SCENARIO ANALYSIS: SYNOPSIS OF STAKEHOLDER MEETINGS

NATIONAL STRATEGY FOR THE ENVIRONMENT FOR 2050

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MINISTRY FOR THE ENVIRONMENT, CLIMATE CHANGE AND PLANNING

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Introduction

The NSE process recognised the crucial role of collective collaboration in the zealous task of managing the environment of an island state. Thereby, the NSE process intrinsically seeks to enhance national policy and decision making for better environmental performance and sustainable lifestyles. Targeted discussions with stakeholders over six thematic stakeholder sessions were held in order to confirm the validity of the broadly defined underlying drivers identified in the desktop review of five strategic documents eliciting key environmental challenges. These sessions were determined essential to withhold the Authority's philosophy of maintaining consultation and to build a rapport for the benefit of a strategy that will run for thirty years.

Each stakeholder session addressed different environmental thematic areas, namely the Marine Environment, Environmental Quality (Air, Noise, Light), Natural Capital, Waste, Land and Fresh Waters. These sessions were held in June 2019 to further understand how drivers influence the state of the environment and improve our understanding of how *important* and *predictable* these drivers will be up to 2050. Over 100 public entities, NGOs and academia representatives, together with over 200 business representatives were invited. Of these, around 180 stakeholders from the environmental, economic, health, technology, tourism and social policy spheres took part in these bottom-up, face to face consultation activities. The stakeholder sessions also identified two driving forces determined as critical for 2050. Critical drivers are those recognised as being important in determining how the future might evolve, but also characterised as having a highly unpredictable future projection in the shaping our future environment. The two most critical drivers formed the axes for the development of the four scenario options.

The driving forces presented during the stakeholder sessions were grouped in the following categories:

- Exogenous drivers, including natural and transboundary conditions, as well as climate change (*this driver recognises background conditions such as Sahara dust, mercury levels in marine water, and changing climatic conditions as external drivers*)
- Population Density and demographic changes (*pertains to the size, structure, and distribution of populations, and spatial or temporal changes in them in response to birth, migration (including work migrants), aging, and death. It also recognises criteria such as education, nationality, religion, and ethnicity, as also influenced by spikes in migration due to foreign political factors*) This driving force is directly tied with the demand for housing, services, jobs, transport and infrastructure. Malta is by far the most densely populated EU country, with a population of 475,701 as of the end of 2017[1].
- Citizen Choices (*reflects public choices as consumers or users, as influenced by education, awareness, aspirations, religion or ethics, political beliefs etc.*)
- Technology and market complements and substitutes (*capturing the ways in which the technology, products, or services available on the market change the environment*)
- Unintended/Unsustainable Policy Effects (*understood as existing policy initiatives to address an issue such as declining agriculture, which may have undesirable spinoff effect on the environment*)

[1] NSO 2019a.

- Economic Growth (*the increase in the amount of goods and services produced, also giving regard to the influencing dynamics of the internet economy, artificial intelligence, and other emerging markets influencing technologies*)
    - Real Estate & Construction (This sector of the economy leads to pressures on land use and natural resources, both because of the construction process, as well as the use of the development itself. In 2018, real estate and construction contributed 4.9% and 3.72% respectively to Malta's economy, and have experienced continuous growth since 2012[2].)
    - Transport & Infrastructure (This driving force was defined as including aspects of land transport, aviation and navigation (i.e. marine transport). Malta's land transport sector is heavily slanted towards private personal mobility, a characteristic which is reflected in the high number of vehicles per capita. At end of 2016, there were 780 vehicles per 1,000 residents.[3] Air and sea transport are also experiencing increasing trends.[4] Environmental impacts of transport include air pollution and congestion.)
    - Tourism (Tourism is key to Malta's economy, accounting for 5.7% of total gross value added generated within Malta's economy in 2015. In 2017, total guest surpassed 1.8 million[5]. This industry is directly associated with accommodation and catering establishments. However, it also has other inter-industry linkages, including the transportation and the manufacturing sector. This sector therefore contributes directly and indirectly to significant environmental impacts, such as including increases in waste disposal and consumption of water and electricity and take-up of land for tourism infrastructure.)
    - Agriculture (Agriculture is dominant in Malta's rural landscape, although its contribution to the economy and employment is minimal. Nevertheless, arable farming and livestock rearing affects the environment in a number of ways: soil, water, waste management, and fragmentation of natural habitats.)
    - Fisheries (Fisheries constitutes a minor contribution to Malta's economy, although the cumulative impact of all industrial, artisanal, commercial, recreational, sport and illegal, unregulated and unreported fisheries together with aquaculture may constitute a significant driving force in changing the marine environment and its ecosystems.)
    - Industry & Energy (This driving force included aspects of the manufacturing industry as well as energy generation. These affect the environment with natural resources, as well as the generation of waste and emissions. The local manufacturing industry includes electronic and optical products, basic pharmaceutical products and aircraft maintenance. As regards energy generation, Malta remains mostly dependant on the importation of fossil fuels and electricity.)
    - Public Sector
    - Other Sectors (incorporating other sectors not already identified e.g. the variants of the service sector)

[2] NSO 2019c.
[3] NSO 2019a.
[4] NSO 2019b.
[5] NSO 2019a.

Synopsis of NSE drivers across stakeholder sessions

Exogenous Drivers

This driver was considered to be of relative high importance for most environmental aspects, with most focus being put on the climate change aspect. It is acknowledged that climate change is an important driver of environmental change at a global level and will require mitigation and adaptation measures in order to minimise our national contribution to climate change and increase national resilience to the threats it poses.

Population Density

Population density emerged as an important driver for all 6 environmental themes discussed, since it is widely acknowledged that Malta's high population density, which is exacerbated by immigration, results in a number of environmental pressures. This driving force is intrinsically linked with Citizen Choice, since environmental change is brought about by the individual demands of citizens being concentrated in a small land area, with repercussions on various themes such as waste management and air quality.

Citizen Choice

Citizen choices were considered to be important for a number of the environmental themes, such as ambient quality and waste management, since these are heavily influenced by citizens' behaviour and consumption patterns. Mobility choices and consumption choices and related waste disposal patterns evolve according to individual personal choices, nevertheless it is widely acknowledged that national government policy enables and facilitates citizens to make more sustainable personal choices.

Technology

Relatively speaking, technology did not emerge as a driving force of high importance. However, it was noted to be relatively unpredictable and it is unknown how future technological innovations and their adoption can influence the environment. Technology was recognised as a tool which can have both positive and negative environmental repercussions depending on the way it is utilised.

Unintended/Unsustainable Policy Effects

The concept of fragmented and sectoral policies came up repeatedly during discussions of this driver. It was widely noted that the lack of a single long-term strategic vision for the country, concerted efforts and appropriate implementation across different government sectors, hinders efficient environmental management that kindles a balanced outlook.

Economic Growth

This emerged as a very important driver, since for the most part economic growth remains coupled with environmental pressures, as elaborated in the below listed drivers which collectively represent economic growth.

Real Estate & Construction

Real estate and construction emerged as being of very high importance, due to the recent increase in development and construction activity. This was identified as having significant consequences on various environmental aspects, especially land use and ambient quality, with a consequential impact on quality of life.

Transport & Infrastructure (Air, Land, Marine)

This driver resulted as being of considerable importance for most environmental themes. Transport means, and the required complementing infrastructure, were recognised as putting pressure on land, air space, or marine environment. Transport is unquestionably the main source of air pollutants, while also exerting significant pressures on land use. Marine transport is a significant pressure for the marine environment.

Tourism

Discussions revealed that tourism is a significant pressure on various environmental aspects, since the influx of people results in increased strain on the environment. It was pointed out that the negative environmental repercussions of tourism may be localised in specific areas which experience a higher tourism volume. The infrastructure required to cater for tourism is also of high significance.

Industry & Energy

Although it was acknowledged that this driver is of high environmental relevance, it was not considered to be of as high importance as other drivers. This is due to the recent shift towards cleaner energy and the fact that large industry is heavily regulated from an environmental perspective. However, it was also highlighted that the cumulative impacts of smaller industries, which are regulated as rigorously as larger industries, is not known.

Agriculture

Agriculture was not considered to be an important driver influencing the environment, mostly because it is a sector that is on the decline and is not a highly significant cause of declining environmental quality. This driver was highlighted as strongly relevant to the quality and quantity of groundwater.

Fisheries

As with agriculture, fisheries was not considered to be a major driver of overall environmental change. However, the sessions noted that the cumulative impact of fisheries and aquaculture on the marine environment and its ecosystems is probably significant, despite being well regulated.

Other sectors (e.g. Services)

This driver was identified as least important in all of the sessions held.

Synopsis of NSE drivers stakeholder environmental topic sessions

Marine Environment

Economic growth emerged as the most important driver affecting the marine environment, which results from various sub-categories of drivers such as shipping and development. Marine transport, both commercial and recreational, was highlighted as a significant driver affecting both the seabed and the water column. The issue of unsustainable fisheries was also discussed.

Environmental Quality

Environmental quality was defined in this session as issues relating to air, noise and light pollution, however most of the discussion focused on air pollution. Population density, transport, and

infrastructure emerged as the most important drivers which affect this environmental thematic area, while agriculture and fisheries emerged as the least important. The discussions also revealed that citizen choices are critical to environmental quality, mostly in relation to mobility choices, although government policy and public entities need to enable positive environmental choices. The session also raised various potential measures and areas for action, again mostly focusing on mobility issues.

Natural capital

Economic growth emerged as the most important driver affecting Malta's natural capital, due to the resulting increased uptake of rural and natural land and increased anthropogenic activity in such areas.

Waste

Real estate and construction were highlighted as an important driver due to the generation of construction and demolition waste, which constitutes Malta's largest waste stream by volume. Population density and citizen choice also emerged as important drivers due to the unsustainable consumption patterns and high rates of generation of domestic waste.

Land

Population density and economic growth emerged as key drivers of high importance for land use, since both contribute to pressures for increased take up of undeveloped land and changes in land use. The discussions highlighted several issues that result from the absence of integrated policy that supports planning policy initiatives.

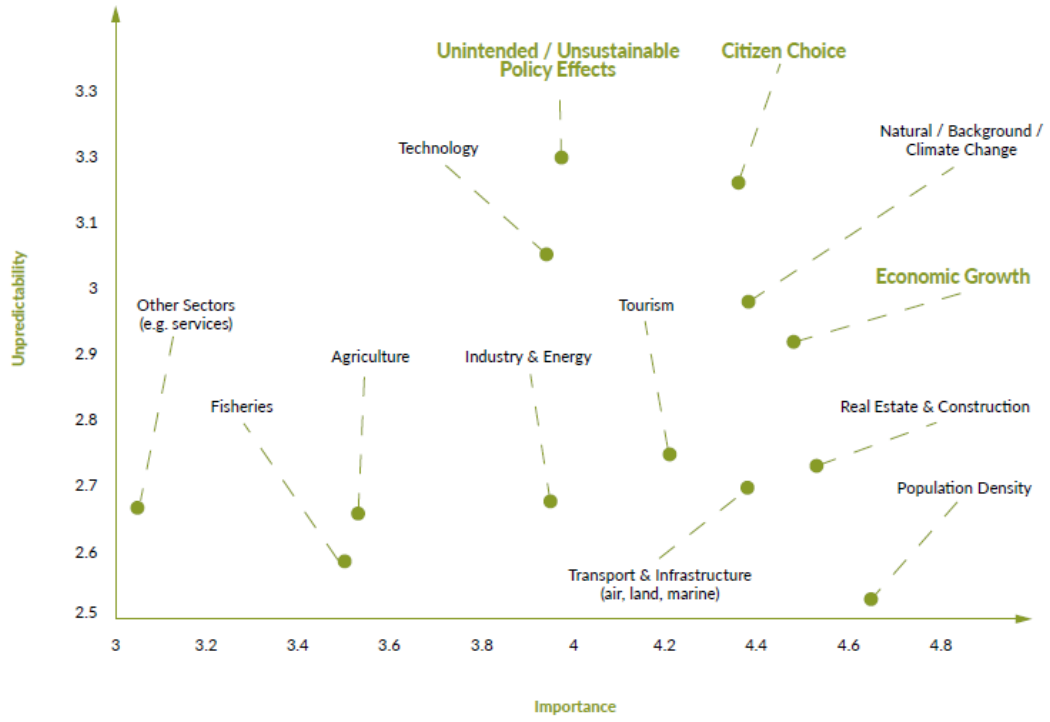
Freshwater

Discussions mostly focused on domestic water consumption which is putting strain on the quantitative aspect of Malta's freshwater resources, therefore population density emerged as the most important driver. Soil sealing due to development emerged as an important issue which hinders aquifer recharge, while the illegal abstraction of groundwater was also highlighted. From a qualitative perspective, agriculture emerged as a key driver affecting groundwater quality in addition to other issues such as contamination from sewage. Discussions also highlighted concerns on future precipitation patterns due to climate change, which may result in increased water scarcity.

Identifying the most critical and important drivers

Following discussions on each of the topics, the stakeholders were also asked to rate all the drivers discussed on a given scale in terms of their importance and unpredictability, at each of the sessions held using real-time voting software. The overall results across all six sessions are shown in Figure 1, where all drivers scored high on importance and unpredictability.

Figure 1: Outcome of the stakeholder consultation sessions



The two most critical drivers were not immediately evident from the resulting graphical results, and a ranking exercise built on these stakeholder submissions leading to the identification of Economic Growth (including Citizen Choices) and Unintended/Unsustainable Policy as the two critical drivers that formed the axes for the scenario building exercise that followed.

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