then prepared a list of major tasks that needed to be addressed and/or major issues, which needed to be taken into account by the respective thematic sub-project. The next stage was to select one major task or issue (or a cluster of tasks/issues), which would form the basis of the SSA/SI project. Teams focused on the system defined and developed the "CATWOE criteria."

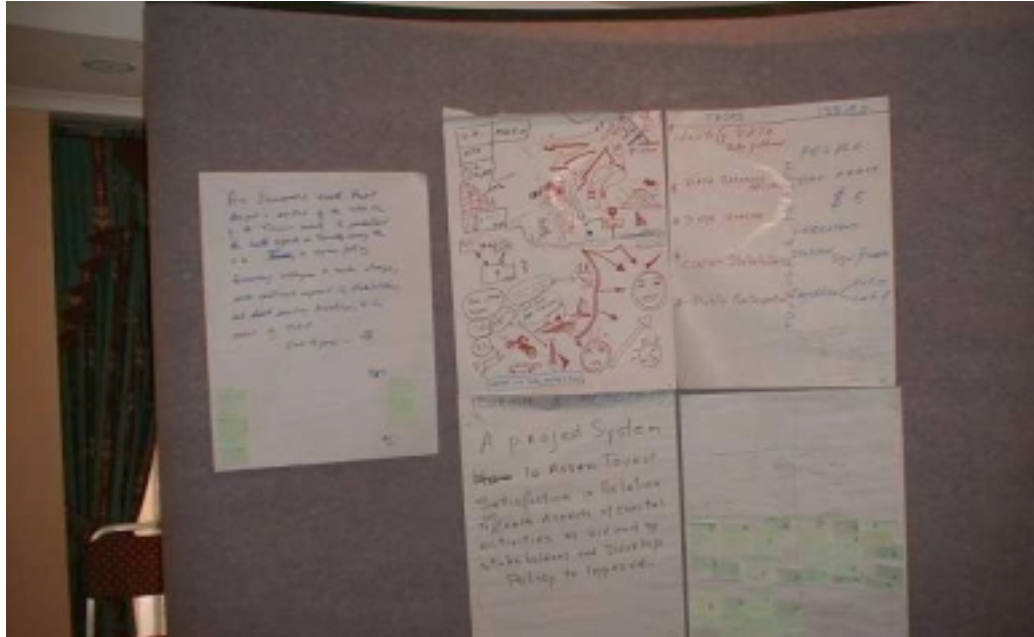


Photo 1. Sample of work produced during the first workshop

The CATWOE was the basis for the formulation of the Root Definition for each thematic project. The Root definition is considered as the 'mission statement' for the SPSA/SI project. Once the Root Definition was agreed, teams identified and prioritised a number of activities (between 30 and 40) to achieve the transformation set out in the Root Definition.

The main activities were then sorted in a sequential process that forms the Conceptual Model. This model was then related to the Rich Picture produced at the start of the exercise, primarily to identify that the process to be followed reflects what is needed to be done to address the issues identified at the outset.

Teams then identified the outputs to be achieved for the main activities of each thematic project. This exercise forms part of the initial stages of the development of the Log Frame. The Log Frame provides a format for the team to set out the formal aspects of the project (activities leading to outputs, resulting in purposes and leading towards the wider strategic goal).

Indicators were produced in order to demonstrate that the outputs for each thematic sub-project were being achieved. At this initial identification stage groups were to include any possible indicator considered to be relevant irrespective of the cost or whether data was available. The teams came up with several indicators, and were asked to consider the linkages between them in driving force-state mode. This first workshop concluded with each team having formulated a list of SIs, which were to be reviewed and finalised prior to the next workshop.

<p><u>Driving force</u></p> <p>rainfall intensity</p> <p>% of watershed which is built</p> <p>% area covered by non-absorbent surfaces</p> <p>% area trampled within fields</p> <p>location & width of foot paths within fields</p> <p>no. of days with gale force winds</p>	<p><u>State</u></p> <p>slope steepness</p> <p>% irrigated land</p> <p>% abandoned land</p> <p>% of land under vegetation cover</p> <p>no. of trapping sites and hunting hides</p>
<p><u>Response</u></p> <p>no. of rills within watershed (depth & width)</p> <p>monetary compensation</p> <p>quantity of natural fertiliser</p>	

Table 1. Some SIs identified by Soil Erosion and Desertification Control team

A field trip to the North West was also organised to familiarise participants with the system being studied. Team members gave an explanation of their particular project as well as some of the problems and issues to be addressed.



Photo 2. Visit to the North West area of Malta

Second Workshop held 29th - 30th May 2000

This second workshop sought to enable thematic teams to feel confident in redefining and establishing the key SIs for each project and introduce the band of equilibrium. This workshop was also an opportunity for team members to present the progress achieved since the last workshop and to highlight any problems encountered particularly with the formulation of the SIs and the interaction amongst teams. The three main strengths and weaknesses identified were:

- Strengths:
 - Commitment from team members
 - Complementary knowledge of team members
 - Data sharing
- Weaknesses:
 - Work constraints and lack of human resources
 - Not enough communication between teams
 - Lack of communication with higher levels of Government.

This workshop introduced participants to two SPSA tools – The Strengths, Weaknesses, Opportunities and Constraints (SWOC) and the Feasibility Analysis. These tools are used in refining the SIs.

The band of equilibrium was explained to the participants, although the next workshop would deal in much more detail with this aspect. Participants then produced initial bands of equilibrium for a set of SIs. This exercise highlighted some initial problems in arriving at bands of equilibrium and the complexity of the exercise, particularly in view of the fact that data on specific SIs was not yet available and the diversity of views in defining the maximum and minimum levels of the band of equilibrium. This short workshop was an occasion to reflect on the approach and any difficulties being encountered by the various teams.

Third Workshop held 2nd - 4th October 2000

This workshop focused primarily on the definition of bands of equilibrium for the SIs which each thematic group identified and also introduced the AMOEBA. This workshop also offered the opportunity for team members to discuss problems and issues with regard to the SSA project as well as the overall CAMP (Malta) project with the consultants and Blue Plan.

The workshop also discussed stakeholder participation and particularly how to get stakeholders interested in SIs and subsequent ownership. This was important since stakeholders were invited to one of the sessions of the workshops. During this session the stakeholders were introduced to the CAMP (Malta) Project and the SPSA project giving a background to what has been achieved so far and what will be their role in the project.

However, most of this workshop was devoted to defining bands of equilibrium for each of the list of indicators identified. At times this exercise was subjective and based upon estimation because no data was available for most of the indicators. Teams also tried their hand at drawing the AMOEBA and using this tool to represent past data and potential future trends.

The session held with stakeholders showed that there existed a large gap in the understanding of sustainable development, let alone the use of SIs. Nonetheless, the discussion provided a forum where the various participants discussed issues, experiences and problems concerning their specific responsibilities. The stakeholder came from diverse areas – tourism, local councils, NGOs, Government agencies and private organisations.

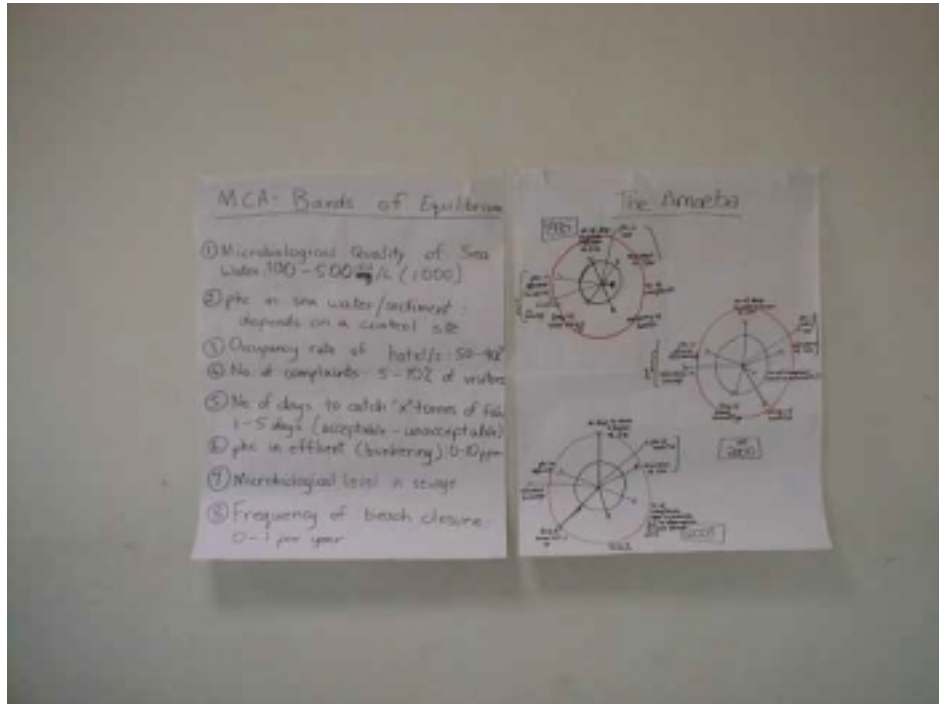


Photo 3. Defining Bands of Equilibrium and producing AMOEBA

This workshop provided an insight into the scope of SIs and the prospective dimension of the SPSA and particularly that SIs are a means to an end and their value is in providing a basis to encourage change and take action where necessary to steer a specific system towards sustainable development.

Fourth Workshop held 5th – 7th February 2001

The Fourth Workshop was important since it was attended by the Director of Blue Plan, Mr. Guillaume Benoit. This confirmed Blue Plan's support to this project and the interest shown in the progress of this approach in the CAMP (Malta) Project. At the end of this fourth workshop the teams had gone through the nine-stage process of the SPSA. This workshop was devoted to the interpretation aspect of SIs and the picture these are giving with regard to the future of the system under review.

The use of a software to produce the AMOEBA, which was developed by Blue Plan in consultation with the consultants, was presented and discussed during this workshop. Participants were able to input their SIs and respective bands of equilibrium and at the stroke of a button the AMOEBA diagram was produced. Participants also provided some recommendations on how the software could be

improved to make it a better planning tool and particularly the possibility of showing relationships between SIs, besides recommendations on design.

Stakeholders were also invited to one of the sessions of this workshop and the SPSA approach and the work done was presented to them. This was an opportunity for stakeholders to see beyond SIs and discover the interpretation dimension of SIs and the SPSA approach as well as the potential offered by marketing SIs to achieve the desired transformation. Stakeholders also suggested some new SIs to be considered.



Photo 4. Discussing aspects of SPSA with stakeholders

Scenario planning was also introduced during this workshop. This identifies what is likely to happen if a particular SI persists and what can be done to reverse or maintain the trend. Bad indicators mean something needs to be changed whilst positive SIs confirm positive action. A strategy is then defined to achieve the desired scenario and actions are identified as to how this strategy might subsequently marketed to stakeholders.

Fifth Workshop held 14th - 15th May 2001

Besides discussing the progress achieved so far, the main purpose of this workshop was the interpretation of SIs through scenario building and the achievement of the desired scenario through marketing and promotion. This workshop was also a precursor to the CAMP (Malta) Project Harmonization and Integration workshop held on the 4th - 5th June 2001.

The final outcome of the whole project is to propose and to provide a monitoring programme in order to follow progress or down turns in the endeavour to achieve sustainable development according to key indicators. An important

stage in this exercise is to identify likely future scenarios and what needs to be done to achieve such scenarios aiming to reach desirable future situations.

The development of a scenario consists of:

1. Having an initial view of the system;
2. Choosing a set of hypotheses of evolution, with criteria of transparency, probability, consistency and relevance;
3. Drawing a pathway which links the past and present with the future;
4. Describing the final situation.

The basis for this approach is the capacity of SIs to provide a foundation for frame-by-frame review of the sustainability of a given context. With Scenarios the thematic teams can develop possible future situations based upon a considered understanding of the themes, which the SIs demonstrate.

During the workshop scenarios were developed for two SIs by making use of Soft Systems Methodology. The teams worked on SIs identified for the Marine Conservation Areas project and the Soil Erosion and Desertification Control Management project. Teams were once again asked to draw a 'rich picture' of what the SIs were indicating. Three possible scenarios were identified and what actions were necessary to achieve those scenarios.

The second part of the exercise was to produce a root definition using CATWOE indicating the transformation desired, how this can be marketed and what is to be done for the promotion to succeed. The three rules in marketing are for the client to relate to the system, feels that is right for him/her and desires that system (simplified to the statement: 'that's me, that's right, yes please').



Photo 5. Using the 'rich picture' to project future scenarios

This workshop concluded the full-cycle of the SPSA approach and methodology. However, the SPSA is continuous and therefore, the exercise does not stop there,

but is continually revised and the whole process starts all over again, with new stakeholders coming in, formulation of new SIs and actions to be undertaken.

It was decided to present the project during a concluding workshop/conference to be held in January 2002. There should be two events, one for external stakeholders (Heads of Governments Departments, Ministers and Parliamentary Secretaries) and one for internal stakeholders (project teams, project team stakeholders). This conference should primarily seek to present the project and its results and obtain a commitment to ensure the continuity of the project.

Concluding Seminar

The concluding seminar was held on 7th – 8th January, 2002. The purpose of this concluding seminar was to present the results achieved by this project and discuss the post project activities. The first day was directed towards the thematic project members and the stakeholders who have attended previous sessions. This was important for teams and stakeholders to provide feedback on their experience of the project highlighting what knowledge they have obtained and any critique of the approach. For the second day Directors of the key Government organisations, which were involved in the CAMP Malta Project, were invited primarily to get their feedback on the possibility of taking the SPSA beyond the CAMP Malta project.

Following the initial presentations, stakeholders expressed their appreciation of having been given the opportunity to participate during the various sessions. Some of the main issues raised concerned the following:

- The publication of the studies not only the SPSA but for all CAMP Projects. There will in fact be a Final Integrated Report, apart from the publication of the individual project reports.
- The SPSA project served as an Integrating function for all projects.
- The commitment by Government to take the project post CAMP. Some suggestions were put forward during the second day's session
- Project must influence the main planning tools particularly the North West Local Plan and the Coastal Zone Management Topic Study. Some SIs can be monitored to assess the sustainability of implementing the North West Local Plan policies whilst there were close links between the Coastal Zone Management Topic Study and the Sustainable Coastal Management thematic project.

The second day saw the participation of the Director of Planning, Planning Authority and the Director of the National Statistics Office (NSO). The two-year work and achievements were presented, however, the emphasis was on the way forward. SIs should become an integral part of any planning and management process for the country. An outline of the possible responsibilities of the Malta Commission for Sustainable Development, even though this had not yet been set up was given by Mr. Louis Vella. This would be a potential set up to continue the project or at least take on Board the process which has been initiated through the CAMP Malta Project in this regard.

A presentation was given by the Director NSO on work being carried out on Indicators.

In terms of sustainable indicators, within NSO an Environment Unit has been established in the past three years and one of its tasks is to co-ordinate the collection of indicators related to social, economic and business aspects. In addition, the Environment Unit has also been compiling environmental data from a variety of sources which will be included in a national compendium that will be published by NSO. This compendium includes a number of environmental indicators related to waste generation, weather, water consumption, transport and energy.

At the end of the sessions, although there was no definite commitment by any Department or Agency to continue the project, nonetheless a number of suggestions were in fact made.

The Malta Commission for Sustainable Development might adopt the process for the formulation of National SIs using the experience from the SPSA activity for the North West.

The thematic projects will have a follow up after CAMP and a key set of SIs can be monitored as part of the second phase of the project.

Some funds are available through SMAP and will be used to progress the Marine Conservation Area project. The SPSA process can be part of this second phase.

The selected key SIs can be monitored, updated and distributed to thematic project teams and stakeholders, and published to keep an interest in the project and to highlight the consequences of trends indicated by the SIs.

It was agreed that besides this report a final publication will be produced which would not be as detailed but which would highlight the whole approach and its results as a demonstration project, which would be of interest to other national and international projects. The material produced as part of this project should also be disseminated on the relevant web sites (e.g. Planning Authority, EPD and Blue Plan).

Sustainability in the North-West

The CAMP Malta) Project focused on the North West area of the Maltese Islands retaining the same boundary as for the North West Local Plan. The plan boundary runs from Ghallis Point in the north, to Wied Fulija in the South and includes all the rural, coastal and settlement areas west of Mosta, Siggiewi and Qrendi. The local councils falling within the North West Local Plan area are Rabat, Mdina, St. Paul's Bay, Mellieha, Mgarr and Dingli. However part of the following councils also falls within the North West Local Plan area – Zurrieq, Qrendi, Naxxar, Zebbug and Siggiewi. It also includes the National Recreation Centre at Ta' Qali. The area has a distinctive rural character, but contains historic and relatively modern holiday settlements and is subject to intense pressure in fulfilling its role as a major area for tourism and recreation activities.

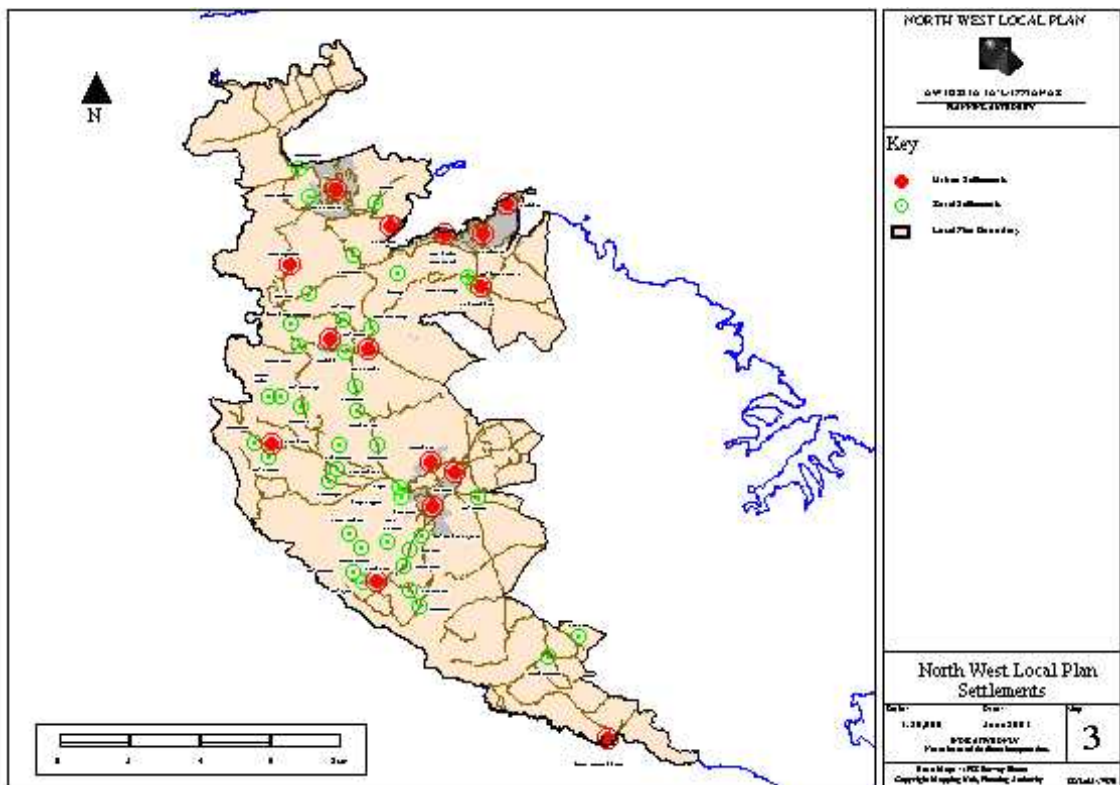


Figure 5. The North West of Malta

Source: Planning Authority

Mellieha and St. Paul's Bay are two important residential and recreational/tourism centres. Rabat is predominantly residential with Mdina close by being both a tourism attraction as well as a residential area. The localities of Mgarr and Dingli and the settlements of Bahrija, Manikata, Burmarrad and Zebbiegh are closely associated with agricultural activities in the surrounding countryside.

The area is a major 'playground' for the island's resident and visiting tourist population, and is clearly subjected to environmental degradation. Rural recreation as well as diving is important activities in the area. The North West

is also the prime area for bathing, particularly for those seeking sandy beaches. The North West area is unfortunately scarred with illegal dumping of waste material and a number of illegal developments have sprouted over the last decades around the coastal areas, especially the numerous boathouses found in the Marfa area. The area also contains a number of Areas of Ecological Importance, Sites of Scientific Importance and Areas and Sites of Archaeological Importance. The coastal cliffs, particularly those at Dingli are scheduled for protection. The temples at Skorba and Ta' Hagraat house important archaeological remains and the temples of Mnajdra and Hagar Qim are well frequented by visitors. The main strategy of the Draft North West Local Plan ' *is to assess the environmental capacity of the area and protect the natural and man-made environment of both rural and urban areas, provide for economic development needs, accommodate population growth, sustain rural communities and encourage agriculture.*'

The five thematic projects covered a number of the main issues, which concern the North West. The Sustainable Coastal Management project addressed most of the issues relating to the coast such as, illegal developments, recreational activity, tourism development, protection of coastal areas, agricultural activity, hunting and trapping, etc. This project will also produce a Management Plan for the use of the coast. A Strategic Environmental Assessment exercise has been undertaken as part of this project. The Soil Erosion and Desertification Control project focused on the forces, which are resulting in the erosion of the soil cover particularly the abandonment of fields, lack of maintenance of rubble walls, farming practices, etc. The Marine Conservation Area project focusing on the area between Ras ir-Raheb and Irdum Majjiesa has undertaken both land and marine surveys and would produce a management plan for the setting up of the marine conservation area. The Tourism and Health project sought to address health issues in tourist establishments and facilities, as well as beaches in terms of hazards and health risks from waste, food and water quality. The fifth project was the Integrated Water Resources Management project, which had the main aim of looking into water related issues in the North West particularly the supply and quality of water, potential sources of contamination, demand factors, etc.

SIs have been identified for all these projects. Out of the total list of SIs a shorter list of key SIs, which would reflect the level of sustainable development in the NW has been identified and is presented in Table 2. The SIs are also presented using the AMOEBA diagram in Figure 6. The complete list of SIs is presented in Table 3 below.

N°	Indicator	Domaine	Polarity	Note	Maximum	Minimum	2000
1	Scheduled/protected areas in NW	1	>	% of the total coastal area of the NW	80	65	66
2	Abandoned agricultural land	1	>	% of total agricultural land	25	7	15
3	Fish farms in the NW	1	<	number of farms	5	2	5
4	Cars travelling through the NW	1	<	number of cars during peak	3000	1000	4500
5	Marine vessels in the NW	1	<	number of marine craft during peak weekend	700	400	1000
6	Enforcement actions by PA	1	>	annual number of cases	60	25	68
7	Marine conservation/protected areas	1	>	% of coastal length	20	10	0
8	Diving in the NW	1	<	No. of dives	40000	15000	55000
9	Bathing water quality	1	>	% of samples meeting acceptable levels of faecal coliforms (<1000mg/l)	95	85	98.3
10	Number of breaches in rubble walls	1	<	No. of breaches	10	5	11
11	Pollution in ground water	1	<	Level of nitrate (mg/l)	50	25	65.27
12	Unemployed as a % of working population	2	<	% of working population in NW	3	1	1.8
13	Full time farmers	2	>	% of total farmers	50	40	44
14	Tourist accommodation occupancy - winter	2	>	occupancy % during winter	55	35	26
15	Employment in tourism	2	>	fulltime employees in NW % of total	25	15	14
16	No. of claims for storm damage	2	<	No. of annual claims	50	25	72
17	TSE recycled water	2	>	% of water consumed	80	50	4.6
18	leaked water	2	<	cubic metres per hour	600	300	1200
19	level of bunkering operations	2	<	% of total operations in Malta	20	5	19.3
20	Population growth in the NW	4	>	annual rate of growth	5	2	1.4
21	population density in NW	4	>	population per sq km	500	300	328
22	Beach closure	4	<	number of days during summer	15	2	25
23	Tourist resident ratio -summer	4	X	daily tourists as a % of residents	95	70	136
24	Gastroenteritis outbreaks in NW	4	<	No. of total outbreaks in a year	3	1	5
25	Quality of drinking water (1)	4	<	Level of chloride (mg/l)	800	200	517
26	Quality of drinking water (2)	4	<	Level of nitrate (mg/l)	50	15	56
27	Quality of bathing water	4	>	No. of points obtained on faecal coliform readings	50	35	40

Table 2. List of key SIs for the NW

Note: due to the unavailability of data for 2000 some figures represent data for 1999

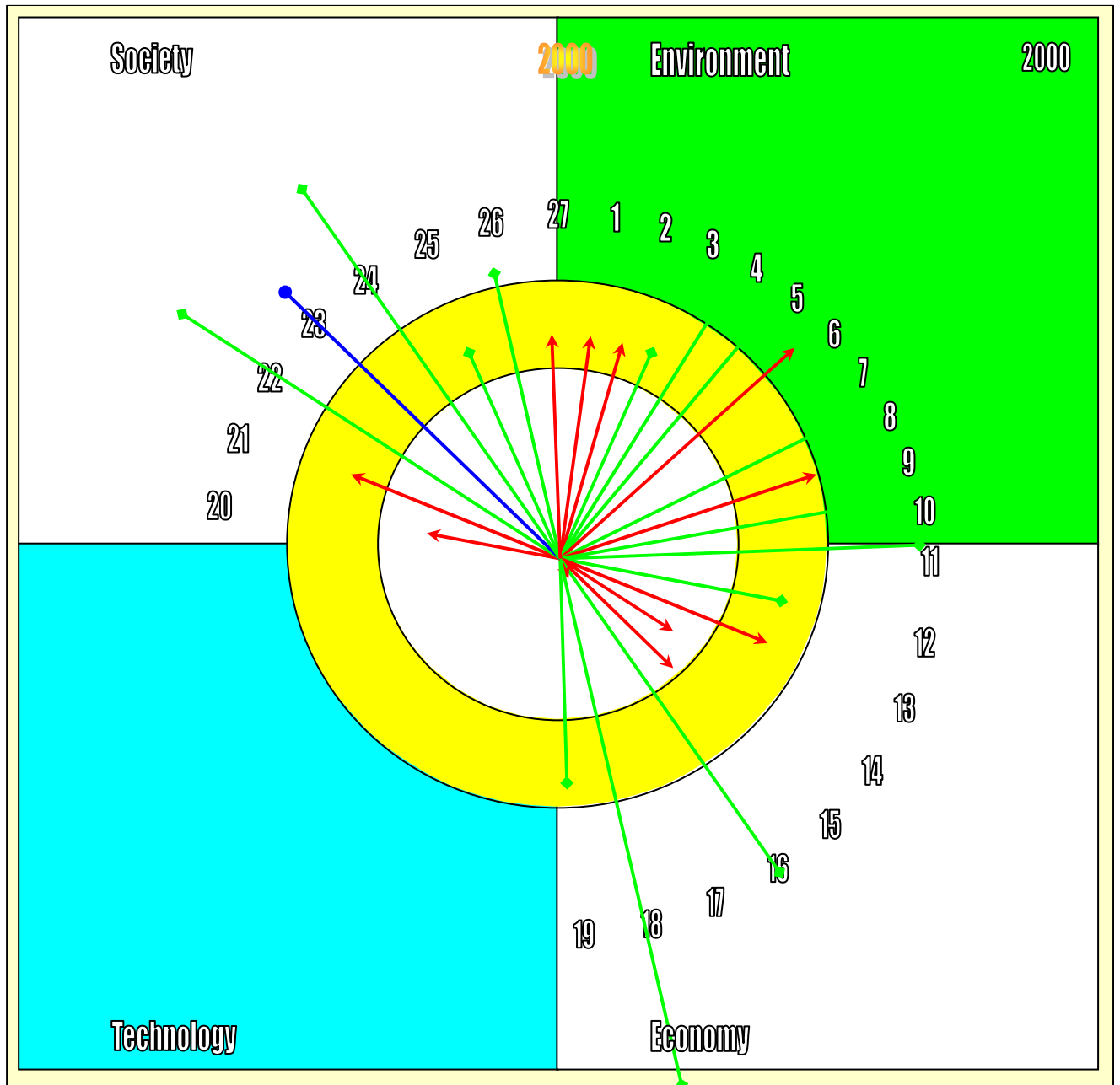


Figure 6. AMOEBA derived from selected SI list

Indicator	Note	Maximum	Minimum	1990	1995	1996	1997	1998	1999	2000
Sustainable Coastal Management										
Applications granted - other	granted as a % of sq m submitted	70	30				1	63		
Applications granted - commercial	granted as a % of sq m submitted	75	40				23	64		
Applications granted - tou/rec	granted as a % of sq m submitted	60	35				34	2		
Applications granted - domestic	granted as a % of sq m submitted	90	80				49	54		
Scheduled/protected areas in NW	% of the total coastal area of the NW	80	65			7				66
Applications granted - agriculture	granted as a % of sq m submitted	95	75				0	24		
Applications granted - listed buildings	granted as a % of sq m submitted	90	70				0	0		
Abandoned agricultural land	% of total agricultural land	25	7			12	12	13	14	15
Fish farms in the NW	number of farms	5	2	3		4	4	4	4	5
Bunkering operations in NW	number of bunkering operations	NA	NA							
Hardstone quarries	size of quarries by surface area (000 sq m)	800	400							775
Production from hardstone quarries	% of national production	80	50			70				60
Cars travelling through the NW	number of cars during peak	3000	1000	1630				4109		
Marine vessels in the NW	number of marine craft during peak weekend	700	400			800				1000
Enforcement actions by PA	annual number of cases	60	25			104	75	67	52	68
Reports to ALE	Annual number of ALE reports	60	25					34	67	109
Unemployed as a % of working population	% of working population in NW	3	1							1.8
Applications granted - industrial	granted as a % of sq m submitted	65	30				0	0		
Applications granted - services	granted as a % of sq m submitted	95	80				100	77		
Full time farmers	% of total farmers	50	40							44
Fish catch	% of total catch	30	15							
Fish farm production	yearly production	NA	NA							
Tourist accommodation occupancy - winter	occupancy % during winter	55	35					39	38	26
Tourist accommodation occupancy - shoulder	occupancy % during shoulder	75	55					65	63	48
Tourist accommodation occupancy - summer	occupancy % during summer	95	80					87	84	67
Employment in tourism	fulltime employees in NW % of total	35	30							14
Population growth in the NW	annual rate of growth	5	2			19	1.6	1.3	1.3	1.4
population density in NW	population per sq km	500	300			310	316	320	324	328
Full time fishermen	% of total fishermen	15	5							
Beach closure	number of days during summer	2	15			36	17	27	28	25
Tourist resident ratio - winter	daily tourists as a % of residents	50	45				48	51	52	51
Tourist resident ratio - shoulder	daily tourists as a % of residents	70	55				92	95	97	95
Tourist resident ratio -summer	daily tourists as a % of residents	95	70				122	129	129	136
Marine conservation/protected areas	% of coastal length	20	10			0	0	0	0	0
Diving in the NW	No. of dives	40000	15000							55000

Indicator	Note	Maximum	Minimum	1990	1995	1996	1997	1998	1999	2000
Tourism & Health										
Gastroenteritis Outbreaks in NW	No. of total outbreaks in a year	3	1				2	1	6	5
Gastroenteritis cases in NW	No. of total cases in a year	9	5				8	6	5	7
Rodent control – bait placed	No of takes from baits places	3	2							
Bathing water quality	% of samples meeting acceptable levels of faecal coliforms (< 1000 mg/l)	95	85			98.5	98.7	98.6	97.4	98.3
Risk Factor grading of hotels	% of inspections falling within Grade A - C	90	70					76	72	68
Risk Factor grading of catering establishments	% of inspections falling within Grade A - C	90	70							57
Rodent Control – residents' complaints	No. of complaints from residents	5	1	9	6	9	7	14	1	
Beach quality as compared to Blue Flag	In % points attained	210	71							
Beach quality as compared to Health criteria	% of total beach sample observations falling within Grade A	100	80			75.4	80.6	81.6	65.7	71.7
Media interest in tourism health	% of positive/negative media coverage	90	50							
Soil Erosion & Desertification Control										
Official flood warnings	No. of warnings given	10	4							
No. of claims for compensation	annual number of claims	50	25	217			50	72		72
No of breaches in rubble walls	No. of breaches	10	5							11
Length of breaches in rubble walls	Length in metres	100	50							69.8
Land tenure	% of agricultural land owned and farmed by owner	50	25							15
Integrated Water Resources Management										
Quality of drinking water	chloride level (mg/l)	800	200	457	771					517
Use index	% of total users	100	85	>99	>99					>99
Water consumption	litres per capita per day	150	90	77.9	88.2					72.9
Pollution in groundwater	Nitrate levels (mg/l)	50	25	67.4	70.1					65.27
water affordability	Lm/m ³	1.1	0.12	0.105	0.327					0.516
TSE recycled water	% of water consumed	80	50	1.5	1.4					4.6
Quantity of produced water	million m ³ /year	20	10	39.59	51.61					35.15
piezometric levels	metres	3.25	0.5	2.81	2.63					3.11
Quality of drinking water	nitrate level (mg/l)	50	15	75	54					56
Leaked water	m ³ /hour	600	300	2421	2800					1200
Marine Conservation Areas										
phc in effluent (bunkering)	ppm	10	0							
Level of bunkering operations	% of total operations in Malta	20	5				20	17.5	25	19.3
Marine vessels in MCA	no. of vessels	70	30							
Quality of bathing water	Number of points obtained on faecal coliform readings	50	35	40	45	50	45	50	40	
Complaints by visitors	% of visitors	10	5							

Table 3. Complete list of SIs for each thematic project
(Note: Some data is not available or has not been collected.)

The following sections will discuss the level of sustainability for each thematic project in the light of the information available from the SIs.

Sustainable Coastal Management

The vast list of SIs shows that this area is pressured with a number of activities ranging from recreational to tourism to industrial to agricultural to fishing, without forgetting the local communities and the residential aspects. These activities are all competing for the limited resources and creating conflicts between the various uses. For example the bunkering operations, fish farms and the sewage outfall in the vicinity of bathing areas are a hazard to bathers and during the last years beaches in the north experienced closures of several days during the summer months. Most of the indicators are within the band of equilibrium with some being consistent whilst others fluctuate much more, for example the number of cars travelling through the North West. This has increased substantially and is way above the maximum level acceptable.

Tourism activity is also showing signs of instability in the area with average occupancies for 2000, during all seasons, falling outside the band of equilibrium. In previous years this was within the band. The level of diving is considered unsustainable since the estimated number of divers exceeds the maximum acceptable. The level of enforcement actions by the Planning Authority has exceeded the band of equilibrium in various years, indicating an unsustainable level of illegal development.

The indicators show that action in specific areas is giving results in terms of sustainable development, whilst in other areas, particularly certain recreational activities, more management measures are required to ensure a sustainable level of activity. Thus a management plan for the coastal zone in the North West needs to be given immediate attention so as to set up the appropriate structures to implement such a plan and ensure a more sustainable use of the coastal zone.

Three specific indicators were chosen and scenarios identified. This exercise was carried out with the participation of stakeholders. The results are given below.

Abandoned agricultural land

The first SI discussed was the % of abandoned agricultural land. The data collected indicates that this has been increasing over the last years. The following three scenarios were identified.

Scenario 1: A sharp increase in the % of abandoned agricultural land

This scenario can occur should the current situation prevail. Agricultural production exceeds demand, with respect to specific produce and therefore, this brings a low return. Technological improvements have increased production from the same piece of land and thus the farmer has no incentive to add more land into production. The current level of full time farmers is high.

Scenario 2: An increase in the % of abandoned agricultural land but at a lesser rate

This scenario can occur should specific actions be taken up. The most important would entail a re-structuring of the agricultural sector with more co-ordination among the various farmers particularly with regard to what to produce and when, even though this is limited by the type of land being worked and its production potential. The availability of more recycled water would reduce potential abandonment of good quality agricultural land. Better production practices can ensure that supply satisfy demand levels.

Scenario 3: A decrease in the % of abandoned agricultural land

This scenario can be achieved provided the agricultural sector is given the attention needed. Incentives and assistance to ensure that farmers make use of their land rather than abandon it. This can be achieved by providing better information on what produce is required and in which season. The tourism sector has indicated that certain products are scarce when most needed and this collaboration between the sectors can bridge the gap directing farmers to produce what is in demand. The availability of second-class water through the sewage treatment plants would encourage the conversion of abandoned land into productive land.

During the discussion it clearly emerged that the transformation to achieve is THE RESTRUCTURING AND AN IMPROVED ORGANISATIONAL STRATEGY FOR THE AGRICULTURAL SECTOR.

In terms of the marketing activities that need to be undertaken the following were some of the suggestions:

- a) Information sessions amongst the farming community to encourage improved agricultural practices particularly in keeping an eye on demand.
- b) Training sessions on the presentation of agricultural produce.
- c) Information leaflets issued by Pitkali (the agricultural market depot) to farmers indicating the likely demand for specific produce during the different seasons.
- d) Collaboration between the agricultural sector and other interested sectors (e.g. Tourism) through joint committees and exchange of information.
- e) More publicity of the local agricultural products to promote the quality of local produce.
- f) Training programmes for farmers to ensure a quality product.
- g) Information leaflets on the use of abandoned agricultural land for production of products in demand.

Some of the problems identified concern the quality of the agricultural land, which constitutes a constraint on how much this land can be worked and for what type of produce, as well as the lack of water resources and competition from products imported from abroad. These are also other issues, which need to be addressed.

Tourism accommodation occupancy - winter

The second SI discussed referred to the level of occupancy of tourist establishments during the winter season. The North West is a seasonal resort and high occupancies are achieved during the summer months. Occupancies during the winter months are low and recent data has shown that average occupancies are decreasing. This SI has taken the average occupancy for all forms of accommodation. During the winter months there is a decrease in usage of self-catering accommodation and therefore hotel accommodation experience an above average level of occupancy. For the sake of this exercise we will stick to the occupancy in hotel accommodation. The following three scenarios were identified.

Scenario 1: Stabilisation of hotel occupancies at current levels

This would require more promotion to attract increased levels of tourists since the average length of stay has been decreasing and more tourists would be needed to sustain current levels. The development of new hotels bringing new beds onto the market is also contributing to the difficulty existing establishments are having in keeping occupancies at acceptable levels during the winter months. Establishments should have to resort to further discounted rates to maintain current and better levels of occupancy. New products to attract tourists during this season need to be developed since the main product offered is summer based.

Scenario 2: Occupancy levels experience a slight increase

This can be achieved with a restructuring of the accommodation offer in the area, particularly to cater for the demands of the winter tourist through innovative facilities and activities. This will also entail a moratorium on new beds with some flexibility being given to existing establishments that wish to re-develop and thus offer a better product. The current bed capacity can be reduced with the removal of low standard accommodation facilities and their redevelopment into other sectors/ facilities.

Scenario 3: A significant increase in hotel occupancy levels

This would require a total moratorium on accommodation development coupled with a reduction to acceptable levels of the current accommodation provision. This should improve occupancies not only in the winter months but also during other seasons. The North West constitutes almost 40% of total accommodation. This level places pressure on existing establishments to achieve acceptable occupancies during the low season. The resort needs substantial improvement to change its image from a seasonal mono-functional resort to an all year round multi functional destination. This will also ensure that hotels achieve better rates.

The transformation to achieve is THE REDEFINITION AND RESTRUCTURING OF THE NORTH WEST TOURIST PRODUCT TO ACHIEVE A CHANGE IN THE IMAGE OF THE RESORT THROUGH INNOVATIVE PRODUCT OFFERS ASSISTING THE PROMOTION OF THE AREA AS AN ALL YEAR ROUND DESTINATION.

In terms of the marketing activities that need to be undertaken the following were some of the suggestions:

- a) Promotion of existing features that would diversify the product offer of the area – historical and ecological features.
- b) Promote activities during the winter and shoulder months to assist accommodation establishments in attracting clientele that would otherwise go to other localities.
- c) Promote investment into family attractions since this is the main market for this area, although the winter months can attract a more senior citizen.
- d) Due to favourable weather conditions tour operators can market the area as a summer during winter resort.
- e) Work with tour operators to promote the resort differently than is being done, highlighting the offers and product of the North West capitalising on the natural areas and attractive coastal features.
- f) Promote new market niches with tour operators – e.g. rural tourism activity, country walks, cycling, diving, etc.

The new design of the Malta Tourism Authority (MTA) brochures should also assist in achieving a better image of this resort. However, this must be coupled with the right policies, which should steer the resort towards a different image than it is currently associated with. This also requires the collaboration and participation of the existing establishments particularly in a programme of product renovation. This is long term but should lead to a more sustainable tourist destination in the future.

Diving in the North West

The third SI discussed concerned the level of diving activity in the North West and specifically the number of annual divers in the area. The North West has a number of popular diving sites, particularly the Cirkewwa site. However, the lack of proper management and organisation is resulting in the crowding of specific diving sites. Although this indicator refers to the annual number of divers one should possibly consider the annual number of dives, since divers dive more than once during their stay and specifically the number of dives during a particular time, say one day. This is an indicator of the pressures in the area resulting from this activity. However, there might be some problem to collect data and the annual number of divers is a proxy indicator.

Scenario 1: Numbers of annual divers increases

The annual number of divers to the area will continue to increase without proper controls and management measures. The popularity of specific sites will result in further concentration of divers in the same sites creating additional damage. Promotion of these sites will also lead to additional divers.

Scenario 2: Number of divers increases but crowding levels reduced

Through the introduction of management measures the diving activity can be regulated ensuring that an adequate and suitable number of divers dive in a specific site at the same time. Although annual numbers of divers increase, yet these are spread both spatially and temporally. This would require less

promotion on the popular sites and increased promotion of other sites as well as the improvement of facilities at such sites e.g. access. Diving schools also need to co-ordinate amongst themselves and organise better their diving programmes to avoid crowding at diving sites.

Scenario 3: Annual number of divers increases but dives at specific sites are limited

This scenario allows an increase in the number of divers but placing a capping on specific sites to limit the crowding in these areas. This will entail introducing management measures at these sites to regulate usage and possibly introducing group booking procedures. This scenario will entail setting capacity limits for the number of divers at one time.

The transformation to achieve is TO GAIN SUPPORT FOR THE SETTING UP OF MARINE CONSERVATION AREAS WHICH INCLUDE THE DIVING SITES.

In terms of the marketing activities that need to be undertaken the following were some of the suggestions:

- a) To promote other potential diving sites thus reducing crowding in the popular sites.
- b) Improve facilities at other sites to encourage their use and enhance their attractiveness.
- c) To formulate a Code of Ethics for divers
- d) To promote co-operation between the diving schools through the Diving Schools Association and through the use of information leaflets for divers and tour operators operating in this sector.

Marine Conservation Area

The evaluation of the SIs with regard to the Marine Conservation area shows that the locality is currently under risk particularly as a result of the bunkering operations and the nearby sewage outfall. Although the quality of the marine environment, particularly bathing water showed some improvement during recent years, the risk still exists and this is shown by the decline in water quality between the 1999 readings and the 2000 readings. This further emphasises the need for a management structure and measures for the area as well as continual monitoring of the MCA and the various activities being undertaken in the vicinity. The risk of further development along the coastal stretch is a threat to the conservation of this relatively pristine coastal stretch, even though some tourism development has occupied a prime coastal site.

The following represents the scenario building and marketing exercise undertaken in collaboration with the Marine Conservation Area (MCA) project team. The geographical area investigated by the MCA team within the Northwest region extends from Irdum Majjiesa in the North to Raheb Cave in the South.

The Sustainability Indicators (SIs) highlighted below and which will be analysed for this scenario building and marketing exercise have been selected from a number of indicators gathered with respect to the MCA project:

- a) seawater quality;
- b) pleasure craft; and
- c) bunkering operations.

The following were the main criteria considered when undertaking the selection of these indicators:

- a) relevance to this particular exercise;
- b) data availability, probably the most important of the criteria considered;
- c) stakeholder availability, in order to assist in gathering data and to provide guidance if possible; and
- d) marketing possibilities, given that this is a primary objective of the exercise.

Lack of adequate data led to the elimination of recreational diving. However, it is important to note that recreational diving activities in the region under consideration are limited primarily to instructor-guided tours in the Anchor Bay area. This indicator may thus be considered as not being highly relevant for the purposes of this exercise.

Seawater Quality

This first indicator measures the *faecal coliform* count of the seawater, thus highlighting the suitability of the water for bathing purposes and consequently the level of risk to human health. A number of sea water samples are collected from five stations located at Golden Bay, Ghajn Tuffieha and Gnejna, on a weekly basis between May and October. These samples are then analysed for *faecal coliform* count and classified according to the Barcelona Convention Criteria, that is:

- *First class water*; stations in which *faecal coliform* counts are less than 100 per 100 millilitres (ml) in at least 95% of a minimum of ten samples collected throughout the whole bathing season;
- *Second class water*; stations in which *faecal coliform* counts are less than 100 per 100 millilitres (ml) in at least 50% of the samples, and less than 1000 per 100 ml in at least 90% of the samples, calculated on a minimum of ten samples collected throughout the whole of the bathing season; and
- *Third class water*; stations which do not conform to the Barcelona Convention Criteria.

In order to facilitate the analysis of this indicator, a numerical value was attributed to the different classes highlighted above (1st class = 10, 2nd. class = 5, 3rd. class = 0). Given the presence of five stations, the maximum possible number

of points for the whole area was 50. The following results were obtained for the 1995 – 2000 period (Table 4).

Year	1995	1996	1997	1998	1999	2000
Points	40	45	50	45	50	40

Table 4. Points attained with regard to faecal coliform readings

During the years under consideration, the area was characterised by either a first or second-class water quality, with the former one predominating. It is important to highlight the fact that the decline recorded between 1999 and 2000 was probably due to factors such as sewage pollution from Anchor Bay, which lies just outside the area investigated, being carried southwards under certain meteorological conditions. According to official plans, operations at this outfall should be terminated by 2005/2006. For the purposes of the current exercise, scenarios have been developed which involve the possibility of the sewage outfall plant at Anchor Bay continuing with its operations. Three scenarios have been identified with respect to this indicator.

Scenario 1: The sewage outfall at Anchor Bay remains operational with a concurrent increase in development in the region

Given the projected higher local population, the number of tourists residing in or visiting the area and the subsequent expansion in the total number of amenities, it is to be expected that the amount of liquid waste in the area's sewerage system will increase. Hence, the load on the outfall at Anchor Bay would rise significantly, posing a greater environmental threat to the area under consideration.

Scenario 2: The sewage outfall at Anchor Bay remains operational with no concurrent increase in development in the region

Although this scenario still involves an operational sewage outfall at Anchor Bay, the lack of any notable increase in developments in the area implies that the environmental threat is reduced significantly. The situation would subsequently be very similar to the *status quo*. This should not be considered as an altogether negative outlook, especially in light of the figures highlighted in the table above, which indicate that the seawater quality is quite acceptable.

Scenario 3: The sewage outfall at Anchor Bay ceases operations and a wastewater treatment plant used in its place

In the event that operations at the sewage outfall at Anchor Bay are wound up and replaced by a waste water treatment plant, then it stands to reason that the significant reduction in the threat of sewage pollution in the area is practically eliminated. The seawater quality in the area would thus be expected to improve.

The transformation to be achieved thus involves THE ELIMINATION OF THE SOURCES OF SEWAGE POLLUTION IN THE AREA. Subsequent marketing activities designed to achieve this aim may thus involve the following:

- a) Promoting the closure of the outfall thereby completely eliminating the major sources of sewage pollution in the area. This may also involve

marketing campaigns amongst the general public in support of this objective;

- b) Promoting the adoption of the MCA for the area; and
- c) Limiting the number of inland developments in the region. This may involve promoting the development of tourist facilities in the south of the island or other locations, away from the already congested north.

Pleasure Craft

This second indicator is also considered to be important in light of the environmental and sound pollution usually created in the areas these pleasure craft operate in. Given that the number of pleasure craft that berth in the area under consideration is limited and given that other boats that berth in other parts of the island may sail there, it was decided to take into consideration the latter data. This indicator thus reflects the number of seacraft registered in the Small Ships Register since this accounts for those craft that are licensed to sail strictly in territorial waters.

Table 5 highlights the increase in the registration of seacraft in the Small Ships Register from 1996 until July 2001.

Year	1996	1997	1998	1999	2000	Jan–July 2001
New Registrations	581	607	511	442	521	406

Table 5. Annual new seacraft registrations

As highlighted by the data in Table 5, there does not seem to be any real verifiable trend in the number of new registrations. The increase recorded in 1996 - 1997 was quickly followed by a decline throughout 1997 - 1999. The number of new seacraft registered seems to have risen. The following scenarios are illustrated with respect to this indicator.

Scenario 1: An increase in the number of pleasure craft sailing in the area

Such an increase in the number of pleasure craft can be caused by several factors. These include additional marina developments, since this should lead to an overall increase in the number of craft berthing in Malta. Introducing sailing restrictions in other parts of the island may also lead to an increase in pleasure craft activity in the area under consideration. Other factors include promoting the area for recreational and diving activities as well as granting permission for land developments, such as hotels, which operate marine craft for use by their residents.

Scenario 2: A more subdued rate of increase in the number of pleasure craft

The number of pleasure craft that may make use of the area under consideration may possibly be controlled through enforcement measures including security patrols. Controlling the number of land developments should help in controlling the number of craft berthing in the area under consideration.

Scenario 3: No increase or a decline in the number of seacraft

A number of policies may halt the increase in the number of registered seacraft or even lead to a decline. Limiting marina developments on the island, banning

the number of seacraft that can sail in the area and implementing the MCA plan may all help in achieving this objective.

The transformation to be achieved thus involves RESTRAINING SEACRAFT ACTIVITY IN THE AREA UNDER CONSIDERATION. Marketing may involve the following:

- a) Limiting the development of yacht marinas on the island;
- b) Promoting alternative sites for tourism and diving purposes; and
- c) Using the media to promote the need to protect the area.

Bunkering Operations

The third indicator related to the number of bunkering activities. These are undertaken around the Maltese Islands, primarily at a site offshore from ic-Cumnija, in the North West of the island as well as, more commonly, at a site located off the North East coast. The nature of the activities undertaken involves the transfer of fuel to ships at anchor and poses several environmental risks. Data for the total number of bunkering operations undertaken around the Maltese islands as well as off the NW coast were supplied by the Malta Maritime Authority and are highlighted in the following table.

Year	1997	1998	1999	2000
Total	440	498	559	669
NW Malta	88	87	139	129

Table 6. Number of bunkering operations

As highlighted by the data in Table 6 above, the total number of bunkering operations around the Maltese Islands rose throughout the 1997 – 2000 period. With respect to operations off the Northwest coast, an increase was recorded between 1998 and 1999, with a slight decline following in 2000. It is thus noteworthy that (a) the number of bunkering operations off the Northwest in 2000 exceeded that during 1997 by a significant margin and (b) the total number of operations has been rising. The following scenarios are investigated for this particular indicator.

Scenario 1: The *status quo* prevails

In this scenario the *status quo* prevails and bunkering activities continue to be undertaken off the Maltese coast in the same locations. This could occur if no actions are taken to limit the level of business in this particular sector and if no limitations are imposed on where such bunkering activities take place.

Scenario 2: Limit bunkering activities in other areas without limiting the overall level of such activities

This is probably a worst case scenario since it could lead to an increase in the number of bunkering activities undertaken off the NW coast. Policies that may lead to this outcome would include implementing environmental management plans in other coastal areas, such as the North East, or imposing tighter regulations because of other economic activities.

Scenario 3: Limits are imposed on bunkering activities in the North West

This represents the best case scenario since it directly limits bunkering activities near the area under consideration in this exercise. Implementing the MCA plan is one such policy within this respect.

The transformation to be achieved involves RESTRAINING THE LEVEL OF BUNKERING ACTIVITY OFF THE NORTH WEST COAST OF THE ISLAND. The marketing could involve some of the following:

- a) Using advertising/media techniques to promote the concept of reducing bunkering activities off the island's coast;
- b) Highlighting real accidents that occurred abroad; and
- c) Emphasising the use of alternative sites.

Integrated Water Resources Management

Within the CAMP project context, an exercise was carried out to develop some indices, which could be used to assess the sustainable use of water resources in Malta and specifically for the North West. Ten indicators were short listed. Although the project did not envisage a public participation exercise, the SIs were identified as being important indicators for water resources management. Data on these SIs have been collected for a number of years and the bands of equilibrium or the maximum and minimum levels, in most of the SIs relate to quality standards that need to be adhered to (e.g. EU water quality directives).

The following is the list and description of the SIs for this project:

- use index: This index has been defined as the percentage of actual public water users to the maximum potential public water users,
- water affordability: This index refers simply to the water tariff charged to domestic consumers,
- water consumption: This is the amount of water consumed and includes all metered water consumed per capita per day,
- leaked water: This refers to the amount of water produced which is leaked during distribution and is measured in m³/hour.
- Treated Sewage Effluent (TSE) recycled water: This refers to the amount of recycled treated wastewater and is measured as a percentage of water consumed.
- quality of drinking water: The quality of water indicators is evaluated on the basis of nitrate and chloride levels in the water consumed.
- quantity of produced water: This indicator refers to the amount of water produced through Reverse Osmosis plants in the NW (Cirkewwa and Lapsi).
- piezometric levels: Piezometric level is the height of the water table above the mean sea level.
- pollution in groundwater: This indicator is measured on the basis of the nitrate levels in the groundwater.

Comments on the indices

Table 7 illustrates the bands of equilibrium for each indicator and data for each indicator for specific years. Most of the bands of equilibrium, as indicated above, have been defined by using established standards, whilst the bands for some indicators were established during workshops.

Sustainability Indicator	Note	Maximum	Minimum	1990	1995	2000
Use index	% of total users	100	85	99	99	99
Water affordability	Lm/m ³	1.1	0.12	0.105	.327	0.516
Water consumption	Litres per capita per day	150	90	77.9	88.2	72.9
Leaked water	m ³ /hour	600	300	2421	2800	1200
TSE recycled water	% of water consumed	80	50	1.5	1.4	4.6
Quantity of water produced	Million m ³ /year	20	10	39.59	51.61	35.15
Piezometric levels	Metres	3.25	0.5	2.81	2.63	3.11
Pollution in ground water	Nitrates (mg/l)	50	25	67.4	70.1	65.27
Quality of drinking water	Chlorides (mg/l)	800	200	457	711	517
Quality of drinking water	Nitrates (mg/l)	50	15	75	54	56

Table 7. List of SIs for Integrated Water Resources Management Project

The thematic team on this project has identified possible future scenarios with regard to specific SIs. These scenarios and implications are presented below.

Treated Sewage Effluent (TSE) recycled water

This is likely to increase in future particularly since Government is committed to meeting the wastewater directives in this regard and will be constructing sewage treatment plants in the near future. To date, there is only one plant in the South East area of the Island. Thus, the flushing of untreated liquid waste into the sea will be stopped and an amount of secondary class water will be available for use. However, it would seem that the nitrate levels, which will still be present in the recycled water would limit its use for irrigation. Other types of waters exist which can be used and reused including potable water in households. So, there is still some doubt whether such an index can be reliable and useful in water management terms. But it is useful to start thinking in this way where it comes to sustainability since recycling and reuse of water in general will surely benefit to a sound sustainable water management.

Quality of drinking water

Two SIs have been identified measuring nitrate and chloride levels. Data collected with regard to nitrate levels are above what is considered as a sustainable level whilst chloride levels are within the band of equilibrium.

With regard to nitrate levels in drinking water the following potential scenarios may occur:

- a) Nitrate levels will increase – This scenario will result should farmers increase their use of fertilisers coupled with the use of recycled wastewater.
- b) Nitrate levels will stabilise at current levels – Education and training on new cultivation methods and the implications of current practices would

encourage a reduction in the use of such fertilisers, especially if the public will become more conscious on eating safe food. The Water Services Corporation will increase its efforts in polishing ground water to achieve acceptable levels.

- c) Nitrate levels will decrease – The practices of organic farming should these increase through information and training as well as incentives would result in a decrease in the nitrate levels in ground water and subsequently in the drinking water.

Actions to be taken to continually improve the quality of drinking water include:

1. Inform and train farmers with regard to organic farming;
2. Leaflets to consumers on aspects relating to consuming organically farmed produce;
3. Information to farmers encouraging a reduction in the use of chemical fertilisers and pesticides;

The two SIs need to be monitored since they can have an effect on each other (e.g. more intrusion of chlorides from sea may lower the nitrate content).

Quantity of water produced

The likely future scenario would be a decrease in the water produced through Reverse Osmosis Plants in the short term but the production of water may increase in the long term following an increase in the resident population in the NW. This is the result of a number of initiatives since the mid-90s whereby Government launched awareness campaigns for the public to save on water, improved the distribution systems to reduce leakages and through water conservation measures e.g. recycling and re-use.

The production from the plants in Cirkewwa and Lapsi have shown decreases in production, which although decrease production costs, nonetheless result in an excess capacity. To achieve further decreases in water produced would require the following actions:

1. An ongoing awareness programme on saving water;
2. The reuse of recycled water not only for irrigation but for other appropriate uses particularly in tourist accommodation facilities;
3. Improving distribution systems and enforcing theft of water;
4. Improving water production efficiency to decrease energy generated for this purpose and reduce the level of emissions from the power stations.

Integrated water resources management and sustainable development

One must first comment that the maxima and minima pre-set for the various indices are either standard or based on international standards such as WHO or EU whilst others e.g. use index, TSE recycled water and piezometric levels have been established on the basis of experience and general national objectives. For example, everyone would agree that a 100% use index is desirable. In fact, the use index is already over 99% and has been fixed at 99% since attainment of 100% may never be possible even though current levels are close enough. Thus in terms of servicing the customer with water in the NW region one can say that all water users are serviced through the water distribution system.

The water consumed reflects normally the needs of each consumer. However, such needs may hide wastes within the use itself due to subsidies or low water cost. Hence, the general tendency to reduce water consumption is to be retained as an improvement especially when one considers that post-1995, there was a general improvement in the method to measure and check un-accounted for water. The figures indicate that per capita water consumption is below the minimum level and although not in the sustainability band nonetheless the levels indicate less pressure on demand for water resources.

The tendency in the reduction of leaked water is marked. This is on the decrease although not yet within the band of equilibrium. Further improvements and enforcement actions would further reduce the level of unaccounted for water. However, there is a bottom line below which it may not be economically viable to invest further and concentrate resources to attain a lesser percentage of leaked water.

As mentioned previously, the concept and culture of recycling water is still in its infancy. There is, currently, only one sewage treatment plant with three more plants to be constructed and commissioned within the next few years with one being in the NW. The actual use of the treated water is something else since this has to be combined with a good education to potential users regarding its benefits. Other recycling techniques and other recyclable and reusable water need to be studied and eventually launched. At a private level, little is known regarding any recycling being actually exercised, with the exception of a couple of hotels in the North West. As long as potable water is affordable, there is little incentive for any recycling and the recycling techniques may still be too prohibitive to afford. The figures produced in Table 7 reflect only the TSE use to-date. The maxima and minima are levels that would gradually be achieved once the sewage treatment plant in the NW is in place and with EU directives all sewage should be treated before being

As mentioned previously, there is a general trend to reduce water production especially where Reverse Osmosis (RO) is concerned. More importance is now being given to improve water quality in general by introducing groundwater polishing. Figures included in Table 7 tend to show a reduced production of water especially after 1995, where water conservation schemes and increased production costs have put their mark on the slowdown and reversal of water production. This is positive but there is more room for improvement especially when alternative water resources are efficiently introduced into our daily needs and economic activities, which will eventually limit the use of more costly potable water.

There was a decrease in the piezometric levels between 1990 and 1995. At first, it was thought that this drop was due to over extraction by the Government. However, two surveys (1993 and 1997), indicated that the private extraction had exploded to such an extent that in actual fact, this had exceeded public sector extraction, which was being regulated. This can be corroborated, though not in real figures, by the numerous quantities of boreholes illegally drilled, the capacities of pumps being sold locally for such boreholes, the increase in irrigated areas and the ever decrease in quality of the groundwater quality especially in the increasing chloride levels. These levels are also affected by rainfall. The increase in level for 2000 is mainly due to local effects in one

particular gauging borehole. Unfortunately, this may not reflect the actual situation. With regard to this SI ongoing monitoring of the indicator is important to ensure an adequate water table level.

With regard to the pollution of groundwater, one must note that there was a slight improvement in the index for 2000. This value is an average weighted value. During 2000, certain groundwater sources exhibiting high nitrate values and which fed directly into the distribution network, were put off line and will eventually await polishing to be put again on line. In general, their values are still high for being consumed directly without blending or polishing.

Last but not least with regard to the quality of drinking water, the values taken are also average weighted values and so reflect the total actual production at the time of sampling and testing of the water. It is obvious, looking at the figures that there was a marked improvement in the drinking water quality with chloride readings within the acceptable levels but nitrate levels, although decreasing are still outside the standards expected. The improvement overall is mainly due to shutdowns of sources with high chloride and nitrate levels where these could not be blended with Reverse Osmosis (RO) water prior to distribution.

The main SIs for water resources management indicate that in certain aspects more initiatives are needed to achieve the desired level of sustainability e.g. nitrate levels in drinking water and groundwater, leaked water. Actions are needed to reduce private extraction from the ground water and awareness campaigns to farmers to reduce the use of hazardous pesticides that increase the nitrate levels in the ground water.

The approach taken in this particular activity differed from that taken by the other projects, especially with regard to the interaction with stakeholders. The possible future scenarios were a result of indications given by the team and were not stakeholder generated. It is likely that should stakeholders be involved, the final list of SIs may change and reflect the opinions of the stakeholders. It was also indicated that for the SIs identified it was not necessary to determine bands of equilibrium with stakeholders since the bands of equilibrium were standards already set primarily in EU Directives on drinking water quality.

Tourism and Health

The Tourism and Health activity within the CAMP Project developed a number of indicators that could be used for the monitoring of tourist health in the North West of Malta. These included:

1. Number of outbreaks of Gastroenteritis
2. Number of individual cases of Gastroenteritis
3. Risk Factor Grading of Hotels and Catering Establishments
4. Rodent Control – Number of takes from bait placed
5. Rodent Control - Number of complaints from local residents
6. Beach Quality as compared to Blue Flag Criteria
7. Beach Quality as compared to a list of 'Health' Criteria
8. Bathing Water Quality
9. Media Interest in Tourist health

All the above indicators were useful to help the team monitor the progress of the activity especially during the work phase of the project, in particular, Beach Quality compared to Blue Flag criteria, to health criteria and media interest in Tourist health. Rodent control, using the number of takes from bait, also helped monitor the state of cleanliness of the beaches studied and the effectiveness of the programme used during the field work of the activity. However, such indicators were only useful for the duration of the activity and were therefore short-term indicators, since past data was not available since it had not been collected previously.

In the case of outbreaks and individual cases of gastroenteritis, catering establishment inspections and bathing water quality, these indicators could be compared to previous years to study trends and extrapolate under various scenarios.

Outbreaks and individual cases of Gastroenteritis

Trends can be seen in tables below.

Year	No. of cases in NW Malta	Total number of cases in Malta
1997	8	25
1998	6	18
1999	5	18
2000	7 (1 imported)	19 (1 imported)

Table 8. No. of gastroenteritis cases (whole year)

Year	No. of outbreaks in NW Malta	Total number of outbreaks in Malta
1997	2	5
1998	1	2
1999	6	10
2000	5 (1 imported)	12 (1 imported)

Table 9. No. of gastroenteritis outbreaks (whole year)

Year	No. of cases in NW Malta	Total number of cases in Malta
1997	6	17
1998	5	15
1999	4	15
2000	6	11

Table 10. No. of gastroenteritis cases during study period (end May – end October)

Year	No. of outbreaks in NW Malta	Total number of cases in Malta
1997	2	4
1998	1	1
1999	2	2
2000	4	8

Table 11. No. of gastroenteritis outbreaks during study period (end May – end October)

Catering Establishments Reports

The inspections of all catering establishments showed an improvement over the years as can be seen in the tables and graphs below. The Catering Establishments are given a rating from Grade A to Grade F, with Grade A being the best grade possible. Before such a grading is awarded, the premises are given a risk assessment factor expressed as a percentage. These are as follows:

Risk Assessment Factor	Grading
Up to 29%	A
30% to 39%	B
40% to 49%	C
50 – 59%	D
60% to 69%	E
70% and over	F

Grade	1998	1999	2000	
			1 st inspection	2 nd inspection
A	0	0	0	0
B	1	4	4	3
C	18	14	18	14
D	6	5	3	8
E	0	2	0	0
F	0	0	0	0

Table 12. Grades given to hotels following inspections for specific years in the NW

Source: Catering Establishments Inspections, 2000. Food Safety Branch, Public Health Dept.

Grade	1 st inspection	2 nd inspection
A	1	1
B	2	6
C	37	40
D	27	23
E	11	12
F	4	3

Table 13. Grades given to catering establishments' inspections for 2000 in the NW

Source: Catering Establishments Inspections, 2000. Food Safety Branch, Public Health Dept.

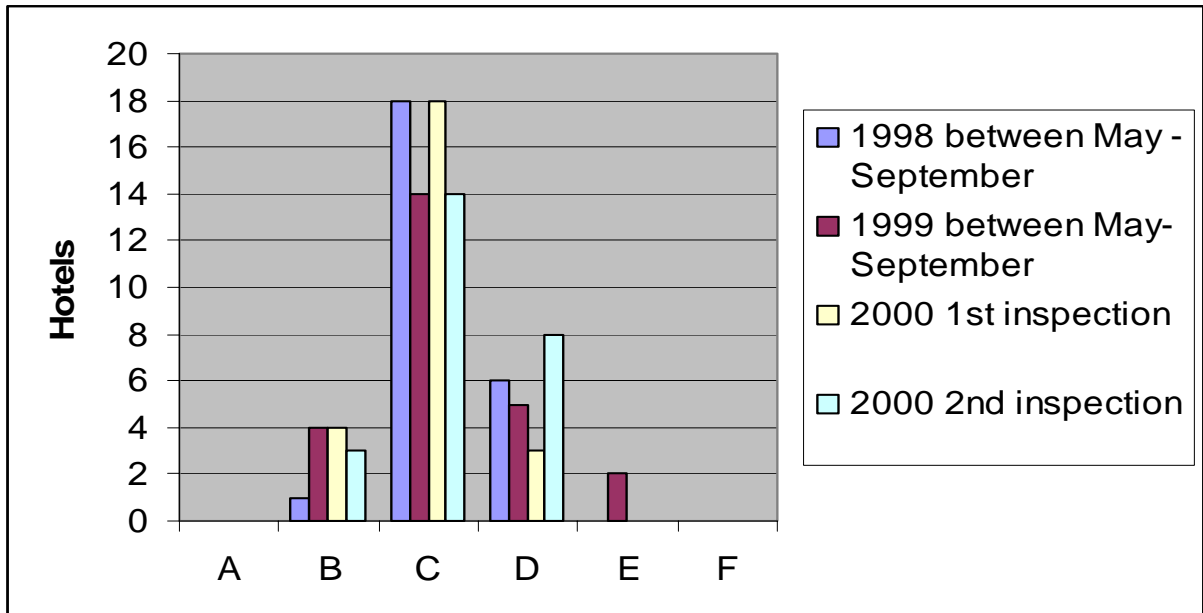


Figure 7 Hotel Inspections

Source: Catering Establishments Inspections, 2000. Food Safety Branch, Public Health Department

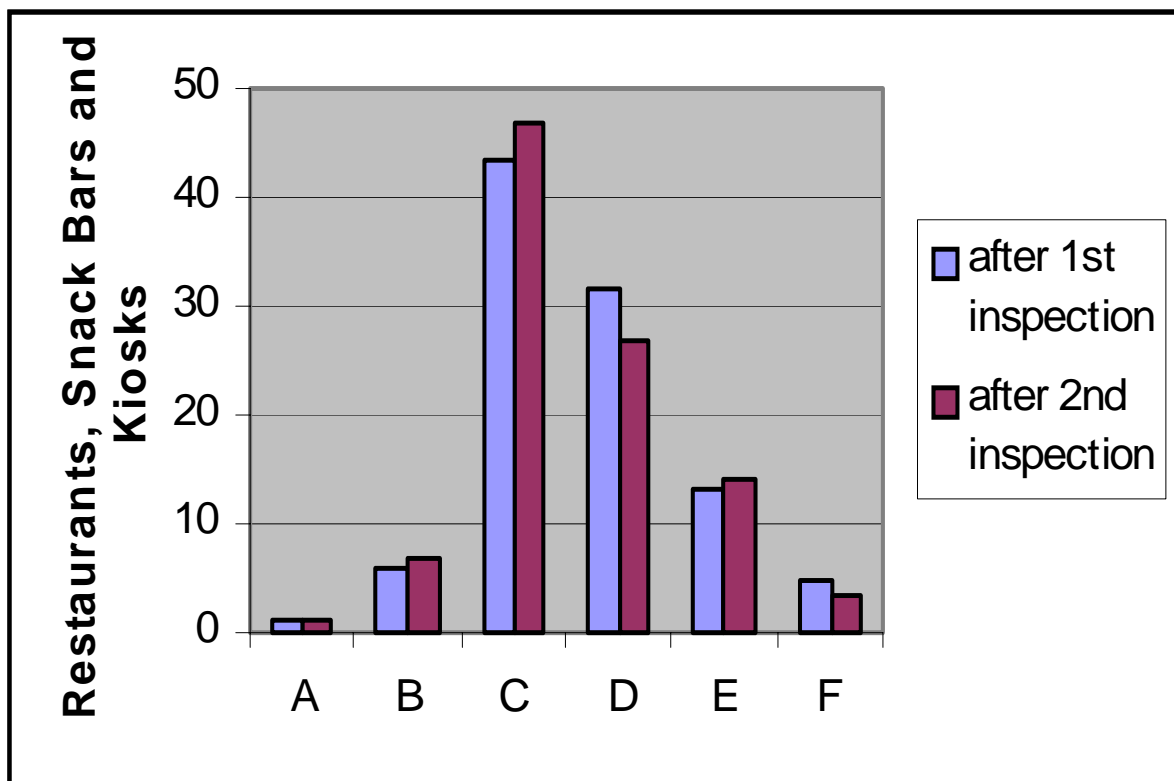


Figure 8. Inspections to catering establishments

Source: Catering Establishments Inspections, 2000. Food Safety Branch, Public Health Department

Pest Control

The success of the intensive programme carried out during the field work phase of this activity can be seen in the table of complaints below which show that there was a marked decrease in registered complaints in 2000 as compared to previous years.

	Suncrest – Fra Ben Area	Fra Ben – Dolmen Area	Xemxija (Church - Simar Area)
1995	3	2	4
1996	2	2	2
1997	6	2	1
1998	4	2	1
1999	6	7	1
2000	0	0	1

Table 14. Complaints lodged at the Rodent Control Office between May and October

Source: Rodent Control Section, Department of Public Health

Bathing Water Quality.

The individual sampling sites were compared to previous years to try to establish the trend at each particular site. There were varying trends at each bay with some showing deterioration, some remaining stable and some improving the quality of their bathing water.

Grade A water is the best quality registering less than 100 coliforms per 100mls of water. Grade B water does not warrant closure but acts as a warning that there may be some sewage effluent at that site and may require closer observation over the next sampling days. This is equivalent to >100coliforms but <999 coliforms per 100mls of water. Grade C warrants immediate action being taken, since such a grading registers a >1000 coliforms per 100mls, with a repeat sample taken immediately to confirm the poor state of the water. If confirmation occurs the length of the beach is immediately closed to bathing till three successive samples are of Grade A quality.

A first glance at the figures in the two Tables below indicate that there is a serious problem in the western coastal stretch of the NW with a low percentage of the readings falling within Grade A for the areas of Golden Bay, Ghajn Tuffieha and Anchor Bay, possibly a result of the sewage outfall in the vicinity of Anchor Bay. Bugibba and Qawra have also shown a decrease in reading falling under Grade A over the last years.

Site	Year	Grade C	Grade B	Grade A
Qawra	1996	2 (1.75%)	28 (24.56%)	84 (73.68%)
	1997	0	9 (8.18%)	101 (91.81%)
	1998	2 (1.81%)	18 (15.65%)	95 (82.6%)
	1999	6 (5.26%)	51 (44.73%)	57 (50%)
	2000	3 (2.6%)	44 (38.26)	68 (59.13%)
Bugibba	1996	1 (1.08%)	28 (30.43%)	63 (68.47%)
	1997	2 (2.17%)	14 (15.21%)	76 (82.6%)
	1998	0	15 (16.30%)	77 (83.69%)
	1999	2 (2.17%)	30 (32.6%)	60 (65.21%)
	2000	1 (1.14%)	23 (26.43%)	63 (72.41%)
St. Paul's Bay	1996	2 (0.87%)	64 (28.07%)	162 (71.05%)
	1997	8 (3.49%)	58 (25.32%)	163 (71.17%)
	1998	2 (0.89%)	41 (18.30%)	181 (80.80%)
	1999	9 (3.96%)	83 (36.56%)	135 (59.47%)
	2000	2 (0.91%)	61 (27.85%)	156 (71.23%)
Golden Bay	1996	2 (4.54%)	11 (25%)	31 (70.45%)
	1997	0	8 (17.39%)	38 (82.60%)
	1998	0	8 (18.18%)	36 (81.81%)
	1999	2 (4.34%)	22 (47.82%)	22 (47.82%)
	2000	2 (4.44%)	19 (42.22%)	24 (53.33%)
Ghajn Tuffieha	1996	1 (2.32%)	4 (9.30%)	38 (88.37%)
	1997	0	10 (21.73%)	36 (78.26%)
	1998	2 (4.54%)	1 (2.27%)	41 (93.18%)
	1999	0	11 (23.91%)	35 (76.08%)
	2000	1 (2.22%)	13 (28.88%)	31 (68.88%)

Table 15a. Frequency of sample readings conforming to each grading

Site	Year	Grade C	Grade B	Grade A
Anchor Bay	1996	0	9 (40.9%)	13 (59.09%)
	1997	0	7 (30.43%)	16 (69.56%)
	1998	3 (13%)	8 (34.78%)	12 (52.17%)
	1999	0	10 (43.47%)	13 (56.52%)
	2000	1 (4.34%)	11 (47.82)	11 (47.82%)
Gnejna	1996	0	3 (13.63%)	19 (86.36%)
	1997	0	6 (26.08%)	17 (73.91%)
	1998	1 (4.76%)	6 (28.57%)	14 (66.66%)
	1999	0	6 (26.08%)	17 (73.91%)
	2000	0	8 (34.78%)	15 (65.21%)
Mistra bay	1996	2 (4.54%)	12 (27.27%)	30 (68.18%)
	1997	0	7 (15.21%)	39 (84.78%)
	1998	1 (2.17%)	5 (10.86%)	40 (86.95%)
	1999	0	6 (13.33%)	39 (86.66%)
	2000	0	9 (20.45%)	35 (79.54%)
Mellieha Bay	1996	2 (1.44%)	24 (17.39%)	112 (81.15%)
	1997	1 (0.73%)	23 (16.91%)	112 (82.35%)
	1998	0	28 (20.74%)	107 (79.25%)
	1999	2 (1.44%)	33 (23.91%)	103 (74.63%)
	2000	3 (2.17%)	23 (16.66%)	112 (81.15%)
Armier	1996	0	3 (13.04%)	20 (86.95%)
	1997	0	2 (8.69%)	21 (91.30%)
	1998	0	4 (18.18%)	18 (81.81%)
	1999	0	5 (21.73%)	18 (78.26%)
	2000	1 (2.17%)	7 (15.21%)	38 (82.60%)
Cirkewwa	1996	0	3 (6.52%)	43 (93.47%)
	1997	0	4 (8.69%)	42 (91.30%)
	1998	0	4 (9.3%)	39 (90.69%)
	1999	0	4 (8.69%)	42 (91.30%)
	2000	0	3 (6.52%)	43 (93.47%)

Table 15b. Frequency of sample readings conforming to each grading

Soil erosion and Desertification Control

The list of SIs for this specific thematic project was drawn up and discussed in detail during the various SPSA workshops. In addition the preliminary list has also been discussed with the main stakeholders, especially the Agricultural Cooperatives.

The final list of SIs is the following.

Official flood warnings – This indicator is measured by the amount and intensity of precipitation and is presented in terms of the number of official warnings. Precipitation intensity and amount is a crucial factor in determining the extent of soil erosion. No data is yet available for this SI.

Scenario 1 – Number of flood warnings will increase

This will come about as a result of more surface areas taken up for urban expansion and also due to the increased connectivity of the road network. The removal of soil cover for urban expansion will increase the number of warnings as more areas become prone to flooding.

Scenario 2 – Number of flood warnings decrease

This will result through a number of factors, which include the increased experience within the Civil Protection Department to handle such eventualities, improved road construction (e.g. culverts and their maintenance) and further control of urban sprawl.

Land tenure – This is given as the percentage of agricultural land owned and farmed by the occupying farmer. If land is owner farmed there is more concern over the maintenance of the field. Recent data for the NW has not been published as yet. Nonetheless, data for specific areas, e.g. Tas-Santi valley has been collected and used.

Year	Total cultivated land	Owner cultivated land	Land leased out
1978	12585 ha	1170 ha	9342 ha
1982	11639 ha	1221 ha	9223 ha
1991		1760 ha	9269 ha

Table 16. Land tenure

Scenario 1 – Land tenure will increase

The amount of agricultural land farmed by owner is increasing as a percentage of total cultivated land as decreases are experienced in the amount of cultivated land leased out to farmers. Farmers owning land they work are more willing to invest in agricultural productivity of their holdings through proper irrigation, water retention structures and maintaining rubble walls.

Scenario 2 – Land tenure will decrease

This may result as the interest in the agricultural sector diminishes particularly as a result of competition from imported products. As farmers grow older they may abandon their fields thus encouraging further erosion due to lack of maintenance.

Number of claims for compensation – This is the number of annual claims filed with the Agricultural Department for compensation as a result of storm related damages. The lesser the claims the lesser the erosion.

It is very likely that the number of claims in the future will decrease and possibly stabilise. This is a result of better maintenance of rubble walls and protection measures that should decrease the prospect of erosion occurring as a result of storm damage. More ownership of cultivated fields should encourage more maintenance. However claims may also decrease, as farmers are discouraged from reporting damages if they perceive that their claims are ignored. It is also important that all farmers are compensated whether owners or not.

Date of Storm	Number of reports filed
November 1998	72
September 1997	50
October 1995	217
December 1988	853
October 1979	104
December 1973	207

Table 17. Claims for compensation following storm damage for specific years

Number of breaches in rubble walls – This refers to the number of points along a rubble wall where the level of soil is higher than the retaining rubble wall and exposing the soil layer at that particular point.

Length of breaches in rubble walls – This SI measures the length in metres of the breaches in the rubble walls.

This SI is very laborious and time consuming due to the fact that measurement and calculation of the length of the breaches have to be done by going on site. Some data for specific areas has been recorded.

Locality	Number of breaches	Length of breaches
Tas-Santi	11	69.8 metres
Burmarrad	11	547 metres

Table 18. Breaches in rubble walls in specific areas within the NW

Scenario 1 – Breaches in rubble walls will increase

This will happen as a result of a decreasing agricultural sector and therefore less maintenance of the fields. Should land tenure decrease this will adversely affect the state of rubble walls that will continue to deteriorate.

Scenario 2 – Breaches in rubble walls will decrease

This will entail specific actions, which include incentives to farmers to maintain their fields, interventions by specific Government agencies to rebuild rubble walls.

The following Marketing actions were identified to encourage good land stewardship, which should decrease soil erosion:

1. Identify core campaign message;
2. Identify main customer (farmers & land owners);

3. Select promotional method – Content, info packs for landowners individually;
4. Identify key persons in co-ops, pitkali (the vegetable market) and extension services, etc. to act as focal points;
5. Info packs, etc., for local persons and cultivate a relationship with them;
6. Sell idea to politicians with cost/benefit analysis;
7. Monitor results and adapt.

Conclusions

The above discussion is in itself an indication that there is still a lot to be done to be able to assess the overall sustainability of the various activities in the North West of the island. Although on the level of specific SIs it would seem that some level of sustainability is apparent e.g. abandoned agricultural land, tourism occupancies, an overall assessment of the North West would indicate that co-ordinated efforts are necessary to ensure an overall sustainable development of the area and not within specific sectors only.

Some indicators may need further examination since they may be showing only part of the picture. For example, although tourism accommodation occupancies are within the bands of equilibrium, room rates may be lower than desired.

More data needs to be collected to determine specific SIs and particularly to identify trends to assist in projecting likely future situations should trends persist and examine how negative trends can be changed to achieve desirable situations.

The SPSA process indicates the various pressures on this area resulting from the different functions practised in the area. There seems to be little co-ordination between the various sectors, which is the reason for an overall impression of unsustainable levels of activity, which in some cases is a reality e.g. crowding of beaches, diving activity, marine vessels in the area, pollution of groundwater.

The NW requires setting up a management agency to implement measures to ensure the functions of the area operate within an integrated manner and that the impacts from the various activities are monitored to retain activity within the sustainable levels desired.

As a final exercise the list of key SIs presented in Table 2 above were projected to identify two future scenarios that might occur in 5 to 10 years time. The first scenario is a result of current trends progressing into the future assuming that current actions being taken are continued. The second scenario is a more rapid move to conform to sustainability levels, particularly as a result of EU obligations should Malta become a full member of the EU. The projected figures for each scenario for each SI are presented in Table 19 below. The AMOEBAE for both scenarios are presented in Figures 9 and 10.

N°	Indicator	Note	Maximum	Minimum	2000	Scenario 1 Current trends	Scenario 2 Improved environmental performance
1	Scheduled/protected areas in NW	% of the total coastal area of the NW	80	65	66	73	75
2	Abandoned agricultural land	% of total agricultural land	25	7	15	20	10
3	Fish farms in the NW	number of farms	5	2	5	5	5
4	Cars travelling through the NW	number of cars during peak	3000	1000	4500	5000	3500
5	Marine vessels in the NW	number of marine craft during peak weekend	700	400	1000	1500	650
6	Enforcement actions by PA	annual number of cases	60	25	68	70	30
7	Marine conservation/protected areas	% of coastal length	20	10	0	5	15
8	Diving in the NW	No. of dives	40000	15000	55000	60000	40000
9	Bathing water quality	% of samples meeting acceptable levels of faecal coliforms (<1000mg/l)	95	85	98.3	90	99
10	Number of breaches in rubble walls	No. of breaches	10	5	11	20	8
11	Pollution in ground water	Level of nitrate (mg/l)	50	25	65.27	70	30
12	Unemployed as a % of working population	% of working population in NW	3	1	1.8	2.5	2
13	Full time farmers	% of total farmers	50	40	44	30	50
14	Tourist accommodation occupancy - winter	occupancy % during winter	55	35	26	25	40
15	Employment in tourism	fulltime employees in NW % of total	25	15	14	13	20
16	No. of claims for storm damage	No. of annual claims	50	25	72	65	35
17	TSE recycled water	% of water consumed	80	50	4.6	10	30
18	leaked water	cubic metres per hour	600	300	1200	800	800
19	level of bunkering operations	% of total operations in Malta	20	5	19.3	18	10
20	Population growth in the NW	annual rate of growth	5	2	1.4	2	3
21	population density in NW	population per sq km	500	300	328	350	400
22	Beach closure	number of days during summer	15	2	25	20	10
23	Tourist resident ratio - summer	Local residents as % of foreign tourists	95	70	136	140	125
24	Gastroenteritis outbreaks in NW	No. of total outbreaks in a year	3	1	5	4	2
25	Quality of drinking water	Level of chloride (mg/l)	800	200	517	500	300
26	Quality of drinking water	Level of nitrate (mg/l)	50	15	56	55	40
27	Quality of bathing water	No. of points obtained on faecal coliform readings	50	35	40	45	50

Table 19. Projected SIs for two specific future scenarios

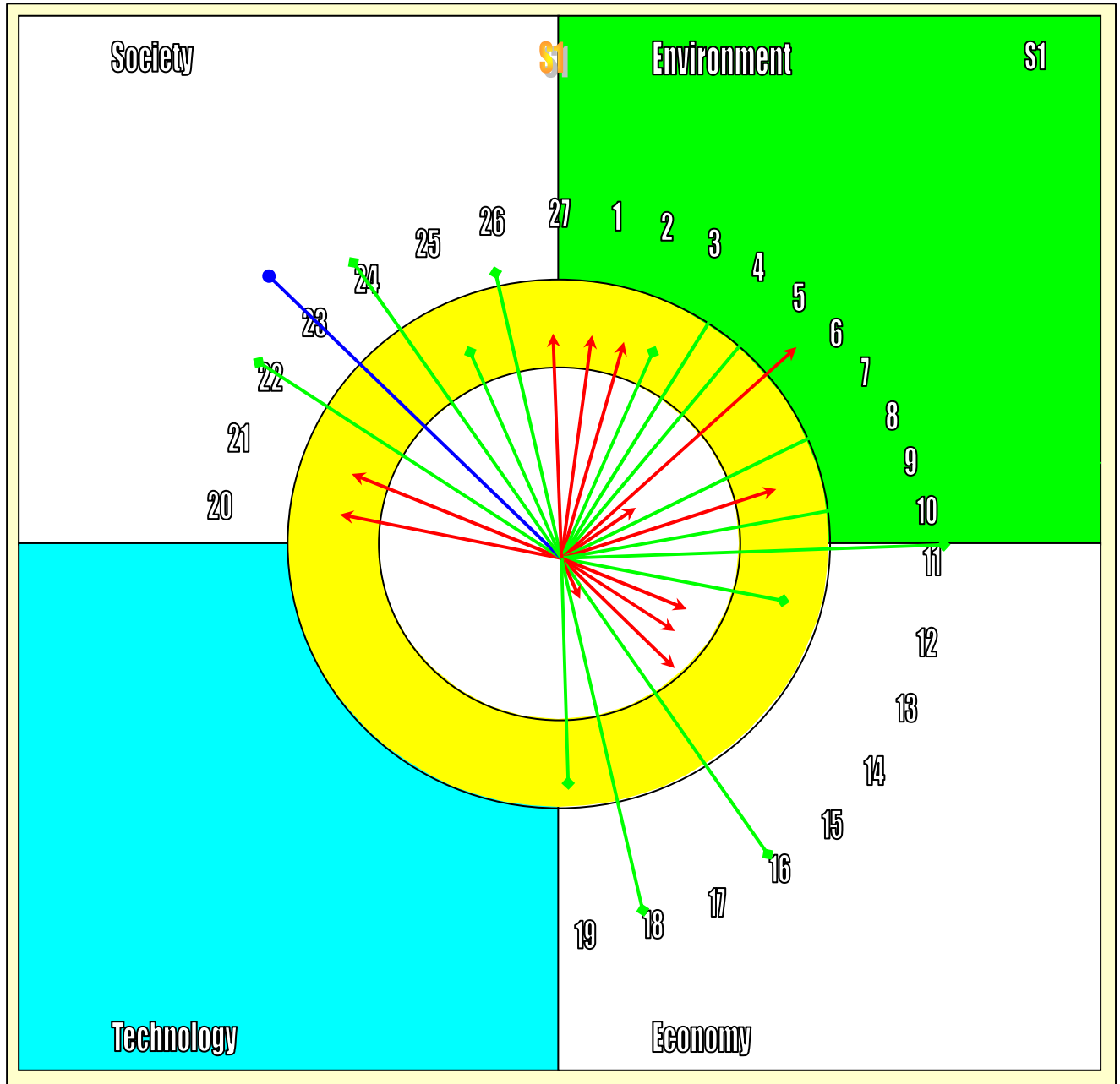


Figure 9. AMOEBA for Scenario 1

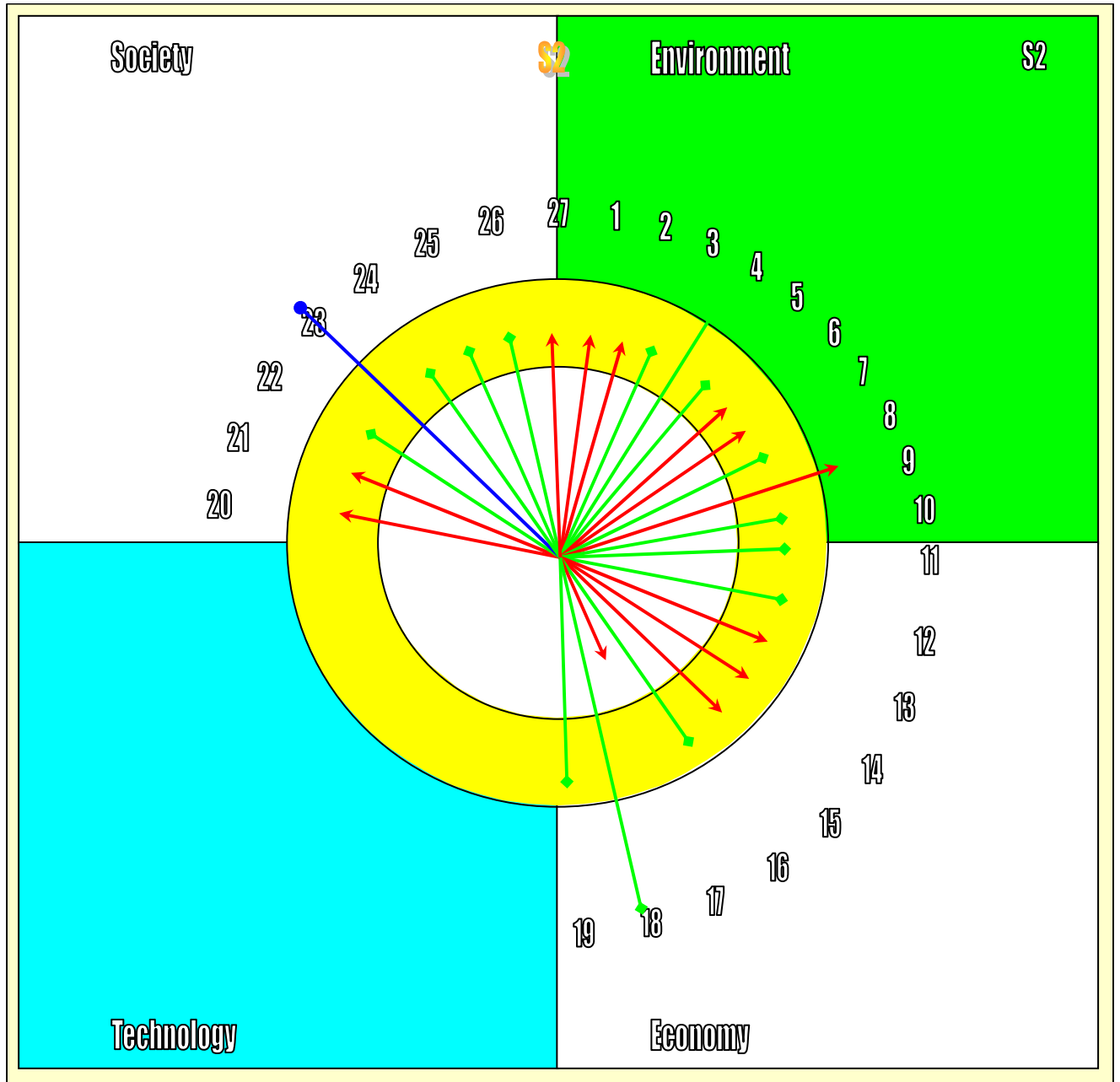


Figure 10. AMOEBAs for Scenario 2

Implications of scenario 1

Should current trends progress into the future few SIs would fall within the band of equilibrium and therefore within the sustainability level agreed by stakeholders. This scenario will result as a consequence of retaining current operational and management measures. In areas where no specific management measures apply it is likely that activity will increase particularly at main diving sites and the recreational seacraft moving through the NW. The increasing importance of the NW for recreational activity will also increase the number of cars travelling to the NW.

Agricultural operations are likely to continue to decrease with more land being abandoned and the lack of interest in maintaining the fields' increases. The level of tourism development in the area is likely to increase as a result of new beds through new projects and extensions coming on the market.

The result of this scenario would be an aggravation of the current situation with a decrease in the quality of the physical and social environment and possibly even economic in the NW. Through management measures this trend can be reversed e.g. countryside management and beach management.

Implications of Scenario 2

The adherence to EU standards and directives should Malta become a full member of the EU would stimulate more efforts into environmental protection and the attainment of sustainable levels of activity. This may be somewhat long term since it would require a culture change in the way the country goes about its operations. The availability of Funds should also encourage specific actions with regard to heritage protection particularly investment in improving the cultural and environmental heritage.

Most of the SIs would be within the Band of Equilibrium. However, to achieve this commitment and investment, particularly increasing human capacity through training and technical workshops, would be necessary to create the necessary level of awareness and education in the specific sector to ensure more commitment to sustainable development of their specific activity.

Some of the choices available include more emphasis on alternative forms of transport (e.g. public transport, cycling), management of marine conservation areas and recreational sites, stabilisation of the tourist bed capacity.

The above scenarios are just a flavour of the implications and use of the SPSA tool. The scenarios would certainly need further discussion during the post CAMP phase, which would involve time and human resources. However, the tool of scenario building and seeking to achieve the desired scenario is very appropriate in identifying the future implications of current decisions, particularly with regard to plans, policies and activities.

Marketing the desired scenario and achieving results

The above two scenarios present likely future situations. However, the desired situation will not occur without any positive interventions. The overall transformation for the North West should be THE MANAGEMENT OF ACTIVITIES IN THE NORTH WEST TO ENSURE BOTH THE ECONOMIC

STABILITY OF COMMUNITIES, IMPROVE THE SOCIAL FABRIC AND PROTECT ENVIRONMENTAL RESOURCES.

This transformation, if well managed, should move towards a scenario, which is close to the sustainable levels envisaged. The following are some of the marketing actions, which might be taken up to achieve the desired future situation:

- A television series which would promote the North West and its resources outlining their sensitivity and how human action is threatening their protection;
- Awareness and information sessions to key stakeholder groups e.g. farmers' cooperatives, hotel and catering operators, indicating new methods of operation which are more in line with environmental resource management;
- A 'dos' and 'do nots' leaflet to beach users and boat owners as well as users of other recreational areas;
- Information boards at key recreational sites informing visitors to be more aware of their activities which may adversely effect the sites' environmental resources;
- Interpretation programmes and facilities to inform visitors more about the importance of the sites;
- Government should encourage and support NGOs in organising walks and visits to areas in the North West;
- Articles in local papers showing trends in the SIs to keep stakeholders and other interested public informed on the situation and whether positive initiatives are giving results or whether inaction is worsening the problem;
- Organise a series of information sessions for the general public with the collaboration of the Local Councils.

However, to get these actions in motion some agency has to be responsible for implementation. Various proposals have been made during the final meeting in January 2002 with one being that the National Commission for Sustainable Development to be set up would progress on this project. Another suggestion made was that the post CAMP activities of the individual thematic projects would take the approach further at least with regard to monitoring of the key SIs. 4 key SIs have been chosen from the selected list. The choice of these SIs has been based on the criteria that the North West is important for the agriculture and leisure sectors. These two main activities impact significantly on the quality of the environment and the sustainable development of the North West.

Indicator	Note	Maximum	Minimum	2000	Scenario 1 Current trends	Scenario 2 Improved environmental performance
Abandoned agricultural land	% of total agricultural land	25	7	15	20	10
Cars travelling through the NW	number of cars during peak	3000	1000	4500	5000	3500
Marine vessels in the NW	number of marine craft during peak weekend	700	400	1000	1500	650
Tourist accommodation occupancy - winter	occupancy % during winter	55	35	26	25	40

Table 20. Four key SIs for the North West

Scenario 1, based on current trends, indicates a North West without any form of management and integration of activities. Little consideration is given to revitalize and re-structure the agricultural sector and hence more land will be abandoned, as full-time farmers will decrease. There is very little regulation of leisure activity in the main recreational spots with traffic increasing to these areas as recreational activity increases. Similarly, the increase in sea craft will create further craft into the prime marine recreational locations of the North West. The resorts in the North West will still find it difficult to attract sufficient activity during the winter months and, should the resorts not rejuvenate their product offer, average occupancies are likely to decrease as new developments in the area enter the market.

Scenario 2 is a situation, which sees an improvement in the management of the North West, its resources and the activities undertaken. The abandonment of agricultural fields decreases with more fields being put to use. The car and marine traffic in the region during peak days decreases. There is also an improvement in the occupancy figures of tourist establishments during the winter months. This scenario may be achieved as a result of a restructuring of the agricultural sector and more maintenance of rubble walls and encouragement to diversify into other economic sectors e.g. rural tourism. Management of the main recreational areas would reduce pressure on these resources particularly that resulting from cars and seacraft. The improvement of the traditional resorts, particularly through a redefinition of the accommodation product and the provision of innovative facilities, would extend the tourist season in these localities offering better occupancies during the winter and off peak months.

Achieving Scenario 2 would require the following actions:

- ❖ Management measures in the North West recreational areas would reduce the use of car transport, but would require convenient public transport services to operate on a regular basis.
- ❖ More regulation over marine recreational areas would reduce the number of recreational vessels into the area.

- ❖ The agricultural sector can be encouraged to maintain their fields and through the development of rural tourism activities farmers may find a new market for their produce.
- ❖ The rejuvenation of the traditional resort areas through a restructuring of the current accommodation offer, the provision of new recreational facilities, the promotion of new products and an overall upgrading of the infrastructure and environment in the area through Environmental Management initiatives.

Some actions that can be undertaken to market the desired scenario:

- ❖ Publication of a brochure outlining the rural resources and attractions in the North West;
- ❖ The organization of seasonal agricultural fairs to promote local produce;
- ❖ Information boards to visitors in the main recreational areas;
- ❖ Free events for tourists staying in the resorts during the winter months e.g. concerts, theatre, traditional dinners;
- ❖ Seminars to local residents, with the collaboration of the local councils aimed at a better appreciation of their locality.

Sustainability in the Maltese Islands

The North West experience with regard to the SPSA project can be expanded to cover other regions of the Islands in an attempt to achieve a more sustainable development of the Maltese Islands. Some of the indicators identified for the North West will remain applicable whilst other SIs will be identified which will reflect more the requirements of the other regions. This process will bring into play new and different stakeholders. The approach might also need to be adapted.

In such an exercise stakeholders should be involved from the early stages to ensure ownership and continuity. The results should direct future policies and plans and the SIs should provide a monitor to evaluate whether the desired scenario is being achieved.

Extending the SPSA to other regions may be more manageable than having to extend it for the whole of the Maltese Islands. This is because the number of stakeholders involved might be counter productive to the overall exercise, even though this would be a challenge to achieve a more integrated approach to the social, economic and environmental development of the Maltese Islands. Thus SPSA would find its niche in the formulation of a National Sustainable Development Strategy for the Maltese Islands.

The experience of the SPSA on a regional level has shown that stakeholders can gather and address issues in a systemic manner seeking to achieve an acceptable compromise in a win-win situation and provide the basis for informed decisions.

Sustainable development at a national level is generally more difficult to achieve than at the local level or with regard to a specific issue. This is probably because the wider the level of concern the greater the number of interests involved and hence the greater the problem to address. Sustainable development initiatives at the local level or on specific issues have shown results and there exist a number of examples to confirm this e.g. The implementation of Local Agenda 21 in Calvia (Majorca), Coastal Zone management Programme in Barbados, Extensive Use of Solar Water Heaters in Cyprus, The Management of Avian Ecosystems in Seychelles, just to mention a few in other islands.

Lessons learned

The SPSA activity was a learning experience for the SPSA team as well as for those team members that have participated in the various workshops. The use of this approach has been transferred to the local side and the method can be generally re-applied to the same thematic projects as well as to other new projects which seek to achieve a level of sustainable development.

The SPSA project was perceived as a separate project by most teams, even though it was a cross-cutting project, which 'serviced' all thematic projects, but since this required some more inputs by teams above those stated in their contracts in some way the effectiveness of the SPSA has suffered in this respect. Thus should this approach be used in future it should be an integral part of any project design. In this way although there would be an SPSA team, however, this would be made up of members in each thematic team.

Since the effectiveness and success of the SPSA depends on the involvement of stakeholders in the process, it is important that these are brought into the project from an early stage, even when the project is being developed. This is important not only to ensure effective participation throughout the process but also to encourage ownership and continuity of the project after the end of CAMP (Malta).

The experience of SPSA has shown that diverse sectors can meet and discuss issues in a systemic manner where each sector seeks to understand the other and together express common concerns and seek to respond to solutions in an integrated and co-ordinated manner. Certainly SPSA is not a main tool for any conflict resolution exercise but should certainly reduce potential conflicts, particularly since the level of sustainability is stakeholder defined and accepted.

The SPSA exercise might have been better where it structured in such a way as to spend the first 10-12 months understanding the approach and the second 12 months working on the prospective elements of the SPSA .

Since the SPSA project requires the participation of key stakeholders it should also be developed in close collaboration with the Participatory Programme of the CAMP activity. This is important particularly in identifying future scenarios since stakeholders would be in a better position to indicate likely future outcomes in their respective sectors.

Participation should also provide the basis for stakeholders to implement specific actions that should lead to the achievement of the desirable scenario or future outcome.

The Blue Plan recognised the importance of the AMOEBA tool and would work on improving the effectiveness of this tool particularly in decision taking and in determining the integration and interrelationships of the various SIs. The SPSA training module will be elaborated further within Blue Plan through the periodic organisation of workshops.

Certainly more will be learned on the approach as it is implemented in other countries and on other projects. The SPSA approach is a flexible approach and is

stakeholder determined and therefore one expects the approach to reflect the circumstances and context of the specific system where it is being applied. The SPSA is therefore culturally and socially determined and it would be interesting to make comparisons between systems where it has been applied to identify commonalities as well as differences in implementation.

Conclusions and the way forward

At the final meeting on this project which was held between 7th – 8th January 2002, it was apparent that most team members considered the SPSA project as an important dimension of the CAMP (Malta) Project, even though some could not attend all workshops. Nonetheless, the SPSA activity kept teams in contact with each other through the various workshops held.

Although the SPSA project does not end with the conclusion of CAMP (Malta), and would proceed into the post CAMP phase it would still require some resources (e.g. time) to keep the project going. It would seem that most of the thematic projects will proceed to a second phase after CAMP. In fact some funds have been obtained through SMAP to continue the Marine Conservation Project. Thus here is an opportunity to proceed with the SPSA project with regard to this specific thematic project.

On the other hand there is an opportunity to make use of this approach to assess the implementation of the North West Local Plan and monitor the sustainable development of the North West. This would require the identification of an implementation programme.

With regard to the SPSA a number of key indicators have been identified and these SIs will be monitored over the next two years to evaluate whether actions being taken in the interim period with regard to the specific sectors are leading towards a more sustainable level of activity in the NW. Negative signals should spark action in the respective areas to reverse the trend. The SPSA team should be in a position to maintain this monitoring exercise and produce a short report at the end of each year with the involvement of the stakeholders. The extent and scale of this exercise will depend on the resources that can be allocated with the hope that some agency would continue with the project allocating the appropriate resources.

The Malta Commission for Sustainable Development also has a role to play in the formulation of SIs. Although the terms of Reference of this Commission are not yet clear the potential use of the SPSA in this exercise would be a proposal worth considering. Once this commission is set up it is suggested that the SPSA team should present to the Commission or sub committee the work done over these last two years on this project to gain support for the continued efforts with regard to this activity and in this way have an agency responsible to the formulation of and publication of SIs. The role of the National Statistics Office will also be important in this respect since some of the SIs would require data being collected by the NSO.

In terms of sustainable indicators, within NSO an Environment Unit has been established in the past three years and one of its tasks is to co-ordinate the collection of indicators related to social, economic and business aspects. Environment Unit is a relatively new addition to the organizational structure present at NSO and as a result most of the statistical sources for the setting up of an environmental information system are currently being developed. Part of NSO's obligation is the regular compilation of structural indicators, which are in turn forwarded to Eurostat. In addition, the Environment Unit has also been

compiling environmental data from a variety of sources that will be included in a national compendium that will be published by NSO. This compendium includes a number of environmental indicators related to waste generation, weather, water consumption, transport and energy.

To conclude, as stated above, the SPSA experience was certainly a fruitful project. Considering that Malta was the first to experiment this methodology it would certainly be interesting to see how this would develop in other countries, considering that it is to be implemented as part of the CAMP projects in Lebanon and Algeria. It is also hoped that this report has paid justice to the whole exercise, particularly the contributions of the various teams and the stakeholders, and would encourage further interest in the application of the approach in other sectors.



Priority Actions Programme Regional Activity Center
Mediterranean Action Plan - UNEP

Planning Authority Malta

MAP Coastal Area Management Programme (MAP CAMP)

The "Malta" project
Activity: Sustainable Coastal Management

STRATEGIC MANAGEMENT PLAN

NORTH WEST COAST OF MALTA

Final Activity Document

Malta, January 2002

CAMP MALTA: Sustainable Coastal Management Activity

Draft Strategic Management Plan for the North West Coast of Malta

Planning Authority, February 2002

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List of Acronyms

CAMP -	Coastal Area Management Programme
EPD -	Environment Protection Department
LP -	Local Plan
MAP -	Mediterranean Action Plan
NWLP -	North West Local Plan
PA -	Planning Authority
PAP/RAC -	Priority Actions Program/Regional Activity Centre
UNEP -	United Nations Environment Program
SCM -	Sustainable Coastal Management
SEA -	Strategic Environment Assessment
SPSA -	Systemic Prospective Sustainability Analysis

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Finally we would like to thank all the stakeholders who have provided an insight to current issues in the North West coastal zone.

EXECUTIVE SUMMARY

This document presents the final activity output of the Sustainable Coastal Management (SCM) Activity. The responsible National Institution was the Planning Authority, more specifically the Environment Management Unit. The SCM activity built upon existing work and consultation already undertaken with key players within the coastal zone. Additional consultations with stakeholders and the general public were held under the work of the co-ordinating functions of CAMP Malta, namely Public Participation Programme and Systemic Sustainability Analysis.

The CAMP - Malta activity has been running in parallel with other work being carried out by the Planning Authority (PA), namely the North West Local Plan (NWLP) and the Structure Plan review. As most issues concerning coastal development have already been addressed in the NWLP, the SCM Activity focused on developing a Coastal Strategy for the NW based on the general strategy of the NWLP, the findings of the Coastal Profile and the Coastal Strategy Topic Paper. Therefore this document is to be read in conjunction with the NWLP.

The management objectives proposed by the SCM activity for the North West of Malta can be summarised as being a Strategic Plan, largely influenced by the land-use planning process whereby spatial planning of the coastal zone is translated into geographical units with different characteristics. In recognising the sectoral approach within the Maltese Islands, the SCM activity has gone a step further than traditional land-use planning by focusing on policy integration measures for the coastal zone.

The SCM Activity proposes the establishment of a multidisciplinary team composed PA and EPD members of staff to take responsibility for the implementation of the Management Plan with representatives from other agencies present on a Committee. Members of the scientific community may have a potential role within the Committee to co-ordinate research requirements. The function of this team would be to oversee the co-ordination required for implementation, through the delegation of responsibilities to other entities.

Other objectives have been recognised as priority areas and relate to specific action for particular issues such as rehabilitation projects, management plan formulation for protected areas and beach management programs. Sub-committees for these priority areas are proposed. They are to be composed from representatives of stakeholders within the area in question, including members of the private sector, the public as well as non-governmental organisations. The priority areas identified are listed as follows:

-  Development of Management Plans for Protected Areas

- ◆ Establishment of Marine Conservation Areas and formulation of Management Plans
- ◆ Rehabilitation and Improvement of Agriculture
- ◆ Development of Rehabilitation Programs for spent quarries and legal dump sites
- ◆ Development of Beach Management Programs

The most critical factor for implementation is the availability of financial resources. The SCAM Activity acknowledges the need for commitment from separate Ministries to appoint representatives on the Co-ordinating Committee to work full-time on the project. It also recognises that there are potential sources of funding include foreign organisations and institutions such as the EU and METAP that can assist in the implementation of the priority action areas. A tentative work programme spanning the same time-frame as the NWLP has been put forward.

1 Introduction

1.1 CAMP is the MAP component for sustainable coastal management, integrating environmental concerns into development planning and management, oriented at understanding and resolving practical environment, development and management problems in the Mediterranean coastal areas. Applying principles of sustainable development and methodologies and tools of Integrated Coastal and Marine Areas Management (ICAM), CAMP is implemented through individual projects within selected coastal areas. Each individual CAMP project is initiated, approved, formulated and implemented following a general conceptual and institutional framework, applied according to specificities of each project (UNEP/MAP, 1999).

1.2 The MAP “Malta” Project was approved by the Eighth Ordinary Meeting of the Contracting Parties to the Barcelona Convention, held in 1993 in Antalya. The Project Agreement was signed in November 1999. CAMP Malta incorporated a set of co-ordinating and functional activities namely Data Management, Participatory Programme and Systemic Sustainability Analysis; and a set of Individual project activities on Sustainable Coastal Management, Marine Conservation Areas, Integrated Water Resource Management for the NW, Erosion/Desertification Control Management and Tourism: impacts in health. The project area covered the whole geographical area of the Maltese Islands in a broad manner and focused its activities on the NW of Malta.

1.3 This document presents the final activity output of the Sustainable Coastal Management (SCM) Activity. The responsible National Institution was the Planning Authority, more specifically the Environment Management Unit. A team of professional and technical officers within the Authority were responsible for the co-ordination of the activity and a PAP/RAC consultant was appointed to assist the team. As the SCM activity built upon existing work, consultation with key players within the coastal zone had already been undertaken. Additional consultations with stakeholders and the general public were held under the work of the co-ordinating functions of CAMP Malta, namely Public Participation Programme and Systemic Sustainability Analysis.

2 Objectives of the Sustainable Coastal Management Activity

2.1 In accordance with the Terms of Reference agreed with PAP/RAC, the SCM Activity was targeted to undertake the following set of functions:

- ◆ Defining the role of coastal/ marine resources for sustainable development of the island,
- ◆ Preparing an Integrated Management Plan for the NW area of the island, with particular reference to the Coastal Zone Subject Plan of the area,
- ◆ Assisting national authorities in implementing principles of sustainable development and tools and procedures of ICAM into the national planning process, and,
- ◆ Introducing and applying, techniques and procedures, of the participatory process into the national planning practice.

2.2 The CAMP - Malta activity has been running in parallel with other work being carried out by the Planning Authority (PA), namely the North West Local Plan (NWLP) and the Structure Plan review. The NWLP is a land-use plan formulated to direct sustainable development of this region for the ten-year period following its adoption. The Structure Plan is the Strategic Development Plan adopted for the Maltese Islands and covers a time frame of 20 years. The current review is aimed at addressing current and future issues to be incorporated in a new replacement Structure Plan. One of the topics covered in this review is coastal planning and development. As a result of these parallel undertakings, there was a synergy between these projects and the SCM activity. This is reflected in the proposals made for the Strategic Management Plan.

2.3 As most issues concerning coastal development have already been addressed in the NWLP, the SCM Activity focused on developing a Coastal Strategy for the NW to accompany the NWLP strategy and policies. Therefore this document is to be read in conjunction with the NWLP.

3 Tasks

3.1 The SCM Activity included a variety of tasks ranging from data collection to training in new skills as indicated below.

Coastal Profile

3.2 The initial task involved a review of the resources present within the Coastal Zone. For the purpose of this activity, the coast has loosely defined as “*extending offshore up to and including territorial waters and inland up to that part where human activities are directly influenced by or can influence the quality of the marine resources*”. A temporary boundary was identified on the basis of natural characteristics and current uses.

3.3 The findings of this review were compiled in the Coastal Profile I, which identified the major habitats present within the coastal zone, their present status and the major threats. The description of coastal habitats used in this report is based on the approach adopted by local researchers, which was also adopted for the formulation of the Structure Plan in 1990. Five terrestrial coastal habitat types have been identified. Habitat classification for the marine environment is based on the classification system widely used within the Mediterranean and the local scheme for major biotopes. Information on geology and hydrology was also provided. The report limited itself to those issues pertaining to the protection of natural resources and gave an overview of the North West Area.

3.4 Following the report on natural resources the next task was to identify the existing coastal uses, their needs as well as any conflicts arising from these activities. The findings of this review were compiled in a second document, Coastal Profile II. Coastal Profile II also looked at development trends, legislation as well as national and international policy. Previous work on the Structure Plan review, a law and practice exercise was undertaken, whereby relevant bodies in Malta having a particular interest in the coastal zone were consulted. The findings of this consultation process highlighted the issues, conflicts and constraints pertaining to administration within the coastal zone and were thus incorporated in the Coastal Profile II.

3.5 As the initial draft North-West Local Plan was already prepared at this stage, the Coastal Profile identified and listed those policies related to the Coastal Zone. Issues not tackled within the Local Plan could then be identified.

Resource Valuation

3.6 One of the main tools proposed to assist the achievement of SCM objectives was Resource Valuation. For this purpose a workshop was organized by the SCM team members in conjunction with PAP/RAC and MAP consultant (Mr. G. Constantinides), aimed towards the introduction of this tool for environmental planning and management with particular reference to coastal areas.

3.7 The workshop was intended to identify the methodology for the case study to be adopted in the Sustainable Coastal Management Activity. However, at the end of the workshop it was decided that due to resource constraints within the lead agency, the RV technique would not be utilised within the SCM activity.

Strategic Environment Assessment

3.8 Another tool to be implemented was Strategic Environmental Assessment, (SEA). Following a training workshop it was decided to carry out a SEA of the draft NWLP. For this assessment, the draft NW Local Plan policies affecting the coastal area (as identified within Coastal Profile II) were assessed. The SEA mainly focused on the direct impacts of the policies on the environment, however, other aspects were also considered. The five 'Themes' under which these policies were assessed comprise: The Environment, Quality of Life, Social, Futurity and Participation. The report on the SEA exercise was presented separately by the SCM team. The basic conclusions reached by the SEA Exercise are listed in section 4 below.

Systemic and Prospective Sustainability Analysis

3.9 The participation in the workshops held for the SPSA activity contributed additional training for the SCM team in the field of sustainability indicators as well as exposure to stakeholder meetings. Within this process a list of sustainability indicators for the coastal zone was identified and a band of equilibrium for each of the selected indicators established. These indicators are presented as part of the entire CAMP-Malta indicators package and are presented in the SPSA Final Activity report.

Data Management

3.10 The SCM Activity generated considerable data, which was made available to the Data management activity thus making the information available to the other thematic activities.

4 North West Coast Development

The National Context

4.1 The Coastal Profile reports Part I and II have identified the major issues present within the coastal environment in the Maltese Islands. A brief description is given, highlighting the context within which the NW coast is to be addressed.

4.2 The total land area of the Maltese Archipelago is approximately 315.4km² excluding the small islets. The preliminary coastal zone boundary identified for the purpose of the Structure Plan review incorporates a land area of approximately 61.8km², making up 19.6% of the total land area (Table 1). The size of the islands themselves is a limitation to the extent of economically exploitable natural resources. The country therefore depends heavily on tourism as the main source of foreign earnings.

4.3 Being a nation state with a resident population of around 400,000, infrastructural needs have to be met by this limited space. Power stations, desalination plants, ports and harbours all require a coastal location to operate effectively. Additionally over 1 million tourists require accommodation and recreational facilities which over time have taken up considerable stretches of the coast particularly hotels and beach concessions. The benefits obtained from such a location are limited and short-lived, since densely built-up coastal areas no longer provide the tourism product originally promoted.

4.4 To date, the accessible part of the 190km stretch of coastline has been modified and extensively used by a variety of uses which are all competing for space and resources. This has also led to a gradual degradation of the natural and cultural resources present within the area.

Table1: Land Area within the Coastal Zone

	Land Area (km ²)	Coastal Zone Area (km ²)	Coastal Zone %
Malta	246.8	39.8	16.1
Gozo	65.8	19.2	29.2
Comino	2.8	2.8	100
TOTAL	315.4	61.8	19.6

(Source: Coastal Strategy Topic Paper consultation draft, 2001)

Coastal Management Issues

4.5 The issues concerning the coastal zone within the Maltese Islands have been identified in the Coastal Profile documents and a brief description is outlined below. Maps 1 - 3 illustrate the activity area and the main coastal and marine uses.

Coastal Resources

4.6 Erosion is one of the main issues that need to be addressed on a national level. The main factor that accelerates coastal erosion is human intervention through development such as road construction, sea walls within sandy beaches and their adjacent coastline, development on rdm dominated coastlines. Abandonment of agriculture leads to lack of maintenance in rubble walls and in the flash floods that occur locally there is breaching of these wall and significant amounts of sediment is transported to the sea.

4.7 The lack of attention to natural processes has led to over development of the low-lying shoreline, which has been taken up by major infrastructure projects as well as tourism and recreation related projects.

4.8 The majority of terrestrial coastal habitats within mainland Malta have been legally protected for their ecological value or scientific importance. This has strengthened measures to safeguard biodiversity. No marine sites have been given protection as yet. This is an issue that requires attention as it aims to safeguard local biodiversity, as well as ensure sustainable use of natural resources, whilst protecting legitimate uses. In addition, coastal processes that influence the status of these habitats were not afforded similar protection, creating a practice of 'showcase conservation' where habitats are designated for protection in isolation from their surroundings.

4.9 Cultural heritage along the coastal zone is diverse, ranging from Neolithic remains, salt pans to maritime structures from different eras. As with natural resource protection, there is a need to move away from the current 'show case' protection method adopted so far. Lack of data on the marine environment hinders any measures to safeguard underwater historical artefacts.

Coastal and Marine Uses

4.10 Coastal uses within the Maltese coastline vary from structural development that requires such a location for its operational purposes (e.g. thermal power station, ports) to structural development that benefits from a coastal location but does not necessitate such space for its operation (e.g. hotels, grounds for football and other non water sports). There are uses found on the coast simply because the nature of the exploitable resource happens to be on the coast (e.g. mineral extraction). The majority of these uses, whether they necessitate a coastal location or not, have been developed in a manner that has not considered the implications they may have on natural resources, processes and ultimately, other uses.

4.11 Other types of coastal activities are related to recreation such as water-sports and coastal walks. Some form of development is associated with such activities in order to provide adequate facilities namely related to access (footpaths, emergency vehicle access, telephones). There are other structural developments associated with coastal activities that by their excessive number create cumulative pressure on resources and in

taking up land, limit further the space available for public use (e.g. kiosks, hunting and trapping hides, boathouses). The availability, location and design of these facilities have not been regulated and have also led to conflicts with landscape features and the natural environment.

4.12 A similar situation has been created within the marine environment. The lack of a property management system similar to that adopted on land has led to a perception that the marine environment is a free for all resource and as new developments were introduced locally, very little consideration was taken regarding impacts on both the natural resources and the adjacent marine and coastal activities.

4.13 One issue that has not been given adequate attention is the rehabilitation of coastal areas in terms of suitable alternative uses. Options for sustainable use of areas where the predominant use has been abandoned or will be abandoned in the next 10 years need to be identified. These include abandoned agricultural land and quarries.

The North West Area

Opportunities and Constraints

4.14 The North West (NW) area is primarily rural in nature, compared to the rest of the island and this is primarily due to its geological and geomorphological features. The cliffs are dominated by agricultural activities whereas the stretches of low-lying coastline along Qawra and Bugibba and Marfa have been taken up by tourism and recreation related development. Other areas have a limited access to the sea such as Gnejna, Ghajn Tuffieha, Wied iz-Zurrieq and Ghar Lapsi, and these have been overexploited by development.

4.15 The North West has a coastal area covering approximately 27.5km², dominated by the coastal cliffs stretching along the western part and low lying areas along the northern part. Malta's main bathing areas, including the largest sandy beaches, are located on the NW coastline.

4.16 The development zoning system adopted by the Planning Authority allocates the designation of ODZ (Outside Development Zone) to the entire coastline, thus protecting it from urbanization. Exceptions are found in Mellieha, Xemxija and Qawra and Bugibba, which are zoned for Dwellings. The major coastal habitats have also been afforded legal protection as Areas of Ecological Importance and Sites of Scientific Importance, within the Scheduling Process under the Development Planning Act. This designation affords protection against most types of development.

4.17 On the marine side, the NW has 2 bunkering areas and 4 aquaculture production units. The northern coast in particular is also very popular for boating activities. The coastal stretches along Qawra point, Cirkewwa, Golden Bay and Ghar Lapsi have all been identified as candidate Marine Conservation Areas within the current Structure Plan.

4.18 The Coastal Profile looked at the development applications within the coastal zone that were submitted to the Planning Authority within a 5-year period (1994-1998). The highest demand for development has been from activities and uses that do not necessitate a coastal location. As a result of the land use zoning scheme most of the permitted development is along the urban waterfronts and recreational focal points, Qawra/Bugibba, Mellieha. This has resulted in additional encroachment of the immediate shoreline with the gradual elimination of open space available to the public for informal recreational use.

4.19 The main issues that need to be tackled are listed in Table 2.

Table 2: NW Coastal Issues

Activity	Issue
Aquaculture	Concentration in St Paul's Bay; impact on landscape and other uses (tourism) as well as benthic environment and cultural heritage.
Bunkering	Located adjacent to candidate MCA; limiting maritime space for other activities.
Coastal engineering works	Adopt code of practice for such development for various facilities from coastal defences to provision of access to the sea.
Beach management	Establish management system to provide safety and adequate facilities, while respecting area in question; water quality monitoring;
Marine conservation	Need to establish a national system need to regulate a number of activities e.g. anchorage; harpoon fishing, artificial reefs, wrecks; diving
Dumping at sea	Introduce Regulations
Fisheries	Impact with conservation; Protect from incompatible uses especially for onshore facilities
Land based sources of pollution	Identify sources; implement sewage master plan; introduce regulation for desalination plants in hotels
Rehabilitation of degraded areas	Illegal dumping; closed landfill sites
Education	Increasing public awareness
Management of protected areas	Monitoring Programmes
Quarrying	Need for restoration schemes;
Agriculture	Abandonment; soil erosion; introduction of alien species; nitrate pollution of underground water; need for waste management strategy
Informal Recreation	Provision of adequate facilities; ensure public access: right of way; establish coastal walks and routes
Urban development	Material and structures used; location of parking areas; concentration of development on shoreline
High Impact Activities	Offroading; Hunting and trapping: impact on ecology, soil erosion, landscape, walking, public access
Enforcement	Commitment to implement current existing regulations on all sectors and where gaps exist identify new strategy

Source: NWLP Draft 2000

Rationale for intervention

4.20 Development on the coast is to be guided by principles of sustainable development and the multiple-use of natural resources, whereby zoning should be based on the ecological characteristics present. As discussed in the Coastal Profile the Draft North West Local Plan aims to introduce such an approach towards land use management in the Plan area.

4.21 In order not to duplicate work, it was agreed that the SCM activity would utilise the NWLP as the basis for the coastal management plan of the area. For this purpose an evaluation of the draft NWLP was undertaken through a Strategic Environmental Assessment exercise.

The North West Local Plan – Strategic Environmental Assessment

4.22 The NWLP includes two types of policies, General Policies (GP) that apply to the entire Local Plan area and Area Policies (AP) that address specific areas/sites. The list of policies to be assessed had originally been selected in the Coastal Profile II report. An assessment of all the GPs was not viable due to a lack of resources and time therefore only those GPs that were found to have an influence on issues present in the coastal zone, as identified in the Coastal Profile, were chosen. Similarly, only those Area Policies that fall within the coastal zone boundary were evaluated. A total of seventy - four (74) policies from the Draft North West Local Plan were selected.

4.23 The main findings of the SEA exercise suggest that the NWLP coastal policies, although highly integrative in nature, need to be developed further in specific areas, in order to achieve the objectives of the SCM activity, i.e. the formulation of a management plan. The main areas identified by the SEA team are indicated here:

- ◆ Establishment of the Environmental Capacity for key areas and activities: to establish levels of access, intensity and type of activities allowed in particular areas, in order to safeguard natural resources.
- ◆ Management of access: Environmentally sensitive areas may be degraded with over-provision for access. Adequate planning of access routes for different users e.g. horse-riders, pedestrians, cyclists and cars, is needed to prevent conflicts. Key popular areas require provision of access to disabled people as well as for parking, which needs to be sensitive to the rural landscape characteristics.
- ◆ Landscape protection: Materials and colours to be used in the construction of structures and provision of footpaths and other facilities are a key consideration to preserve the rural characteristics of the coastal area.
- ◆ Water Sports: Lack of management threatens public safety. This factor should be inherent in the provision of water sports facilities; standards should be established

and abided with. Management of sites identified for motorised water sports should also take into consideration the environmental sensitivity of the marine and coastal environment.

◆ Water quality: more focus should be given to sources of pollution that deteriorate water quality, both from land-based and marine based activities.

◆ Quarry restoration: more attention needs to be given to the end-result, particularly multiple uses which also promote public recreation whilst taking into consideration the protection of the environment and water quality (for both bathing and potable water).

◆ Construction and demolition of buildings: the monitoring of the construction and demolition of buildings/structures is important due to the potential negative impacts on the adjacent marine environment in case of overflows. Measures are needed to ensure that demolished material is deposited safely in a prior identified and acceptable site. Wherever possible, the reuse and/or recycling of the construction debris resulting from the demolition of illegal structures is to be encouraged.

◆ Closure of landfill at Wied Fulija: an implementation program must now accompany the decision to close it down.

◆ Mineral Resources: Although this topic is being addressed in detail in the Draft Minerals Subject Plan for the Maltese Islands, there is room within a management plan to address the reuse and recycling of material.

◆ Educational Potential: A broad educational program as an inherent tool within the coastal management plan would be a positive and pro-active measure.

5 Existing Legal Arrangements

Opportunities and constraints

5.1 The most common element in coastal management is the sectoral approach and this is no less reflected in the Maltese Islands. A tradition to have discrete departments with specific responsibilities has somewhat been altered in the early 1990s with the establishment of a number of agencies, having broader responsibilities.

5.2 Unfortunately overlaps in responsibilities were created since the existing legislation and institutions were not brought up to date with the emergent legislation. Consequently misunderstandings on operational procedures in certain sectors were created stalling many efforts from different entities. New developments (e.g. aquaculture) and procedures (e.g. policy integration) which were not catered for in the legislation, were a set back towards efforts in regulation.

5.3 A number of changes also occurred during the period of the CAMP – Malta project. These include the adoption of legislation governing Fisheries, the Environment and the setting up of the Malta Resources Authority, respectively. The most recent change has been announced in December 2001, whereby the Minister for the Environment announced that Environmental obligations are to be assimilated within planning functions under the Ministry of Home Affairs. No further information as to how these functions are to be implemented has been published to date. Therefore at this stage and for the purpose of this report, while the pending changes are acknowledged, it is still being assumed that the environmental functions are the responsibility of the EPD.

5.4 There are eleven (11) out of fourteen (14) Ministries in the Maltese Islands that are directly involved in regulating coastal areas and uses, yet there is no specific reference in current legislation to the coastal zone and coastal zone management. Table 3 outlines the main agencies that are involved in regulating the major coastal activities. It must be noted that other agencies and departments may also be involved at some stage, within particular activities, e.g. the Veterinary Service that is involved in aquaculture. Whilst the MTA has no direct involvement in the regulation of the sectors mentioned, it plays an important consultative role on the effect of such regulation with respect to the Tourism Industry. The Ministry for Gozo on the other hand deals with all matters related to Gozo.

5.5 The only legal document that makes reference to coastal zone management is the Structure Plan, the legally recognised document that regulates development. There is also no reference for policy co-ordination or co-operation between government entities in their policy formulation stages with the exception of the Development Planning Act, regulating the functions and obligations of the Planning Authority.

5.6 The numerous Legal Acts identify responsibilities and regulations affecting the majority of coastal uses. The only major loophole that exists relates to the marine environment and its administration, with respect to property rights.

6 Institutional Arrangements

Responsibility and co-ordination

6.1 In practice however, a number of inter-agency/inter-department networks already exist, as outlined in the Coastal Profile. Their existence is testimony to the fact that co-operation can be achieved. The areas where such co-operation exists include pollution control, water quality monitoring and enforcement of regulations relating to swimming zones. The most obvious one is the co-ordinated effort towards combating and monitoring pollution, between the Civil Protection Department, the Environment Protection Department, the Malta Maritime Authority and the Health Division. This type of integration has been limited by the lack of any legal commitment towards such efforts. It is becoming increasingly understood that most activities are inter-related and the benefits of policy co-ordination amongst agencies and departments is being acknowledged. More effort is needed to facilitate this co-ordination in other sectors as well if integrated coastal management is to be attempted. In the absence of specific legislation calling for such policy integration, the next best solution is for the institutions involved to clearly identify and acknowledge their responsibilities.

6.3 Working within the statutory powers of the existing administrative framework, specific roles can be identified within the management plan thus clarifying where and how separate departmental policies need to be integrated. It is evident, from Table 3, that some agencies have a consultative rather than a regulatory function for coastal areas and uses. These include the Malta Tourism Authority and the Local Councils Department. Their potential involvement in coastal area management is however high.

Table 3 Administrative responsibilities

	Office of the Prime Minister	Min. of Education	Min. of the Environment	Min. of Tourism	Min. for Trans. & Comm.	Min. for Economic Services	Min. for Home Affairs	Min. for Agriculture and Fisheries	Min. for Gozo	Min. Health	M. Justice & Local Gov.																	
	Oil Exploration Division	Armed Forces of Malta	Museums Department	Environment Protection Department	Public Cleansing and Waste	Drainage Department	Capital Construction and Waste	Malta Resources Authority	Malta Tourism Authority	Malta Maritime Authority	Malta Development Corporation	Malta Freeport Corporation	Water Services Corporation	EneMalta Corporation	Industrial Property	Police Corps	Civil Protection Department	Planning Authority	Government Property Division	Joint Office	Public Registry	Land Registry	Department of Agriculture	Department of Fisheries and Aquaculture	Malta Centre for Fisheries			Local Councils Department
Property																												
Land/sea ownership	x										x				x				x	x	x	x				x		
Dev. Control																		x										
Maritime																												
Shipping										x																		
Bunkering										x																		
Port management										x																		
Yachting										x																		
Waste																												
Dumping at sea				x						x								x										
Sewage						x		x																				
Other				x																								
Solid				x			x																					
Water quality				x				x																			x	
Living Res.																												
Fisheries		x																						x	x			
Aquaculture																								x	x			
Agriculture																							x					
Afforestation																							x					
Non-living Res.																												
Energy								x						x														
Water								x				x																
Soil				x																			x					
Hydrocarbons	x							x																				
Minerals (stone)								x										x										
Env. Protection																												
Biodiversity				x																								
Habitats				x														x										
Pollution Control				x						x																		
Cultural Heritage			x															x										
Search & Rescue		x														x	x											

7 Management Goals and Objectives

The Coastal Strategy and the NW coast

7.1 The Coastal Strategy Topic Paper, formulated by the Planning Directorate as part of the Structure Plan Review, has adopted a more focused approach with respect to coastal issues at a national level. The overall strategic objective for the Maltese coast is based on three levels:

- ◆ Protection of coastal and marine habitats and biodiversity
- ◆ Protection of uses that necessitate a coastal location
- ◆ Protection of public access and use

7.2 The draft coastal strategy proposes a zoning scheme that recognises the differences within the coastal zone, which are mainly characterised by the level and type of development present. In general terms the terrestrial coast can be classified into two categories, the predominantly rural and predominantly urban coastline. In addition there is also a strategy for the marine environment. These are illustrated in Map 4.

The Predominantly Rural Coast: Definition

7.3 This type of coast incorporates those areas that to date have very limited physical structural development, if any. These are the areas where ecological and/or geomorphological features dominate the coastal stretch and any uses undertaken within it. The main form of development in these areas is agriculture, which imparts a type of landform that characterises the local coastal landscape. Other forms of development are related to specific uses within particular geographical pockets, such as tourism along sandy beaches, quarries where mineral resources are present and accommodation units in areas zoned for Dwelling by the Temporary Provisions Scheme.

Strategy

7.4 The primary objective of the strategy for the predominantly rural coastline is to safeguard the natural and cultural heritage, including landscape. The type and level of new development acceptable within these areas should be minimal. Only development that is directed towards improving degraded areas and enhancing informal recreation, in conformity with the objective of safeguarding the coastal characteristic and heritage of such areas, will be acceptable. Existing legally approved uses and development within protected areas should be allowed to continue, provided that the value of the protected coast is not affected negatively.

The Predominantly Urban Coast: Definition

7.5 This type of coast is predominantly developed for urban and/or industrial purposes. In certain areas, the coastline itself has been modified for such purposes with the construction of wharves, jetties and seawalls. The natural element is very limited. Urban waterfronts and industrial waterfronts reflect the historic development of urban settlements and harbours and provide an element of open space in such densely developed areas.

Strategy

7.6 The primary objective of the strategy for the developed coastline is to safeguard the existing legitimate coastal uses and to minimise existing and potential conflicts. Existing open spaces for public use are to be safeguarded. Existing legally approved uses and development within protected areas should be allowed to continue, provided that they do not negatively affect the value of the protected coast.

The Marine Environment: Definition

7.7 The marine environment is dominated by different characteristics than those present on the terrestrial part of the coast. Biological productivity is predominant in the relatively shallow coastal waters; available information on the marine environment indicates that the main benthic communities are located up to depths of 50m and therefore the coastal areas up to this depth are the most susceptible to impacts arising from development or uses. This does not imply that no measures are taken to regulate development and activities further offshore. Consequently the proposed strategy applies to the marine environment up to the 12 nautical mile limit even though most activities are located in the coastal waters.

Strategy

7.8 The primary objectives of the coastal strategy for the marine environment are to safeguard the natural and cultural heritage, to safeguard legitimate marine uses, and to minimise existing and potential conflicts.

Planning Units within the North West

7.9 The formulation of management objectives for the NW coastal zone is therefore based on the general strategy of the NWLP, the findings of the Coastal Profile and the Coastal Strategy Topic Paper.

7.10 The general strategy adopted for the whole of the Northwest Local Plan area, including the coast, is *“to improve and protect the natural environment of both rural and urban areas, provide for economic development needs, accommodate population growth, sustain rural communities and encourage agriculture.”*

7.11 The Local Plan recognises the rural character of the area and aims to focus its spatial planning policy to protect and promote this distinguishable feature within the context of sustainable development in the Maltese Islands. This general strategy is applied to different land uses within the Local Plan area as indicated in Table 4.

7.12 With a strategic direction for the entire coastal zone and a strategic direction for land uses within the NWLP area, it is possible to focus on area specific issues within the NW coast. The approach taken by the NWLP has been to introduce the concept of coastal planning units, to facilitate the formulation and implementation of management objectives. These coastal planning units, described in detail within the Coastal Profile, are areas of the coastal zone with coherent characteristics both in terms of natural coastal processes and uses. The compartmentalisation of the coast into these units (as indicated in Map 1) is mainly for a practical purpose related to policy implementation and management.

7.13 Eight discrete units have been identified for the Northwest coastal zone, as follows:

1. Ghallis to Mistra
2. Mistra to Ghajn Zejtuna
3. Ghajn Zejtuna to Anchor Bay (incl. Marfa Ridge)
4. Anchor Bay to Ir-Ramla tal-Mixquqa
5. Ir-Ramla tal-Mixquqa to Ras ir-Raheb
6. Ras ir-Raheb to Ix-Xaqqa
7. Ix-Xaqqa to Wied Babu
8. Wied Babu to Hal Far.

Table 4: North West Local Plan Strategic Direction

Land use	General Strategy
Settlements	No additional release of land for residential purposes is being proposed as there is adequate supply for the 10-year period covered by the plan.
Agriculture	A strategy to protect existing areas of agricultural value is included in the plan, with stricter control on farmhouses and agricultural buildings.
Minerals and Waste Management	The plan promotes the restoration and after-use of quarries and includes policies that aim to minimise waste production and reduce tipping in the countryside.
Tourism	The overall strategy is to steer the sector towards sustainable development, aiming to offer a quality product.
Recreation	The Local Plan promotes regional and national centres for informal recreation, which would include both land and water sports. The aim is to attract recreational activities to sites where the impact on the urban and rural environment would be limited. It includes the provision of country parkways and footpaths.
Landscape	A strategy for protection and enhancement of geographical aesthetic and cultural aspects of the Maltese Landscape
Conservation	The protection from inappropriate development of the country side and coast in general, aquifer recharge areas and water catchments areas, areas of scenic value, archaeological sites, ecological sites and nature reserves. A strategy for afforestation to conserve open landscape is included (Mgiebah area)
Coastal Areas	The protection and enhancement of the coast including improved public access and public ownership.

Source: North West Local Plan, 2001.

8 Coastal Policies

8.1 Most of the identified issues within the North West coast have been covered in the Draft North West Local Plan as indicated in the Strategic Environmental Assessment. It is feasible therefore to recommend that the North West Local Plan policies should be adopted.

Policy SCM 1

North West Local Plan

The strategic direction and policies affecting the coastal zone adopted in the Draft North West Local Plan (January 2001) should be implemented.

8.2 The NWLP policies affecting the coastal zone require an umbrella framework within which more direction is given in order to ensure the sustainable use of coastal and marine resources as well as to minimise and reduce user conflict in the coastal zone. The strategy proposed within the Coastal Strategy Topic Paper is aimed towards achieving these objectives mainly through the development planning process as a primary tool.

Policy SCM 2

Coastal Strategy

The coastal zone strategy formulated by the Planning Authority shall be adopted when implementing the land-use policies and shall provide additional guidance for the integrated area management plan at the local level.

8.3 Defining the coast in these categories allows for a better planning framework where strategic policies, based on the strategy objectives, correspond to identifiable geographical areas. The Coastal Profile and SEA documents identified particular issues within the coastal zone that need to be tackled to achieve integrated coastal management. Policy direction to address these issues is thus indicated.

Policy SCM 3

Protected Areas

The main policy direction within the predominantly rural coastline will aim to secure protection of Scheduled Areas and Nature Reserves. Management Plans for these areas are to be drawn up with an aim to include a high degree of public involvement from inception phase through to implementation. Adequate routes for public access need to be identified and designed with minimal intervention. Informative measures to increase public awareness must also be included at adequate intervals/localities.

Policy SCM 4

Agriculture Activity

The continuation of agricultural activity in predominantly agricultural areas is to be encouraged. Any activities or uses that are compatible with agriculture and may promote the continuation of this industry are also encouraged. Measures to safeguard agricultural areas within scheduled property must be adopted in Management Plans.

Policy SCM 5

Mineral Extraction

Development in the vicinity of existing operational quarries is limited to avoid conflicts. At the same time the extension of these existing quarries towards the coastline is prohibited. Areas known to have mineral reserves should also be protected from development that would prevent future exploitation, should this be the best practical environmental option.

Policy SCM 6

Recreation Facilities in Rural Coast

For recreational/urban pockets, within the predominantly rural coast, development should be limited to safeguard the predominant use of the area. This includes the improvement of public access, as well as harbour facilities, where applicable, through appropriate measures that conform to the characteristics of the surrounding coastline. The introduction of urban waterfront furniture should be prohibited in predominantly rural coastlines.

Policy SCM 7

Beach Management

A beach management program should be adopted for identified bathing areas in order to ensure health and safety. A management plan for each beach should be identified in order to ensure that appropriate measures are taken to provide adequate facilities subject to the characteristics of the surrounding coastline. The management plans will address water quality monitoring, beach cleaning, zoning of water sports, provision of access to and from the sea, education/public awareness amongst other items.

Policy SCM 8

Rehabilitation

New development that may be considered in the predominantly rural coastal areas is to be related to the rehabilitation of abandoned agricultural fields or spent quarries. Proposals for rehabilitation that promote informal recreation would be considered favourable. Development related to improvement of public access for informal recreation should be encouraged.

Policy SCM 9

Urban Coast Development

For predominantly urban areas development of the coastal zone should promote multiple use of the coast and not displace legitimate coastal uses; visual access from promenades should be safeguarded.

Policy SCM 10

Industrial Development

For industrial areas development should be restricted to maritime/industrial related uses. Multiple and compatible uses that require port/harbour facilities within these areas are encouraged. Where appropriate public access should be safeguarded even if this may be limited to views of ports or harbours.

Policy SCM 11

Marine Conservation

The candidate Marine Conservation Areas identified within the current Structure Plan should be afforded legal protection to allow better management of activities within and adjacent to them. Such protection should extend to other areas, including those beyond the 50m-depth contour. Until more detailed information is available on the natural characteristics, a precautionary approach towards development should be taken. Measures to reduce and eliminate land-based sources of pollution are to be incorporated within the existing development control system.

Policy SCM 12

Development at Sea

New development at sea should consider the resulting impacts on both the marine environment and other coastal and marine uses. As much as possible new development that does not necessitate contiguous coastal land area for operation (such as aquaculture) should be located beyond the 50-m depth contour.

Policy SCM 13

Port and Harbour Development

New development related to ports and harbours, including marinas and sailing facilities (which do require contiguous land area for operation), are to be directed to already developed areas along the predominantly urban coastline, subject to an Environmental Impact Assessment.

9 Implementation

9.1 The crucial phase of any management plan is its implementation. The management objectives proposed by the SCM activity for the North West of Malta can be summarised as being a Strategic Plan, largely influenced by the land-use planning process whereby spatial planning of the coastal zone is translated into geographical units with different characteristics. The Draft North West Local Plan, albeit a land-use planning document, recognises the role that other institutions and agencies have in securing its implementation. The LP thus identifies which entity would be involved in the implementation of each policy that has been formulated. It does not however indicate how this will be carried out.

9.2 As already mentioned, the SCM activity has gone a step further than traditional land-use planning by focusing on policy integration measures for the coastal zone. As a result, the proposed Management Plan inherently requires the participation of all relevant stakeholders in order for its implementation to be effective. It is therefore, the aim of this section to identify a possible framework within which the objectives are achieved.

Co-ordinating Committee

9.3 Given the legal and functional responsibilities of the Planning Authority and the Environment Protection Department, the latter being also the National Focal Point for CAMP - Malta, the best practical scenario would be for a multidisciplinary team composed of members of staff from both institutions, to take responsibility for the implementation of the Management Plan. Representatives from the Malta Maritime Authority, Agriculture Department, the Malta Tourism Authority, the Health Division, Local Councils Department, the Ministry for Economic Services, the Water Services Corporation and the Museums Department should also be on this Committee. Representatives of the scientific community may have a potential role, to co-ordinate research requirements.

9.4 The function of this team would be to oversee the co-ordination required for implementation, through the delegation of responsibilities to other entities. In this manner, full participation at all levels can be assured. The Committee would be answerable to government, therefore the support of relevant Ministries should be sought to ensure commitment and provision of resources.

9.5 Those issues that can be implemented through existing procedures such as the Environmental Impact Assessment process and development control are to continue to be regulated as such. These processes themselves involve a high degree of consultation and co-operation between agencies as well as the general public.

Priority Areas: Thematic Sub-Committees

9.6 Other objectives that have been recognised as priority areas, relate to specific action for particular issues such as rehabilitation projects, management plan formulation for protected areas and beach management programs. A lead agency can take responsibility to oversee implementation of a specific action, depending on the theme. For example, the Agriculture Department can lead action for improvement of agriculture activities. Each sub-committee is to be composed from representatives of stakeholders within the area in question. These include members of the private sector, the public as well as non-governmental organisations.

Priority Areas: Actions

9.7 The priority areas identified are listed as follows:

- ◆ Development of Management Plans for Protected Areas
- ◆ Establishment of Marine Conservation Areas and formulation of Management Plans
- ◆ Rehabilitation and Improvement of Agriculture
- ◆ Development of Rehabilitation Programs for spent quarries and legal dump sites
- ◆ Development of Beach Management Programs

9.8 The main coastal issues that need to be addressed within these Priority Action Areas include:

- ◆ Regulation of Hunting and Trapping
- ◆ Pollution risks
- ◆ Cultural Heritage Protection
- ◆ Public Access and Rights of Way
- ◆ Enforcement
- ◆ Data collection and management
- ◆ Coastal erosion

Coastal Planning Units: Area Management

9.9 A possible option to address the site-specific issues through an integrated approach is to adopt management plans for each individual coastal planning unit, on the basis of the North West Local Plan as well as the findings from the Thematic Areas identified above. At this stage responsibility for implementation should mainly rest with the Local Councils and actual stakeholders in the area concerned, with continuous guidance from the government agencies.

Funding

9.10 The most critical factor for implementation is the availability of financial resources. At the highest strategic level, these are related to commitment from separate Ministries to appoint representatives on the Co-ordinating Committee to work full-time on the project. The Co-ordinating Committee would have the responsibility together with the Sub-committees responsible for each priority action area aim to identify and secure potential sources of foreign funding. Such sources, which include the EU and METAP, depend upon the nature of the project proposal.

9.11 The next form of financial commitment relates to funding for the initiation of work on the priority areas identified. This implies that the relevant agencies adopt these Priority Areas as part of their own separate business plans and allocate the required resources in terms of staff and equipment.

9.12 Once this is achieved and the work initiated, then it is crucial that each Sub-Committee identifies ways and means of how each management option is to be financed. Various options are available, including voluntary agreements with the private sector, NGOs and voluntary participation from the public, as well as innovative economic activities that may also prove how development can take place whilst safeguarding the natural resource base.

Time Frames

9.13 As a preliminary target, the following time frames are indicated in Table 5. The entire program covers a period of approximately 8 years, compatible with the 10-year time frame for the Local Plan.

Phase 1

Establishment of Co-ordinating committee: 6 months from adoption of Strategic Plan

Phase 2

Work program for Priority Area Action: 6 months after Co-ord. Committee set up

Phase 3

Establishment of Sub-Committees: 6 months. To be initiated during Phase 2

Phase 4

Implementation of Priority Area Action: 2-3 years. Initiated after Phase 3

Phase 5

Work Program for Eight Management Plans: 2 years to be initiated in third year of Phase 4

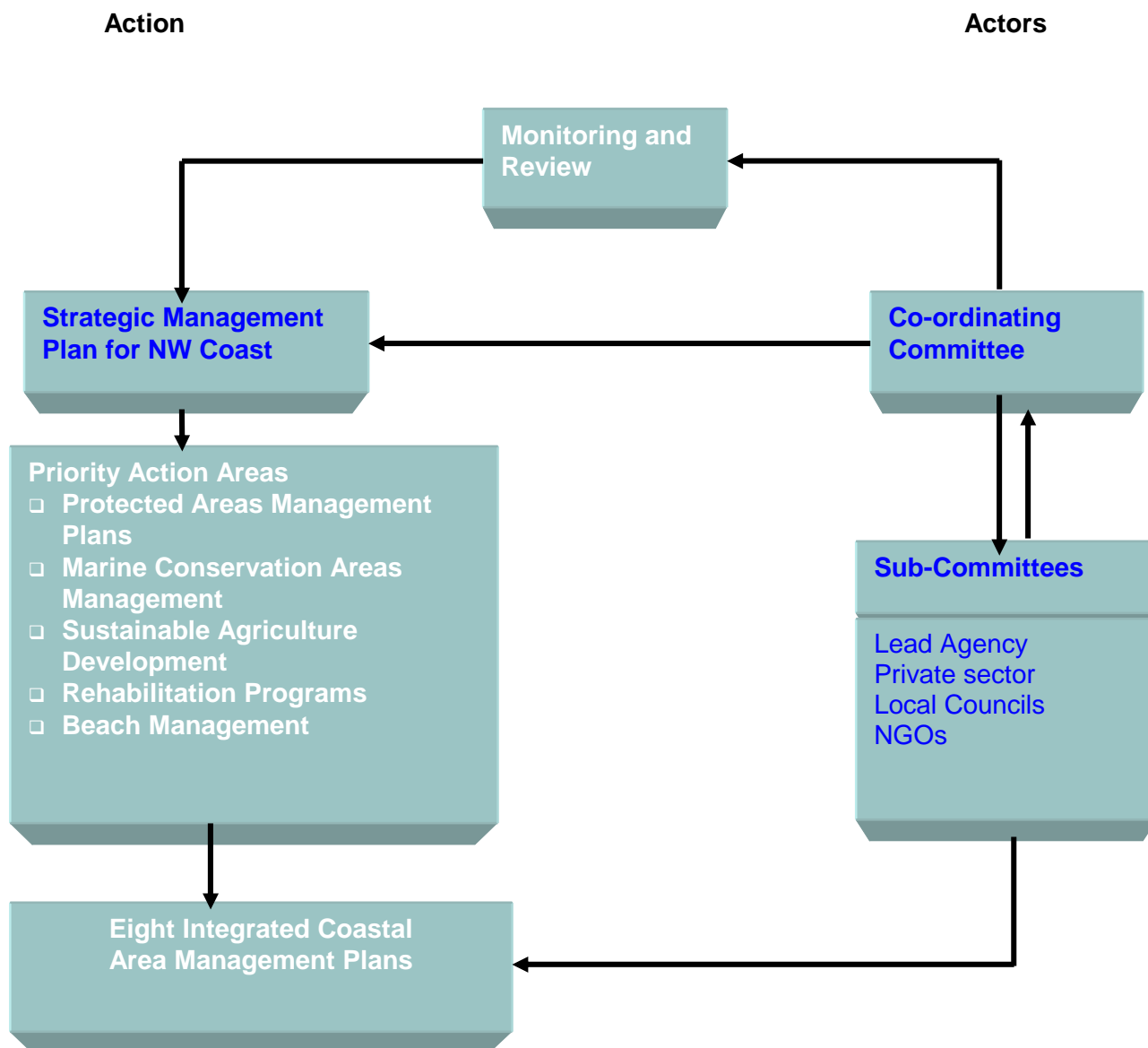
Phase 6

Implementation of Management Plans: 3 years. Initiated at end of Phase 5

Table 5 Proposed Time-Frame for Strategic Management Plan

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8
Phase 1								
Establish Co-ord. Comm.								
Phase 2								
Priority Area Work Prog.								
Phase 3								
Establish Sub.Com.								
Phase 4								
Implem. WP for Action Prog.								
Phase 5								
WP for Eight Man.Plans								
Phase 6								
Implement 8 Man. Plans								

Implementation Framework



10 Monitoring and Review Guidance

10.1 The first step to review the effectiveness of the proposed strategic plan is at the end of Phase 4. The Co-ordinating Committee will have the responsibility to evaluate work carried out by the sub-committees in the preparation and implementation of the priority action areas work program.

10.2 At this stage, particular attention is required to identify any problems encountered, any new issues that evolve, and to finally correct and revise the priorities of the Strategic Plan before Phase 5. It is important for the review process to involve all the stakeholders involved throughout Phase 1-4 to ensure that all issues are covered.

10.3 Individual monitoring programs would then need to be set up during Phase 5 when Management Plans for each Coastal Planning Unit are formulated.

Reference:

PAP/RAC. 2000 - MAP CAMP Malta Project: Inception Report

Planning Authority. 2000 Coastal Profile I

Planning Authority. 2000 Coastal Profile II

Planning Authority. 2002 Strategic Environmental Assessment – North West Coast

Planning Authority. 2001 Consultation Draft North West Local Plan

Sustainable Coastal Management Activity



Legend



Sustainable Coastal Management Activity: Land Area under Study



North-West Local Plan Boundary



Coastal Planning Unit Boundary

Coastal Planning Units

1. Ghallis to Misra
2. Misra to Ghajn Zejtuna
3. Ghajn Zejtuna to Anchor Bay (incl. Marfa Ridge)
4. Anchor Bay to Ir-Ramia tal-Mixquqa
5. Ir-Ramia tal-Mixquqa to Ras ir-Raheb
6. Ras ir-Raheb to Ix-Xaqqa
7. Ix-Xaqqa to Wied Babu
8. Wied Babu to Hal Far.

CAMP MALTA: AREA UNDER STUDY

Scale : **1:800, 00** Date : **February 2002** Figure : **1**

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Sustainable Coastal Management Activity



Legend

-  Coastal Zone
-  Landfill Site
-  Reverse Osmosis Plant
-  Power Station
-  Sewage Outfall
-  Sewage Overflow
-  Informal Recreational Area
-  Tourist Accommodation site
-  Land extent of Candidate Marine Conservation Area (Structure Plan 1990)
-  Land-Based Fish Farm (Production Unit)
-  Quarries: Hardstone

Softstone
Source: Coastal Strategy Topic Paper

Terrestrial Coastal Uses Focus on NW

Scale: 1:125,000
Date: February 2002

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Figure: 2

Sustainable Coastal Management Activity



AWTORITÀ TA' L-IPPLANAR
PLANNING AUTHORITY

Legend



Coastal Zone



Bunkering area



Main rafting zone for Cory's Shearwater and Levantine Shearwater

50 metre bathymetric contour

Land extent of Candidate Marine Conservation Area (Structure Plan 1990)

Location of sea-based fishfarm

Dive Site

Spoil Ground

Source: Coastal Strategy Topic Paper

Coastal Marine Uses Focus on NW

Scale :

1: 140, 000

Date :

February 2002

Figure :

3

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Sustainable Coastal Management Activity



Legend

 Predominantly Urban Coast

 Predominantly Rural Coast

 Protected Areas (inc. Scheduled Property, Nature Reserves and areas that merit protection).*

 50 metre bathymetric contour

 Land extent of Candidate Marine Conservation Area (Structure Plan 1990)

 Coastal Planning Unit Boundary

Coastal Planning Unit Number

Source: Coastal Strategy Topic Paper

Proposed Strategy for the Coastal Zone Focus on NW

Scale : 1 : 140,000
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Figure : **4**





CAMP – Malta
Sustainable Coastal Management Activity

STRATEGIC ENVIRONMENTAL
IMPACT ASSESSMENT
REPORT
of the
DRAFT NORTH WEST LOCAL PLAN
COASTAL POLICIES



Planning Authority
December 2000

CAMP – Malta
Sustainable Coastal Management Activity

STRATEGIC ENVIRONMENTAL IMPACT ASSESSMENT
REPORT
of the DRAFT NORTH WEST LOCAL PLAN
COASTAL POLICIES

Planning Authority, February 2002

Sustainable Coastal Management Team

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APPENDICES

- Appendix 1 North West Coast
- Appendix 2 Policy Impact Matrix
- Appendix 3 Integrated Policy Impact Matrix

1 INTRODUCTION

1.1 CAMP-MALTA AND SUSTAINABLE COASTAL MANAGEMENT ACTIVITY

One of the Activities in the CAMP-Malta project deals with Sustainable Coastal Management (SCM) in the northwest part of Malta with the final aim of formulating an Integrated Coastal Management Plan. It has been the intention of CAMP-Malta to introduce new techniques with which Integrated Coastal Area Management (ICAM) can be effectively implemented. One specific tool identified for the SCM activity is Strategic Environmental Assessment (SEA).

For this purpose a training seminar conducted by Mr. Barry Sadler, MAP Consultant, was held in January 2001. The seminar introduced the subject and also helped identify how it may be applicable within the SCM activity itself.

This report presents the outcome of the SEA exercise that was carried out by the team for the SCM activity, following the seminar.

2 BACKGROUND ON SEA

2.1 STRATEGIC ENVIRONMENTAL ASSESSMENT – THE PURPOSE

The purpose of SEA is to ensure that environmental considerations are integrated at the initial stages within policies, plans, programmes and other types of strategic decisions and actions. In addressing the source of environmental deterioration, rather than mitigating their impacts, SEA can assist decision makers to achieve an early identification of best practicable environmental options. In this way it also assists the Environmental Impact Assessment process of proposed projects within the area in question.

SEA can be seen as a necessary but not sufficient mechanism for promoting sustainable development. The relationship of SEA and sustainable development can be strengthened by guidance on sustainability principles and criteria for evaluating and attributing significance of environmental effects. In addition, SEA should be applied as part of a larger kit of tools for integrated coastal zone management or other types of strategic planning (Sadler, 2001).

3 OBJECTIVES

3.1 AGREED TERMS OF REFERENCE

The Draft North West Local Plan (NWLP) of the Planning Authority was chosen as a suitable document for a SEA. This land use plan for the NW of Malta is highly integrated and it was agreed that it should formulate the basis of the coastal management plan for the area.

The SEA exercise was initially intended to focus on two aspects:

- i. To identify areas relating to CZM not addressed by the Local Plan
- ii. To identify additional studies required for a strategy towards marine resources management

The gap analysis was intended to look at the relevant Local Plan policies addressing the coastal zone to identify:

- policy vacuum;
- any conflicts with other strategies (e.g. tourism);
- additional information required to address management

The other SEA exercise was specifically aimed at the marine environment, since the large policy lacuna in the sector is acknowledged. This exercise was to be undertaken as a second phase, depending on time constraints.

4 METHODOLOGY

4.1 SELECTING POLICIES FOR SEA

The selection process involved the identification of those NWLP policies that in any way affect the coastal area as defined in the Coastal Profile I (refer to Map 1 in Appendix 1). It is to be noted that the version of the NWLP used for the exercise was that available in January 2001, which has since undergone other amendments and changes.

The NWLP includes two types of policies, General Policies (GP) that apply to the entire Local Plan area and Area Policies (AP) that address specific areas/sites. The list of policies had originally been selected in the Coastal Profile II report with the purpose of evaluating how the NWLP is addressing the coastal zone. An assessment of all the GPs was not viable due to a lack of resources and time therefore only those GPs that were found to have an influence on issues present in the coastal zone, as identified in the Coastal

Profile, were chosen. A total of seventy - four (74) policies from the Draft North West Local Plan were selected.

4.2 ESTABLISHING THE ASSESSMENT PARAMETERS

The parameters against which each policy was assessed were adapted from a similar exercise undertaken by the Northern Ireland Planning Service for the Craigavon Area Plan 2010. The exercise, based on the research by Dr. Riki Therivel, involved the assessment of the various policies against pre-defined appraisal criteria.

The SEA focused mainly on the impacts of the policies on environmental resources, in accordance with the agreed Terms of Reference. However, in order to obtain a broader picture representative of the multidisciplinary approach of ICAM, other aspects were also considered. These included social, futurity and participation aspects. In total, 49 parameters falling under 5 'Themes' and 22 'Topic Areas' were included, as indicated in Table 1.

Table 1: Chosen Parameters

THEMES	TOPIC AREAS
<i>ENVIRONMENT</i>	<ul style="list-style-type: none"> - Biodiversity - Landscape - Global Warming & Air Pollution - Management of the Water Environment - Mineral Resource (Mineral Conservation) - Waste Disposal - Energy Efficient Transport Modes - Land & Materials - Urban Environmental Quality - Cultural Heritage
<i>QUALITY OF LIFE</i>	<ul style="list-style-type: none"> - Current Needs - Education - Public Health - Recreation
<i>SOCIAL</i>	<ul style="list-style-type: none"> - Disabilities - Ages
<i>FUTURITY</i>	<ul style="list-style-type: none"> - Future Needs - Future Choices - Future Impacts
<i>PARTICIPATION</i>	<ul style="list-style-type: none"> - Review - Public Input - Partnerships

4.3 ASSESSING THE POLICIES

The selected policies were divided amongst the SEA team members, who undertook the preliminary assessment of the group of policies assigned to them. A Policy Impact Matrix (PIM) was prepared for each policy and is presented in Appendix 2. The Matrix describes the type of impact, if any, that each policy has on each assessment parameter. For the purpose of this exercise, only the potential **direct impacts** were considered.

The impacts were classified into six categories as listed in Table 2.

Table 2: Impact Categories

++	Strongly positive
+	Slightly positive
0	No impact
X	Slightly negative
XX	Strongly negative
?	Unknown/uncertain impact; Not enough data available; Depends on circumstances.

The policies were equally distributed with the five team members who carried out a preliminary assessment. Once this was finalized, a second round of assessment was made where policies were swapped and team members reviewed each other's assessment. This process was carried out to minimise the level of subjectivity and to harmonise the assessment process between all seventy-four policies concerned. Disagreements with the forecasted impacts identified in the preliminary assessment were highlighted and commented upon by each team member. Continuous discussions eventually led to additional agreed changes to the original PIM. This method was considered to be an effective means to ensure, as much as possible, a coherent interpretation of the assessment parameters used in the PIM. Furthermore, due to the lack of time available, it considerably reduced the time taken to carry out this part of the SEA.

4.4 INTEGRATED POLICY IMPACT MATRIX (IPIM)

Following agreement on the results for each PIM, the second stage involved the integration of the results of each PIM into one Impact Matrix, known as the **Integrated Policy Impact Matrix (IPIM)**. This matrix lists all the seventy-four (74) policies and their relevant impacts against the assessment parameters used in the PIM, as listed in Appendix 3 of this report.

4.5 ASSESSMENT OF INTEGRATED POLICY IMPACT MATRIX (IPIM)

Two methods have been utilized to assess the IPIM and derive conclusions on the coastal policies in the NWLP; one method adopted a points system and the other assessed the counts of impacts.

4.2.1 Assessment By Counts of Impacts

This method involved the manual counting of impacts for each assessment parameter, keeping a distinction between the various types of impact. Table 3 illustrates a sample of the results, showing an example on the topic area of 'Biodiversity':

Table 3: Sample of Results for 'Biodiversity' Topic Area

APPRAISAL CRITERIA	++	+	0	X	XX	?
Biodiversity (Does the policy threaten or enhance natural habitats or wildlife)						
Safeguard designated sites?*	22	14	30	4	1	3
Increase the number of designated sites?* (AEI & AAV)	3	0	71	0	0	0
Protect and/or promote wildlife potential in general?	12	25	25	8	0	4

This method looks at the number of counts of each impact category, per policy, thus allowing a distinction between the various types of impacts (i.e. strongly/slightly positive/negative), to be maintained. In adopting this method it is easier to illustrate clearly the potential impact for each category.

The main drawback of this method arises when attempting to compare the Topic Areas and Themes with each other since the assessment parameters were not equally distributed amongst all Topic Areas (refer to Appendix 2). Furthermore, the main focus of the SEA was to assess the coastal policies' impacts on the environment, and consequently, most assessment parameters had an environmental theme. To overcome this drawback, the **Average Count** was used (i.e. the number of counts divided by the number of assessment parameters within the same Topic Area/Theme).

4.2.2 Assessment By Points

An attempt was made to attribute a weighting to each potential impact. This method assigns points to each impact, according to its nature and magnitude, as follows:

IMPACT	VALUE
++	2
+	1
0	0
X	-1
XX	-2
?	0 highlighting uncertainty

This method was useful in evaluating and identifying the main Thematic thrust of the chosen policies. However, care should be taken when using this method, mainly because of the following reasons:

- Adding a positive and negative impact would result in a value of '0', thus cancelling each other. This is not adequate since it would result in a no impact, which is definitely is not the case;
- Adding the values also considers each assessment parameter as having equal weighting, for example, protecting an Area of High Landscape Value or designating a new one is of equal importance as developing sustainable partnerships;

To avoid neutralisation of impacts, the positive and negative values were assessed separately to represent the positive impacts and negative impacts respectively. Furthermore, this distinction between a strongly positive/negative and a positive/negative impact was retained.

A value of '2' was assigned to the strongly positive and a value of '1' to the positive, similarly a value of -2 was assigned to the strongly negative and a value of -1 to the negative impact. Table 4 illustrates a sample of the results obtained for the 'Environment' Theme.

Through vertical addition, a total value could be obtained for each policy. Although this may be acceptable when keeping the addition within the same Theme, it will not be valid when adding parameters from different Themes. This is because:

- It would consider different assessment parameters as equal;
- It is not possible that a policy addresses all assessment parameters, hence the value obtained is not of any significance. This is because a policy with a lower value than others does not imply that it did not 'perform' well compared to the others, but it can also mean that it is more specific and had an impact on less parameters than the rest.

For comparative purposes, the **Average Value** was used since the assessment parameters were not equally distributed amongst the Topic Areas.

Table 4: Sample for Environment Theme

THEME/SUB-TOPIC	VALUES	
	Positive Impact	Negative Impact
ENVIRONMENT	572	120
Biodiversity	107	14
Landscape	191	27
Global Warming & Air Pollution	23	5
Mgt. of Water Environment	19	6
Mineral Resources	7	4
Waste Disposal	5	18
Energy Efficient Transport	5	17
Land & Material	118	18
Urban Environmental Quality	34	11
Cultural Heritage	63	0

5 ASSESSMENT RESULTS OF NWLP COASTAL POLICIES

This section summarises the main results and highlights the conclusions of the assessment.

5.1 GENERAL ASSESSMENT OF THE NWLP COASTAL POLICIES

The first assessment carried out was to determine the distribution of potential impacts (i.e. ignoring the no impacts) by Theme. The chart below summarises the results of this assessment.

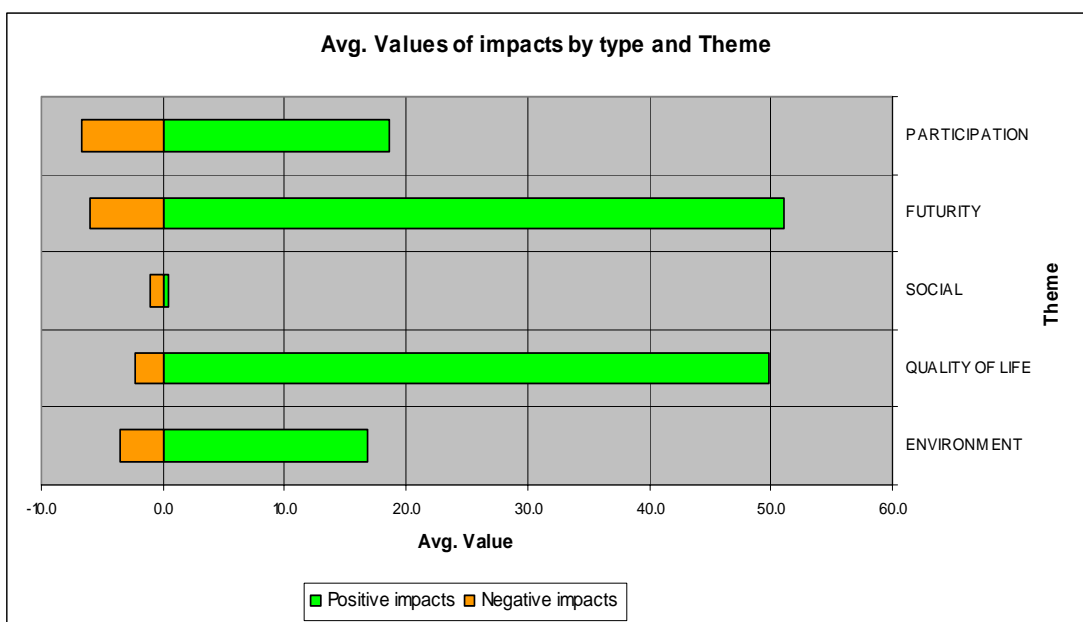


Figure 1: Distribution of Impacts by Theme

The **points** method was used for the above assessment and the average per Theme was considered. As can be seen, the main emphasis of the coastal policies is on the 'Quality of Life' and 'Futurity', followed by 'Participation', 'Environment' and 'Social'. Since the scope of this assessment should focus mainly on the coastal policies' impacts on the environment, the Environmental Theme will be looked into in more detail in section 5.2.

What follows is an assessment of the issues relevant to the formulation of the **Integrated Coastal Management Plan (ICMP)** falling within the Themes other than the 'Environment' Theme.

5.2.1 Recreation and Public Access

Recreational use and public access are two important coastal issues. Figure 2 below illustrates the distribution of the impacts within the Theme on 'Quality of Life', under which recreation and public access are addressed:

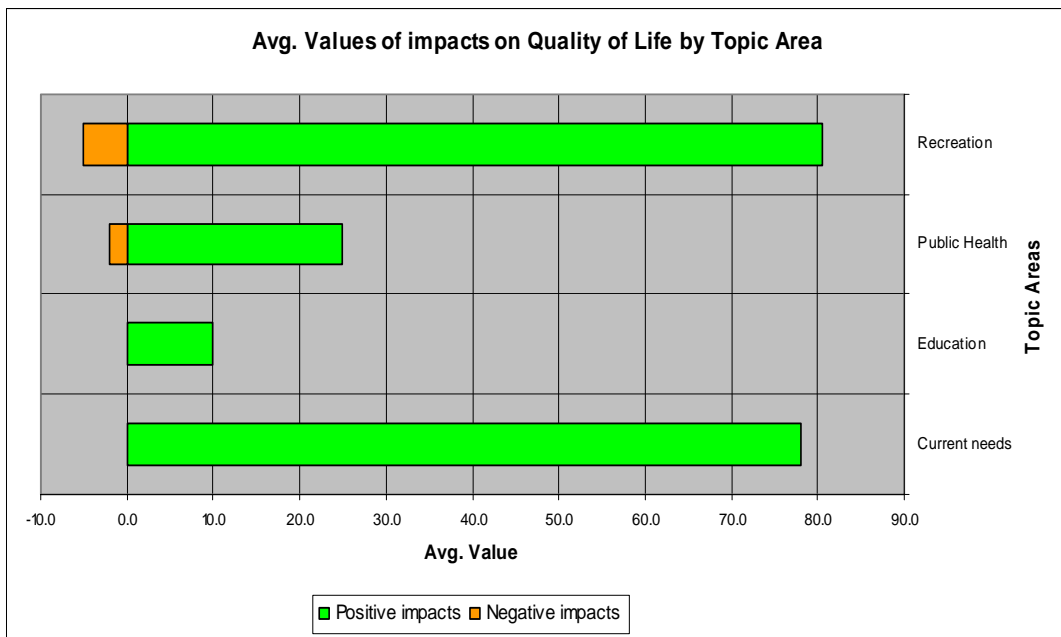


Figure 2: Impacts on Quality of Life by Topic Area

As can be seen, The NWLP coastal policies positively address the recreational use of and public access to coastal areas (both under Topic Area *Recreation*). However, as Figure 3 illustrates, recreation shares a significant amount of uncertainties. These mainly result from the prohibition of rock climbing in designated areas, the restoration of Tal-Ahrax quarry and from provision for Horse Riding facilities. These suggest that the management of these activities is important since negative impacts may result from inadequate management. The **Integrated Coastal Management Plan (ICMP)** should hence cater for alternative sites for rock climbing and ensure that restoration plans for quarries secures public use and access of the coast. Conflicts between pedestrian use and horse riding should also be resolved through adequate management.

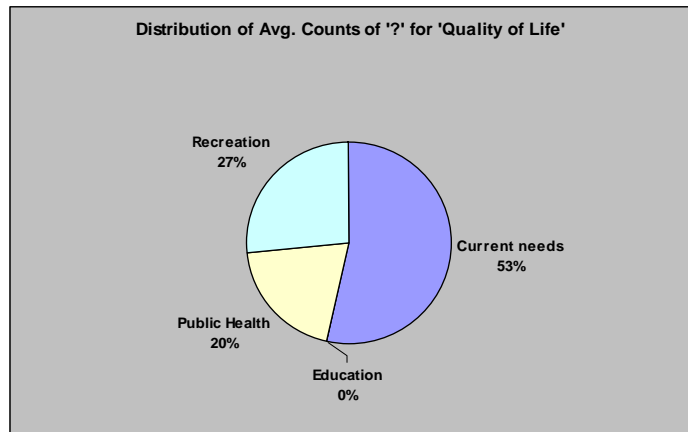


Figure 3: Distribution of uncertain impacts under ' Quality of Life'

5.2.2 Disabilities

Provision of good public access also includes access for disabled people and one of the assessment parameters assessed this particular issue. Providing adequate access for the disabled is important to enhance their recreational use of an area.

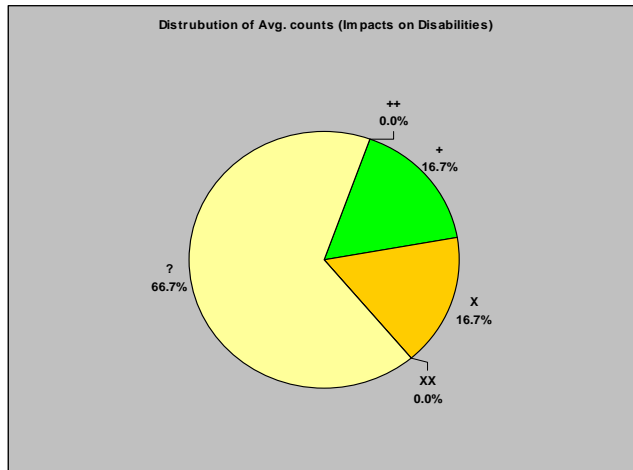


Figure 4: Distribution of impacts on Disabilities.

As figure 4 clearly illustrates, most potential impacts on disabled people are uncertain, and this is due to the fact that access for the disabled depends on the design of individual projects. It is hence important for the ICMP to take on board **access for the disabled** in order to allow this social group to benefit from the recreational opportunities derived from the coastal zone.

5.2.3 Education

Coastal areas also provide great potential for education, especially in terms of environmental education. As can be seen from figure 2, although the impacts are positive, it is evident that the coastal policies did not recognise the educational potential of the coastal area. However, this is justifiable since the local plan is a land use document, and it is more appropriate that a management plan addresses this issue in more detail.

5.2.4 Environmental Capacity and Quality

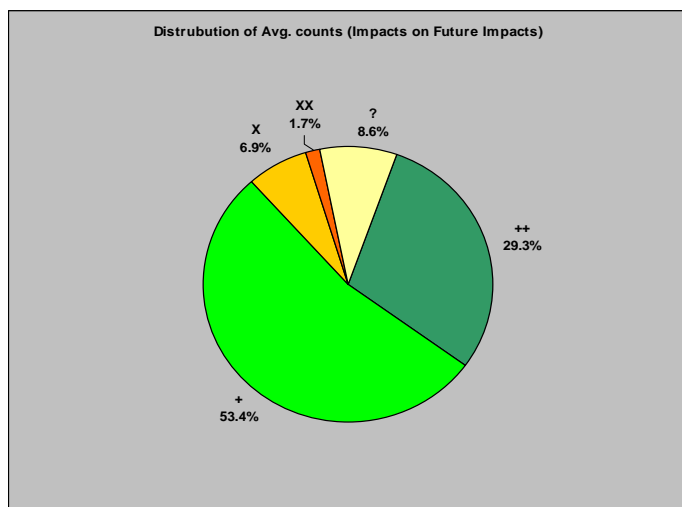


Figure 5: Distribution of impacts on 'Future Impacts'

The Topic area, *Future Impacts* under the Theme 'Futurity' is also of concern for the formulation of the management objectives. This Topic assesses the impact on the environmental quality and capacity of the coastal zone. Figure 5 illustrates the distribution of impacts on this Topic Area.

As can be seen, the overall impact is significantly positive, however, there is a significant amount of uncertain impacts. These result from the following:

- Land Base facilities for Marine Cages;
- Designation of Picnic Areas;
- Designation of Camping site at Ghajn Tuffieha; and
- Horse Riding.

These uncertainties revolve around the environmental capacity of the area in which the above activities are planned. It is important that the management options for the coastal area take into consideration the **environmental capacity** of the areas being managed, especially with respect to Picnic Areas and Camping Sites, in order not to allow excessive use of an area, which results in environmental degradation.

5.2 IMPACTS OF THE NWLP COASTAL POLICIES ON THE ENVIRONMENT

The Theme 'Environment' was divided into 10 topic areas, each assessing the impacts of the coastal policies on a particular aspect of the environment. Figure 7 lists the topic areas and illustrates the distribution of potential impacts resulting from the NWLP coastal policies on each.

The most addressed topic areas under the Theme 'Environment' were found to be Landscape, Biodiversity, Cultural Heritage and Land & Materials. For the purpose of CAMP, the topic areas *Global Warming & Air Pollution* and *Urban Environmental Quality* were not considered in this report.

5.2.1 Impacts on Landscape

The assessment parameters under the topic area 'Landscape' looked at measures that safeguard, enhance or increase designated areas, the retention of open space and impacts on the general landscape quality. Management of sites aimed at the protection and enhancement of the coastal landscape is important since landscape is an attraction in itself, which also enhances the recreational value of certain areas.

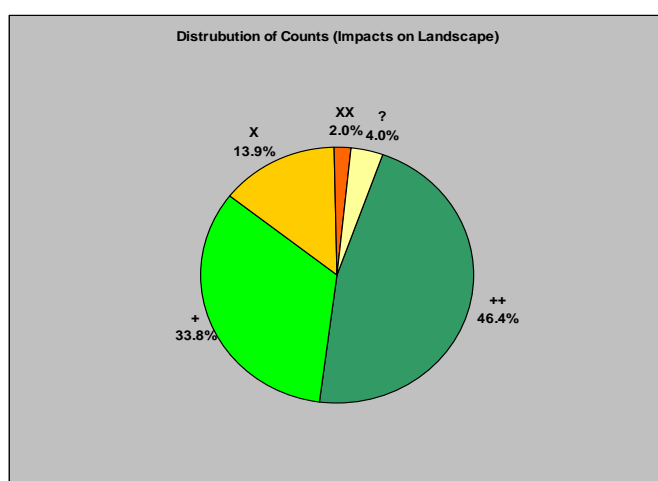


Figure 6: Distribution of impacts on Landscape

5.2.2 Figure 6 shows that the overall impact on landscape is strongly positive, although there are some minor negative and uncertain impacts. The negative and uncertain impacts mainly result from provision of facilities for, camping sites, car parking, horse riding and other activities, which would require a

building to operate effectively. Visual impacts resulting from provisions for activities such as walking /cycling, picnicking, fishing etc can be easily mitigated through design and the materials used. Nevertheless, adequate landscaping can easily integrate small structures within the landscape. It would be useful if this issue were addressed in the ICMP.

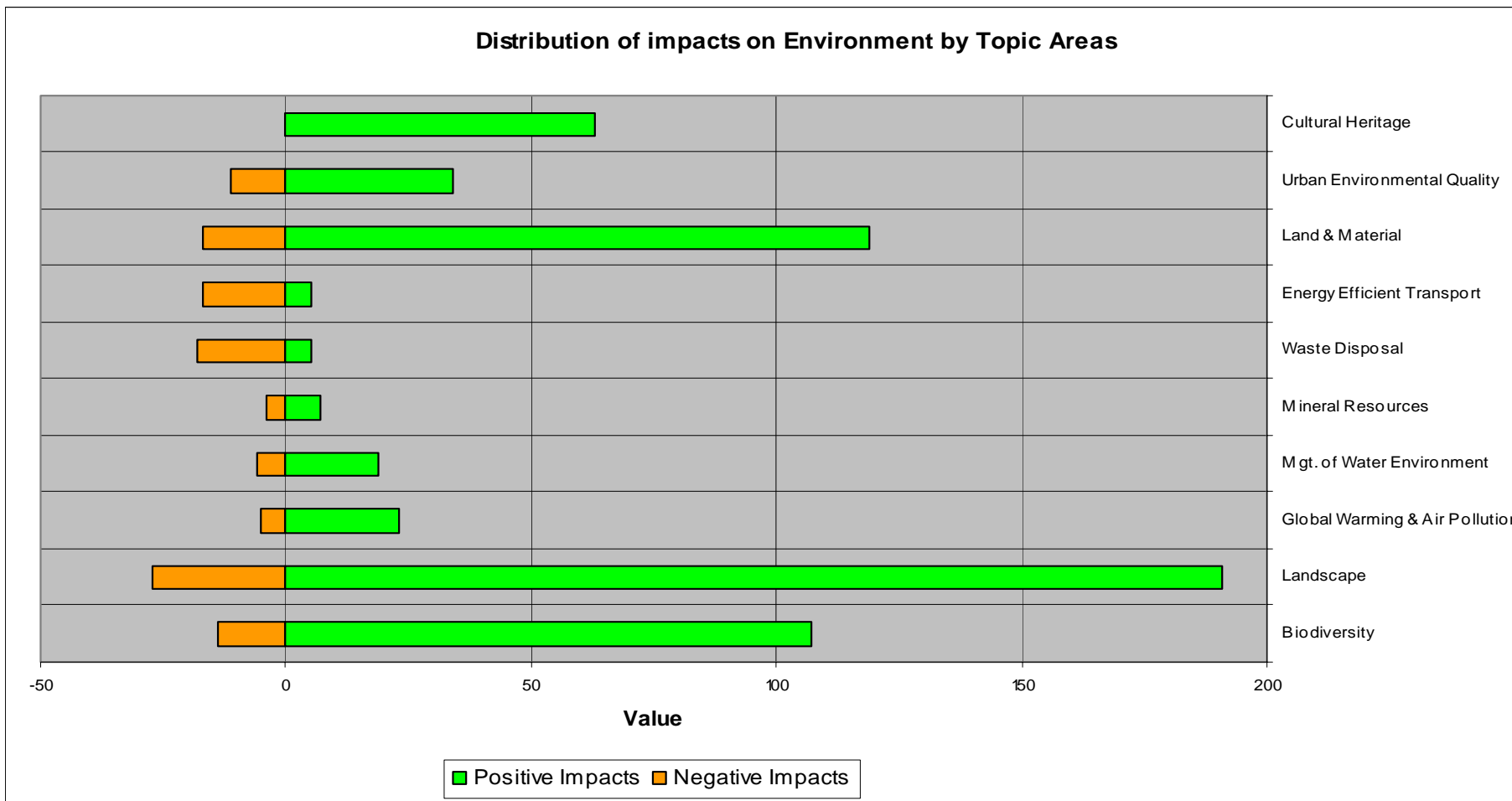


Figure 7: Distribution of impacts under the Theme 'Environment' by Topic Area

5.2.3 Impacts on *Biodiversity*

The assessment parameters under the Topic Area of *Biodiversity* looked at measures for safeguarding and increasing designated sites as well as protecting and promoting wildlife potential. Biodiversity is important in many ways. Apart from its inherent scientific importance, biodiversity also affects the landscape and provides for the educational potential of an area.

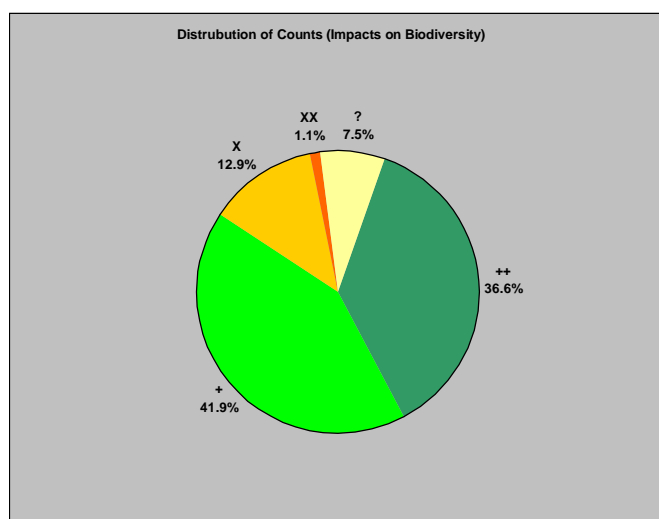


Figure 8: Distribution of impacts on Biodiversity

As Figure 8 illustrates, the results of the SEA show an overall positive impact. Provision of public access (walking, cycling and horse riding) seems to be the main cause of negative and/or uncertain impacts on biodiversity due to trampling. The ICMP should determine levels of access to be allowed, according to the sensitivity and/or importance of the area. Vehicular access also requires adequate management. A considerable number of

informal parking areas are present in coastal areas, and the current degraded state of the environment should not be a justification to develop a formal car park. The ICMP should also identify degraded areas that should be allowed to regenerate by not allowing vehicular access. Access levels in beaches should also be an important management issue since most local beaches are part of a sand dune system.

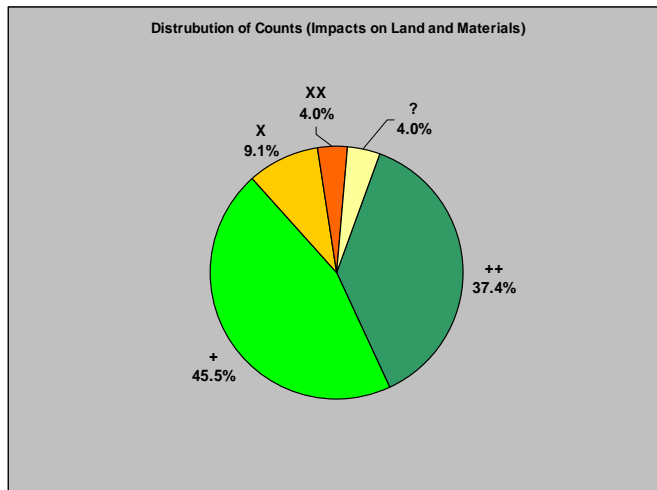
5.2.4 Impacts on *Cultural Heritage*

The assessment parameters under *Cultural Heritage* focused on the built heritage and assessed the conservation of local heritage and safeguarding of protected buildings and monuments.

No uncertain or negative impacts resulted from the assessment of the coastal policies. Nevertheless, the ICMP should still aim at the conservation of heritage and any re-use of historic buildings should be sensitive to its architecture and setting.

5.2.5 Impacts on *Land & Material*

The Topic Area *Land & Material* looked at the use of brownfield and greenfield sites, encouragement of high density development, and the re-use of materials and buildings.



As can be seen from figure 9, the main impacts from the coastal policies are positive. The uncertain impacts arise since no provisions for the reuse/recycling of the **demolition waste** resulting from the removal of illegal buildings were included in the selected policies. The negative impacts arise from the allocation of greenfield land for new development, mainly housing.

Figure 9: Distribution of impacts on Land & Material

5.2.6 Energy Efficient Transport

In case of *Energy Efficient Transport*, one has to keep in mind that this issue is more significant in urban areas and these are generally outside the coastal zone area addressed by the Sustainable Coastal Management activity. The sources of negative impacts are related to the proposed improvement of existing parking facilities and the increase of parking provisions. Although most coastal areas are remote and not feasible to be serviced by public transport, the ICMP should encourage use of public transport to popular recreational areas. It is also important that any development of new uses that attract visitors (such as new horse riding schools, etc.) are directed towards areas served by public transport, thus increasing the choice of travel modes to visitors.

5.2.7 Waste Disposal

The main issue with *Waste Disposal* is related to the fate of the demolition waste from the removal of illegal structures and should be tackled in the ICMP.

5.2.8 Management of the Water Environment

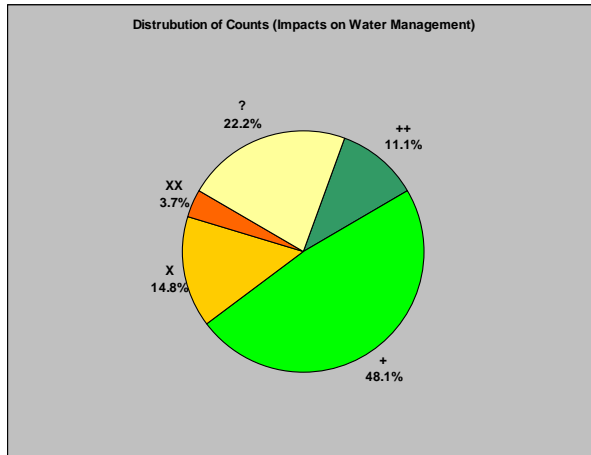


Figure 10: Distribution of impacts on Management of Water Environment

The water environment is an important parameter that should be addressed in the ICMP. Within its management restrictions, the NWLP addressed this topic area briefly, albeit in a relatively positive approach. Yet, it is important to note the relatively high level of uncertain impacts, which amount to 22%, as Figure 10 illustrates.

These uncertainties result from those NWLP policies that promote certain development without specifying actual proposals. These include:

- **Restoration of Quarries for recreation** – Impacts depend on what type of recreational activity will be allowed and what mitigation measures will be adopted to protect the water environment;
- **Water Sports** – Motorised water sports and yachting will have inevitable negative impacts on the area, but they are in high demand by both locals and tourists. The ICMP should hence identify adequate sites for such activities and introduce strict regulations to protect water quality and environmentally sensitive areas;
- **Closure of landfill at Wied Fulija** – The NWLP proposed to close down this landfill. Although this proposal is a positive initiative, the policy only imposes monitoring of emissions and to action if levels of emissions increase. This is a reactive approach and contamination should be avoided or minimised in the first place. The ICMP should identify any precautions to be adopted prior the closure of this landfill to reduce the risk of contamination and also develop an emergency plan in case high levels of contaminants are detected during the monitoring.
- **Removal of illegal structures by the foreshore** – care should be taken in demolishing illegal structure by the foreshore to avoid any overflows of construction debris in the sea. The ICMP should establish Terms of Reference to be abided to during such demolition.
- **Development by the coast** - on the other hand, any developments by the coast, should be monitored during construction and in some cases, even during their operation. Apart from impacts on the ecological value of coastal waters, attention should be paid to bathing water quality as well. The ICMP should identify criteria to be adopted

in identifying which developments need to be monitored during their operational phase.

5.2.9 Mineral Resources

This topic area looked at whether the NWLP coastal policies encourage the reduction of minerals consumption and their reuse and recycling. This topic area was one of the least addressed. It should be noted that mineral resource management is an issue that is specifically addressed in the Draft Minerals Subject Plan for the Maltese Islands (2001). The assessment did not identify any uncertain impacts and the negative ones all result from the allocation of new land for development. Although this topic area is not to be considered as a main management issue in the ICMP, reuse and recycling of minerals should be encouraged.

6 MANAGEMENT OBJECTIVES FOR THE ICMP

Following the SEA of the coastal policies of the North West Local Plan, various issues were identified that should be addressed in the ICMP. These include:

1. Establishing the **Environmental Capacity** for key areas and activities in order to establish levels of access and intensity and type of activities that should be allowed in particular areas to safeguard environmentally important features/areas.
2. **Management of access:**
 - Environmentally sensitive areas may be degraded if over-provision of access is provided; environmental capacity analysis should guide the level of access that should be provided to safeguard sensitive areas;
 - Conflicts between different users are likely to arise between horse-riders, pedestrians, cyclists and cars;
 - Provision of access to disabled people without hindering the rural characteristics and the landscape;
3. **Vehicular access and parking provision:**
 - Vehicular access should be managed to offset the creation of new informal parking areas or enlargement of existing ones (through trampling);
 - The amount of total car parking provisions should be based on the results of the Environmental Capacity study;
 - Existing informal car parking should not be considered as a justification to provide formal parking facilities. The ICMP should assess whether such areas should be allowed to regenerate.
4. **Landscape protection**
 - The SEA identified protection of landscapes and rural characteristics as an important consideration to be addressed in the ICMP;
 - Materials and colours to be used in the construction of structures and in footpaths and other facilities are a key consideration so as to preserve the rural characteristics of the coastal area;
 - Car parking is also intrusive on the landscape and determination of their location should consider its visual exposure.
5. **Water Sports** have a variety of inevitable negative impacts and bring along a number of uncertainties that should be addressed through management. These include:

- Safety of swimmers and the public is a key consideration in providing facilities for water sports; standards should be established and abided to;
- Management of sites identified for motorized water sports should take into consideration the environmental sensitivity of the marine and coastal environment;
- The ICMP should also aim at protecting the water quality.

6. Quarry restoration:

- The ICMP should establish a range of acceptable uses, particularly those promoting public recreation whilst taking into consideration the protection of the environment and water quality (for both bathing and potable water);
- The ICMP should also make sure that adequate mitigation measures are included and monitoring is carried out regularly.

7. Construction and demolition of buildings

- Monitoring of the construction and demolition of buildings/structures by the foreshore is important due to the potential negative impacts on the adjacent marine environment in case of overflows;
- The ICMP should establish TORs to be followed during such activities;
- Wherever possible, the ICMP should also encourage the reuse and/or recycling of the construction debris resulting from the demolition of illegal structures.

8. Closure of landfill at Wied Fulija

- The ICMP should identify precautions to be adopted prior to the closure of the landfill to minimise the risks of contamination;
- Development of a monitoring programme is also crucial;
- An emergency action plan should also be formulated to address potential environmental risks.

9. Mineral Resources

- Although this topic is being addressed in detail in the Draft Minerals Subject Plan for the Maltese Islands, the ICMP should aim at encouraging the reuse and recycling of material to promote sustainability;

10. Educational Potential

- The SEA pointed out that the NWLP coastal policies did not recognise the full educational potential of the coastal area. However, this was understandable since this topic should be integrated within a management plan due to its operational requirements.

Reference:

Planning Authority Coastal Profile I

Planning Authority Coastal Profile II

Planning Authority, Draft North West Local Plan (2000)

Sadler, B (2001) – Draft Working Paper on Strategic Environmental Assessment

APPENDIX 2

THEME	APPRAISAL CRITERIA
ENVIRONMENT	Biodiversity
	(Does the policy threaten or enhance natural habitats or wildlife)
	Safeguard designated sites?*
	Increase the number of designated sites?*(AEI & AAV)
	Protect and/or promote wildlife potential in general?
	Landscape
	(Does the policy threaten or enhance areas of open space)
	Safeguard designated areas?* (in terms of AHLV)
	Enhance designated areas?*
	Increase the number of designated areas?*
	Retain open space?
	Enhance general landscape quality?
	Global Warming & Air Pollution
	(Does the policy help to reduce global warming)
	Safeguard forested areas and/or retain tree cover?
	Increase tree cover
	Does the policy encourage energy efficiency?
	Does the policy encourage the use of renewables?
	Impact on air quality (CO2, NH4, etc.)
	Management of the Water Environment
	Impact on marine water quality
	Maintain ground water levels?
	Safeguard water supply purity?
	Mineral Resources (Mineral Conservation)
	(Does the policy reduce the need for minerals and/or increase recycling of minerals)
	Reduce consumption of minerals?
	Increase reuse and recycling of minerals?
	Waste Disposal
	Reduce production of waste?
	Facilitate reuse of waste?
	Facilitate recycling of waste?
	Energy Efficient Transport Modes
	Does the policy encourage a reduction in motorised travel?
Does the policy promote a shift from private cars to public transport, cycling and walking?	
Does the policy promote alternative fuel technology?	
Land and Materials	
(Does the policy encourage the efficient use of land & materials)	
Encourage the use of brownfield sites (previously developed land)?	
Minimise the use of greenfield land? (undeveloped incl. Agri)	
Encourage higher density development?	
Encourages reuse of materials	

	Maintenance, improvement, renewal & reuse of buildings
	Urban Environment Quality
	(Does the policy improve the quality of the urban area)
	Enhance townscape quality?
	Increase/maintain quality/availability of open space in urban areas?
	Improve the aural/olfactory environment?
	Cultural Heritage
	Does the policy encourage conservation of the local heritage?
Safeguard listed buildings/historic monuments & conservation areas?	
QUALITY OF LIFE	Current Needs
	Does the policy provide for the needs of current generations?
	Education
	Does the policy provide (lifelong) education/training opportunities?
	Public Health
	Does the policy improve health and living conditions?
	Increase safety & sense of security?
	Recreation
Does the policy therefore enhance recreational use of the area?	
Does the policy maintain public access and use?	
SOCIAL	Disabilities
	Does the policy have different effects on people with or without a disability?
	Ages
Does the policy have different effects on people of different ages?	
FUTURITY	Future Needs
	Does the policy provide for the needs of future generations?
	Future Choices
	Does the policy maintain or increase the choices available to future generations to meet their needs?
	Does the policy apply the precautionary principle?
Future Impacts	
Does the policy have significant impact on the environmental quality/capacity or social equity of future generations?	
PARTICIP.	Review
	Does the policy allow for future amendment?
	Public Input
	Does the policy promote consultation with statutory and non-statutory expert bodies?
	Partnerships
Does the policy encourage the development of sustainable partnerships?	

APPENDIX 3

Sustainable Coastal Management Activity



Legend



Area Under Assessment



North-West Local Plan Boundary

CAMP MALTA: Strategic Environmental Assessment

Scale : 1:125,000

Date : February 2002

Figure : 1

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