

**Beyond a Climate Emergency:
Proposals by the
Environmental Task Force.**



The Sustainable Development Goals (SDGs) puzzle is used to promote, celebrate, and invite youths to work on SDGs in their everyday life. The SDGs puzzle takes the individual identities of youth work and unites their work towards Agenda 2030. The following SDGs are the most relevant to this document:



Beyond a Climate Emergency:
Proposals by the Environmental Task Force

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Foreword

Kunsill Nazzjonali Żgħażaġh (KNŻ) is the national representative body for all Maltese youths of ages between 13 and 35. The National Youth Council of Malta strives to be a proactive primary source of information, idea-generation and innovation both in Malta and Gozo. KNŻ, as a political body, is tasked with providing a forum of dialogue for young people on various national and international issues while bridging policymakers and various key actors in Malta's political and social spheres to young people and their organisations.

During a Climate Strike march in March of 2019, KNŻ launched a call for an Environmental Task Force (ETF), a platform that brought together over 50 youth with the aim of working together to propose a concrete and practical way forward in terms of policy relating to the environment. Over the past months, the ETF has deliberated on various proposals, looked through case studies and policies, and consulted with professions as to come up with various solutions. KNŻ would like to thank all the youth that were involved in the endless hours of discussions during this project, which show that Maltese youth truly care about these issues.

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1. Introduction

‘The State shall protect and conserve the environment and its resources for the benefit of the present and future generations and shall take measures to address any form of environmental degradation in Malta, including that of air, water and land, and any sort of pollution problem and to promote, nurture and support the right of action in favour of the environment.’

Constitution of Malta, Art. 9(2)

The duty to safeguard the environment is enshrined in our Constitution. It is indeed one of the core principles that constitute the Maltese Republic. As young citizens, it is our civic responsibility to inform ourselves and discuss the matter both with other youth, as well as other stakeholders.

The topics discussed in this document are not only representatives of the most prominent aspects of the environment but are also reflective of what youth are mostly concerned with. Starting from our complex and fragile ecosystems, and the conundrum that are our transport and waste management systems, to our controversial overdevelopment issues and linear economy.

The United Nations World Commission on Environment and Development has defined environmental sustainability as ‘the ability to meet the needs of the present without compromising the ability of future generations to meet their own’. Throughout this document we not only refer to the various SDGs and their targets related to every section but consider human needs and well-being.

Youth have a vital role to play in all of this as they have the capacity to think critically and ask question through personal experiences that are relevant and valid, as to challenge existing power structures. Young active people have always been some of the biggest change-makers in history. If youth are empowered through knowledge of their rights and equipped with the proper skills, they can truly be leaders in issues such as the environment.

2. The Conservation of Species

The SDGs recognize the important relationship between the economy, society and the environment, through the protection and maintenance of our natural capital. This includes climate regulation, freshwater, biodiversity and all the other benefits that nature provides humanity. For many SDG targets to be achieved, they depend on nature. Most notably, SDG 14 which calls for protected areas for marine biodiversity, and existing policies and treaties that encourage responsible use of ocean resources to combat the adverse effects of overfishing, growing ocean acidification, due to climate change, and worsening coastal eutrophication. With regards to terrestrial ecosystem SDG 15 calls for the protection, restoration and promotion of sustainable use of terrestrial ecosystems, sustainably managed forests, combating desertification, and halting and reversing land degradation and biodiversity loss.

2.1 Regulation of Protected Areas

Protected areas are essential for biodiversity conservation, and nowadays these sites are often the only hope of protecting many threatened and endemic species from extinction. Protected areas safeguard the functioning of various ecosystems which create several goods and ecosystem services. These services are the benefits derived from biodiversity and ecosystems, which involve provisioning, regulating, supporting and cultural services. Some benefits are also economical and include; decrease in soil erosion, pollination, coastal protection, provision of food and purification, and supply of water. Provision of recreational activities through ecosystem services also leads to economic growth through tourism. Ultimately, protected areas represent a commitment to future generations.

Target 11 of the Strategic Plan for Biodiversity 2011-2020, states that by 2020 at least 17% of terrestrial and inland water and 10% of coastal and marine areas are to be conserved through effectively and equitably managed, through ecologically representative and well-connected systems of protected areas. Presently, 28.5% of the land area of the Maltese Islands is covered by one designation or another. 35.5% of Maltese Waters have also been designated as marine protected areas (MPA).

While the efforts to designate this percentage of the islands as protected areas are recognized and appreciated, this is only the first step in true conservation. Designation needs to be coupled with management and enforcement for effective conservation. The regulatory framework requires national authorities to establish conservation measures including site-specific measures, however, these were not established for all sites. While management plans and conservation orders have been set up for all terrestrial Natura 2000 sites¹, none of the marine sites have been afforded management plans as of yet, effectively making them simply ‘paper parks’.

2.1.1 Management and Enforcement.

While percentages of the planet’s biomes’ protected areas can be indicative, the more crucial aspects are the location of these sites and their management². Management and protection of such areas need to reconcile human influence with the preservation of resources of scientific and cultural importance. These also need to be in line with the conservation objectives for the sites. Management plans require maintenance and restoration of biotic and abiotic conditions that are essential for the protection of species, communities or habitats. They would also need to eliminate and prevent the exploitation of the area through anthropogenic activities. The ecological vision for the plans needs to take into consideration both short-term and long-term considerations.

Research on MPAs has shown that the five characteristics that produce the greatest conservation benefits are no-take (fully protected), well-enforced, well-established (≥ 10 y old), large (≥ 100 km²), and isolated areas. These criteria are far from present in the MPAs designated within Maltese waters.³ While large designations may not be feasible for a small island state like Malta, smaller locally managed MPAs have been shown to increase food security and manage data-poor fisheries, if well managed. There is a need for enactment of fully protected areas with very limited human interaction, both for the marine sites and for terrestrial ones. Research shows that sites

¹ Stevens, D. T. (2017). Biodiversity, conservation and management and the role of Natura 2000 in Malta.

² Brooks, T. M., Bakarr, M. I., Boucher, T., Da Fonseca, G. A., Hilton-Taylor, C., Hoekstra, J. M., ... & Rodrigues, A. S. (2004). Coverage provided by the global protected-area system: is it enough?. *BioScience*, 54(12), 1081-1091.

³ Roberts, C. M., O’Leary, B. C., McCauley, D. J., Cury, P. M., Duarte, C. M., Lubchenco, J., ... & Worm, B. (2017). Marine reserves can mitigate and promote adaptation to climate change. *Proceedings of the National Academy of Sciences*, 114(24), 6167-6175.

which are partially protected and enforced can show some biodiversity increases, but benefits are less than those in fully protected areas.

While management plans and conservation orders may be established for the terrestrial sites, there is limited enforcement. Increasing enforcement of conservation measures and monitoring of sites will not only have a positive impact on biological communities but will also have socio-economic advantages through the creation of job opportunities.

2.1.2 Stakeholder and Public Engagement

Discussions for compiling of management plans must include stakeholders coming from a variety of backgrounds, including policy, business, conservation biology and social sciences. Engaging users in the decision-making process leads to support and better cooperation, both with regards to compliance with the proposed rules and monitoring following implementation⁴. Assessments of the economic benefits of protected areas and their management can be useful to show that, in the long-term, the investment costs associated with good management are outweighed by the related benefits⁵. Traditional knowledge of users can be combined with knowledge and data from scientists to enable comprehensive, informed decisions on planning and management.

Progress can only be achieved through extensive research on the ecological, social and economic implications. This should be done by uniting stakeholders to work for the same goals. Important issues to be discussed during planning are long-term funding, training and education. This will help to foster new partnerships and collaborative works in support of biodiversity conservation. Policy change needs to be coupled with educating the public. Members of the public need to be educated on the importance of protected areas, as to encourage an understanding of restrictions of human activity that come with effective management plans.

⁴ Guidetti, P., Grorud-Colvert, K., Giakoumi, S., Gaines, S., Micheli, F., Di Carlo, & Claudet, J. (2016). The Science of Marine Protected Areas (Mediterranean)
⁵ Russi D., Pantzar M., Kettunen M., Gitti G., Mutafoğlu K., Kotulak M. & ten Brink P. (2016). Socio-Economic Benefits of the EU Marine Protected Areas. Report prepared by the Institute for European Environmental Policy (IEEP) for DG Environment

2.1.3 Research and Monitoring

Protected areas need to go through a process of both short- and long-term monitoring and research to see the rate of progress and sustainability. Partnerships between governmental entities, NGOs and research institutions need to be strengthened to undertake targeted interdisciplinary research that improves an understanding of biodiversity in ecological, social and economic aspects, and in line with policy demand⁶. Standards, criteria and indicators should be established beforehand and the assessment process would better ensure comparability if it was streamlined across PAs and over time.⁷ Such research not only benefits the ecosystem itself but included monitoring and mitigating climate change.

Research must not be limited to the state of the protected areas and the biodiversity within them. There must also be systematic approaches to policy learning through ongoing assessment of performance regarding management and enforcement that is self-reflective. This form of monitoring is cost-effective since research can determine appropriate fund allocation between sectors⁸. Protection and monitoring should be viewed as a long-term endeavour. Although some changes can occur rapidly, it may be several years before the full benefits of protected areas become evident since some species may not change noticeably in abundance, body size, biomass, or diversity for some time.

2.1.4 Networks for Connectivity

Networks of smaller, well-connected reserves need to be established for terrestrial sites to prevent subpopulations from becoming extinct and to enable recovery of local populations. Malta also needs to work on collaborating with other Mediterranean countries and international entities to identify marine sites beyond the limits of national jurisdiction that are eligible for the designation of protected areas in accordance with international law. This would aid in the protection of habitat types

6 NBSAP Malta (2018). Recognising the importance of biodiversity - our natural capital - for the benefit of present and future generations. Malta's National Biodiversity Strategy and Action Plan, 1–34. Retrieved from <https://www.cbd.int/doc/world/mt/mt-nbsap-01-en.pdf>

7 Geldmann, J., Coad, L., Barnes, M. D., Craigie, I. D., Woodley, S., Balmford, A., ... & McRae, L. (2018). A global analysis of management capacity and ecological outcomes in terrestrial protected areas. *Conservation Letters*, 11(3), e12434.

8 Lockwood, M. (2010). Good governance for terrestrial protected areas: A framework, principles and performance outcomes. *Journal of environmental management*, 91(3), 754-766.

and migratory pathways of ecologically important species. Individually, each MPA can provide some conservation but collectively, a network can create significantly greater benefits, if it is well-designed. This is especially important for those MPAs designated for protection of large megafaunal species such as sea turtles and dolphins. These are migratory species which travel great distances, so conservation of such species must be an international approach.

2.2 Fisheries

From the Tunnara to modern day trawling, fisheries have always been a big part of Maltese culture and an important natural resource. Throughout the decades, the demand for fisheries products has increased exponentially, and with it, so did the anthropogenic impact we have on our stocks. A study showed that over 90% of the Mediterranean fish stocks assessed are overexploited, meaning that they are being fished beyond their maximum sustainable yield, decreasing the fish stock populations throughout the years. In the past 50 years, 41% of the Mediterranean's marine mammals and 34% of the total fish population is estimated to have been lost⁹. If this critical situation is not addressed and dealt with soon our key fish stocks can collapse, and with it, the Mediterranean fisheries. An industry which generates about three billion euros per year¹⁰.

2.2.1 Black market fisheries

It is an unstudied yet known fact that a lot of fish caught is not legally registered. This is problematic for a multitude of reasons, mainly;

- a. It creates a gap in local data. If the fish isn't registered, no one can be sure about the true fishing pressure we exert on our fish stocks.
- b. It may be that the black-market fisheries are selling protected species and juveniles.

⁹ European Commission. (2017). Saving our heritage, our future: The worrying state of Mediterranean fish stocks. Retrieved from <https://ec.europa.eu/jrc/en/news/saving-our-heritage-worrying-state-mediterranean-fish-stocks>

¹⁰ Giuseppe di Carlo. (2017). Reviving the Mediterranean Sea and Fisheries: dream or reality? WWF. Retrieved from <https://medium.com/wwftogetherpossible/reviving-the-mediterranean-sea-and-fisheries-dream-or-reality-1cb90d097a69>

Restaurants, supermarkets and local markets buying seafood should be able to verify that the products are registered, legally caught fish. Restaurants should have documents that can be viewed by the customers which verify that their food sources are reliable. Ecolabels should be used when selling fisheries products in supermarkets, fish shops and at the local fish market. These places should also be regularly checked by fisheries protection officers and anyone who fails to comply must be fined. It is illegal for any vessels other than MFA (full-time) and MFB (part-time) vessels to marketize their catch¹¹, and yet it is a known fact that MFC (commercial) vessels sell their catches illegally. Thus, MFC vessels need to be monitored to ensure that this is stopped. MFC vessels caught selling their catch should be fined.

2.2.2 Mislabelling

Mislabelling landed catches is a global problem. In 2016, a major study that assessed over 200 published studies on fish fraud stated that on average, 20% of all fish was mislabelled¹². Mislabelling fish usually occurs when it is difficult to decipher between different species due to morphological similarities. It can also be a result of discrepancy. Mislabelling catches can lead to false data, thus making it increasingly difficult to monitor the fishing industry and the species caught themselves, potentially putting them at risk.

We propose that only qualified personnel are employed or provide better training to anyone employed to label landed catches. There should be funding for research on local fisheries that verify that current identification field guides are reliable and effective through the use of morphological and genetic testing.

2.2.3 Better data assessment and use

European funding enables Maltese fisheries to monitor their main fish stocks, however, the data obtained from these monitoring studies is not being utilised as well as it can be. Such data enables us to understand how and where Maltese fish stocks are thriving. This information should be used to designate specific fishing sites to avoid

¹¹ Fisheries Registration Office. (2019). Fishing Vessel Register. Retrieved from <https://agriculture.gov.mt/en/fisheries/Pages/fishingVesselRegister.aspx>

¹²Oceana. (2016). Deceptive Dishes: Seafood swaps found worldwide. Executive report. Retrieved from: https://usa.oceana.org/sites/default/files/global_fraud_report_final_low-res.pdf

fishing in areas which have high densities of juveniles and/or gestating females, reduce fishing pressure on species which are being overexploited and increase fishing pressure on species which are being under-exploited. We propose that authorities work with local NGOs for data collection and analysis and employ people to utilise data and suggest legislations according to the outcomes of the studies.

In conclusion, the fisheries industry needs our protection. It is an industry that is rich in Maltese culture and tradition, one which employs countless people and an industry which requires an equilibrium between man and nature, a balance that is currently under siege. Protecting our natural resources will ultimately benefit ourselves. Not only would these proposals create more jobs for qualified people, but it would ensure the livelihood of our fish stocks, so that future generations benefit from them as we already have.

2.3 Conservation, Management, and Monitoring of Keystone Species

2.3.1 The Importance of the Human- *Posidonia oceanica* Dynamics, and its Awareness.

Posidonia oceanica is a seagrass which inhabits the Mediterranean Sea, it covers between 25,000 and 50,000 km² of the coastal areas, corresponding to 25% of the sea bottom at a depth of between 0 and 40 m. Most areas which it inhabits are listed as marine protected areas. This seagrass is known as a keystone species as it plays a vital role in the maintenance of the structure of the marine and terrestrial ecosystem and poses as a pivotal predictor for our social, environmental and economic wellness. More than half of the oxygen we breathe is produced from the sea. The primary producer of oxygen in coastal waters is the *P.oceanica*, in fact, it produces 14 to 20 litres of oxygen per square metre every day ¹³.

It acts as a natural swell and wave breaker, aids against erosion and induces the deposits of sedimentary particles. Moreover, it can also be regarded as an indicator species as it specifically thrives in very clean waters and provides various marine

¹³ Pujol, L.G., Orfila, A., Álvarez-Ellacuría, A., Terrados, J. & Joaquin Tintoré (2013) *Posidonia oceanica* beach-cast litter in Mediterranean beaches: a coastal videomonitoring study. *Journal of Coastal Research, International Coastal Symposium 2*: 1768 – 1773. DOI: <https://doi.org/10.2112/SI65-299.1>

species with specific microhabitats that are vital for their survival. It acts as a carbon sink by absorbing CO₂ diffused into water molecules from the air, thereby mitigating the effects of climate change. Its aesthetic beauty is alluring, creating pristine ecosystems which attract scuba divers, snorkelers and common bathers.

The population of *Posidonia oceanica* is in grave danger of being degrading due to high levels of anthropogenic pressures and lack of enforcement. Local examples of anthropogenic pressures leading to the decimation of this seagrass include;

- a. The anchorage of pleasure boats in Mellieha Bay are destroying the seabed of this protected species.¹⁴
- b. The population of *Posidonia oceanica* in Salini is under pressure from agricultural runoff which causes eutrophication, and pesticide runoff which contaminates the water.
- c. The rapid range expansion of the invasive *Caulerpa taxifolia* var. *distichophylla* is competing with and possibly outcompeting the *P.oceanica*. St Paul's Bay contains the largest sea bass and sea bream fish farms in the Maltese Islands. Initially, the very young fish are reared inside Mistra Bay as the young cannot withstand water currents. Eventually, the grown juveniles are then transferred to St.Paul's Bay, where they mature and transferred to the deep waters of Mellieha Bay. The incorporation of clupeoid fish in fish farms has generated a source of slime that is polluting the sea. Moreover, the droppings of fish are interfering with *Posidonia oceanica* meadows, this can be known from the plankton and invertebrate samples collected from the meadows.
- d. St George's Bay is a blue flag beach. A blue flag beach is inspected twice a week for litter and pollution, water samples are taken for bacteriological analyses. There is a huge emphasis on amenity, water quality, environmental management, safety and service, providing the bather with a place that is clean and safe to swim¹⁵. High nutrient levels have been recorded in this water because of the sewage pump present close to the beach and sometimes there is an overflow of sewage when electricity stops which can indirectly affect the

¹⁴ Borg, J. A., Attrill, M. J., Rowden, A. A., Schembri, P. J., & Jones, M. B. (2005). Architectural characteristics of two bed types of the seagrass *Posidonia oceanica* over different spatial scales. *Estuarine, Coastal and Shelf Science*, 62(4), 667-678.

¹⁵Blue Flag | Foundation for Environmental Education – Foundation for Environmental Education. (2019), from <https://www.fee.global/blue-flag>

population of *P.oceanica* since an overload of nutrients at the surface can block the sunlight required by the seagrasses.

- e. Moreover, a skyline approach is being considered in Paceville were a number of skylines have been proposed for development¹⁶. In fact, the proposed project of Hard Rock Hotel will shade a huge proportion of the water of St George's Bay, thus the *P.oceanica* will not receive enough sunlight and consequently, this will interfere with growth and survival of the seagrass.

In order to combat these anthropogenic effects, we must create a medium were enthusiasts, students, specialists can disseminate their information about the importance of the *P.oceanica*. One must not forget to highlight promote the importance of various projects that have already occurred on the conservation and research of the *P.oceanica*: Life Blue Natura, Blue4Good Bleu and Life Baħar project. The general public could also get involved through platforms engaging in citizen science.

There should be more investment in research on the human-environment-*P.oceanica* dynamics, its importance and functions that would be disseminated through seminars, events which show videos and documentaries on this specific species. There should be a well surveyed and documented site plan which marks the occurrence of the *P.oceanica* meadows in Mellieha Bay and other bathing sites. From this well documented ecological plan, ecologists can create buffer zones which directly prohibit the anchorage of pleasure boats in that specific area. The boat site can be relocated in a less ecological sensitive area.

Marine protected areas alone are not sufficient to guarantee the protection of *P. oceanica* meadows¹⁷. Therefore, there needs to be the creation of a wildlife enforcement unit which patrols the marine protected areas for any illegal trawling activities which might damage the *P.oceanica* seabeds. A base watch unit can be stationed in each bathing site to document and enforce any illegal or suspicious activity

16 NBSAP Malta. (2018). Recognising the importance of biodiversity - our natural capital - for the benefit of present and future generations. Malta's National Biodiversity Strategy and Action Plan, 1–34. Retrieved from <https://www.cbd.int/doc/world/mt/mt-nbsap-01-en.pdf>

17 Montefalcone., M., Albertelli., G., Morri., C., Parravicini ., V., & Bianchi., C.N (2009) Legal protection is not enough: *Posidonia oceanica* meadows in marine protected areas are not healthier than those in unprotected areas of the northwest Mediterranean Sea. Marine pollution bulletin 58(4): 515–519. DOI: <https://doi.org/10.1016/j.marpolbul.2008.12.001>

which may harm the ecosystem of the site. In doing so there is the creation of jobs and the wildlife enforcement unit can work hand in hand with several NGOs which already perform similar tasks such as Nature Trust. The introduction of solar panel CCTVs in areas of dumping activity proved to be rather successful in Inwadar National Park, and the same should occur here.

Agricultural site inspection and fertilizer/pesticide logs can help regularise the uncontrolled use of pesticides. Fines are to be given if the stock of the fertiliser/pesticide exceeds the required threshold and if the logs are not kept in check.

Caulerpa taxifolia var. *distichophylla* can be eradicated when in close vicinity of the *P.oceanica* in order to allow the *P.oceanica* colonise the area. However, when not in close vicinity of the *P.oceanica*, the invasive species are controlled not eradicated as not to damage other species which fish have adapted to it. The collected dead matter can be used to make biofuel, recycled material or fibre. Environmental risk assessments need to safeguard the three pillars of sustainability: Social, Economic and Environment. Such environmental risk assessment needs to respect the vulnerability of the sensitive ecosystem of the *P.oceanica*.

It is a known fact that aquaculture inflicts certain damaging effects on the *P.oceanica* meadows. However, aquaculture still has to be taken into consideration as it is overcompensating in reared fish stocks as the local marine biodiversity is in a poor state. The biology of sea bass and seabream is fragile, and these fish farms need to be close to the shore for shelter, irrespective of the slime that they produce. Locally, we ought to rely on aquaculture to keep the fish industry alive and indirectly relieving the pressures on the wild fish stock and seagrass meadows.

2.3.2 The Importance of Human- *Apis mellifera ruttneri* Dynamics and its Vulnerability.

The *A.melifera ruttneri* is an endemic subspecies of the western honey bee, it is very well adapted to the Maltese dry summer and cool winter. So much so, that it produces well renowned wild thyme honey and an array of other products; such as beeswax, bee bread, propolis, bee venom and royal jelly. It is a very good pollinator, aiding in the cross-fertilisation and propagation of wild tree/plant and cultivated

crops. It plays a vital role in the maintenance of the structure of most of the terrestrial ecosystem and poses as a pivotal predictor for our social, environmental and economic wellness.

The habitat of the *A.melifera ruttneri* is dying at an unprecedented rate due to the extirpation of agricultural land and open spaces to accommodate the ever-growing unsustainable development. The introduction of invasive pests also poses some problems. Such examples are listed below:

- a. Less foraging habitat for the honeybees as most of the land is urbanised or is barren agricultural land. Less space to accommodate honeybee hives over the years.
- b. Most of the water streams in the Maltese islands have been dried up due to borehole water extraction or direct water extraction. This proves to be very difficult for the honeybees to live in the wild and survive. Thus, most of the cultivated honeybees need to be given water and sugar during the summer period.
- c. The introduction of *Varroa destructor* in 1992. Honeybee keepers tried mixing the native breed with the Italian honeybee to create a strain which is much more resistant to the mite. It worked for a short period of time, however, this might still persist and cause wing damage which may shorten the average lifespan of a honeybee and may also transmit viral infections. Further hybridization of the native honeybee can put its gene pool in the risk of extinction.
- d. The introduction of the carnivorous oriental hornet which can feed on honeybees. As well as, the potential introduction of more invasive pests which may harm the apiculture industry and its ecological significance due to lack of security and enforcement when it comes to the importation and exportation of alien or invasive species.

Workshops and promoting awareness on container gardens, rooftop gardens, hydroponics and aquaponics, we can re-flourish the urban environment and provide feeding grounds for honeybees. Such methods can be practised in the front porch, garden, empty rooftop and even on vertical surfaces. There should be enforcement of sites which practise illegal borehole pumping and direct water extraction. This can be

done via the creation of an enforcement unit which specifically deals with such situations. Fines can be given to mitigate such a problem. We must also create awareness on the cultural, economic and environmental significance of the Maltese honeybees. The public should be more informed that honeybees are docile and create a distinction between dangerous wasps and honeybees.

There should be more research investments in this situation as well. Pilot studies should be conducted to test the feasibility of the main studies for the rehabilitation of barren land in order to reintroduce local plant and tree species which co-existed with the honeybees for many years. A site plan for various areas to accommodate *Eucalyptus* species as it is one of the few trees which flowers in summer and provides nectar for the honeybees.

There needs to be more communication with importing companies, Malta international airport and Malta customs to explain the problems and repercussions of alien invasive species. Fines are already given if caught importing or exporting alien species, the main problem is enforcement and knowledge. Hold discussions in local councils and schools to promote the apiculture industry. In so doing promoting the growth of the honeybee population, the growth of honeybee products and the propagation of plants and trees. Create an incentive program where farmers who have agricultural land can be given a free course on beekeeping.

2.4 Prevention of Illegal Trade & Management of Alien Species.

Alien species are animals, plants, pathogens and other organisms introduced into ecosystems that do not occur in their natural range. When these species start to thrive in these habitats due to ideal conditions, they can become invasive, often causing severe negative consequences to the endemic species. This can mean that the naturally occurring processes of the ecosystem start to alter negatively. From climate change rising seas temperatures encouraging migration of non-endemic species to people physically importing species or species coming here by accident with imported goods, there are a lot of ways invasive species have entered the Maltese Islands.

One of the biggest hurdles when dealing with this situation is that a lot of damage has already been done, and invasive species can be found in every corner of our natural environment. To tackle the situation, one must ask what can be done to reduce and

prevent further invasion of these species, and how to deal with what is already here. Unfortunately, efforts to mitigate climate change and lower sea level temperatures will not occur overnight, however, proposals and policies such as those found in this document, coupled with cooperation between countries will lead to the lowering of temperatures. As previously mentioned in this chapter there needs to be more enforcement and more communication with importing companies, Malta International airport and customs to explain the problems and repercussion of alien species. Many shops market and promote the sale of exotic species yet little is done to monitor these. There a huge lack of information that is available to the public, one can only hope that this information exists for the responsible entities but either way there needs to be initiative take to gather this information.

We propose that we start using these invasive species to our advantage to reduce the pressure put on the traditional species caught. We need to adapt to these changing circumstances by, for example, fishing edible invasive species and more common species. Eradicating invasive species is not going to be as easy as one may think, more likely than not, most of these species are here to stay for a long time.

Educating the public is vital to our ecosystem's prosperity. Educating children from a young age on the environment and the dangers that threaten it, such as climate change, should be a priority in our educational system. With regards, to older generations, there needs to be more initiative on a local level. People need to be encouraged to engage more in hands-on activities and feel obliged to be part of this discussion. This is the only way we can start culturing a society that is willing to change and better our environment by understanding its importance.

3 Clean Energy and Transport

The 2030 Agenda states that sustainable transport systems in conjunction with universal access to affordable, reliable and modern energy services, along with other policies that increase productive capacities, would build strong economic foundations for all countries¹⁸. There are five targets that are directly related to transport and seven other targets that are indirectly related. On the other hand, SDG 7 is dedicated completely to affordable and clean energy, with five targets and six indicators that specify SDG 7.

3.1 Solar Power

Renewable energy does not simply represent a cleaner means of deriving electrical energy, nor is it simply a potential new economic sector on which the country may thrive. Renewable energy is an opportunity for the nation to dilute its power generation throughout the entire country, as opposed to using that produced by the centralised power stations. Dilution and diversification are beneficial everywhere and for many reasons, but more so in the Maltese islands, with energy security being one of the top five strengthening aims for Europe in the upcoming decade¹⁹.

One of the most underestimated natural resources the Maltese Islands has is the Sun. Having such considerable exposure to the solar elements, we have the potential to transcend the norm of using the sun as a mere tourist attraction and initiate a process whereby renewables become the powerhouse of our economy. Indeed, it is the understanding of the economics of renewables that can truly lead us to effectively make the transition from fossil fuels, not simply political will. That said, economics alone cannot promote active change within a society. Our attitude towards energy and all it encapsulates must change towards one that is proactive towards cleaner sources, one where carbon neutrality is sought after rather than inched towards due to naught save compulsory regulations.

18 Ferri, N. (2010). United nations general assembly. *International Journal of Marine and Coastal Law*, 25(2), 271–287. <https://doi.org/10.1163/157180910X12665776638740>

19 EU Solar Market Growth -. (2019), from <https://www.solarpowereurope.org/eu-solar-market-grows-36-in-2018/>

3.1.1 Carbon Neutral Buildings

The first and probably one of the most widely discussed proposal is for government buildings and public property to be carbon neutral, which can be achieved through the use of solar panels. The rationale behind this is both for the numerical value of energy produced by renewables, and for the adoption of principle in which we become conscious of the energy demands of our developments, and factor them in, ensuring carbon neutrality amongst an ever-growing amount of consumers throughout the country.

In order to add to this principle though, a proposal to not only strengthen incentives for home and business owners to invest in renewable energy sources is being added, but to ensure that they sustain a high level of energy efficiency and limit unneeded usage. This is to also encourage people to reduce their consumption of energy and to make their usage as efficient as possible.

Proceeding towards domestic use of solar power, more effort is being done to encourage people to install photovoltaic panels on their roofs or buy into community schemes set out by the government. Yet this effort, along with the countries' overall renewables share, has been hampered by regulations that contribute negatively to the efficiency of the individual cells. Policies such as that found in the 'Development Control and Design Policy' (P48) only allow panels on inclined roofs to be installed at the optimal angle of 30°²⁰. Whereas flat roofs (naturally making up the grand majority of roofs on the island) are restricted by limitations such as having half the optimal angle, significantly reducing the efficiency of energy production.

Another proposal is for the incentivisation of widespread installing of energy-efficient glazing in windows. The benefits of energy-efficient windows go far beyond that of merely reducing the usage of electricity for temperature control; they include leveling the air composition throughout the specific area, be it with regards to dry areas, condensation buildup, humidity or any other inconsistent area within the building. In addition to this, the usage of these types of windows insulates homes

²⁰ Malta Environment and Planning Authority. (2015). Development Control Design Policy : Guidance and Standards 2015.

against external noise more effectively. This is very significant, especially in a country such as our own, where levels of noise pollution are constantly at an alarmingly high point, even if one were to carry out tests in some of the quietest places on the island.

The resulting reduction in need for artificial ‘climate control’ throughout ones’ home, translates into less energy being used for the same purpose, which apart from reducing the demand on the national grid, also means that the people who had invested into that system are now either spending considerably less than they used to for bills, or maybe are even able to sell more of the energy they produce should they be the owners of renewable energy generators^{21,22}.

Having mentioned several proposals relating to solar energy and its potential to be one of, if not Malta’s largest producer of renewable energy even by the time we reach halfway through the 21st century, one must never forget to mention potential plans for re-powering the nations current sources of renewable energy. Studies must be undertaken in order to gain knowledge as to when and how the current sources of renewable energy will cease to operate, so that they may be adequately replaced once they do.

3.2 Wind Power

In major part due to the much larger popularity of solar power, wind power is often forgotten as a potential alternative energy source to our islands’ energy needs. But one must not forget, that wind power is in fact derivative of nothing else but solar energy itself. The basic physics behind it is that wind is caused by the uneven heating of the atmosphere by the sun, variations in the earth's surface, and rotation of the earth²³.

Wind farms were one of the most commonly mentioned proposals throughout discussions with regards to clean energy as a whole. Arguably the best research to date analysing such a proposal in terms of the Maltese Islands would be ‘The Potential and

²¹ Energy Saving Trust. (2019). Energy efficient windows, from <https://www.energysavingtrust.org.uk/home-energy-efficiency/energy-efficient-windows>

²² Eurostat. (2019). Energy statistics - an overview - Statistics Explained, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Primary_energy_production

²³ Wind Europe. (2019). Wind energy in Europe in 2018 | WindEurope, from <https://windeurope.org/about-wind/statistics/european/wind-energy-in-europe-in-2018/>

Constraints of Wind Farm Development at Nearshore Sites in the Maltese Islands'²⁴. This report shows how we can truly work towards a reality where wind energy plays an important role in Malta's energy production sector. Yet, even this report is outdated, having been published a decade ago based on data gathered as far as a quarter of a century ago. Nowadays, many new developments which were only mere predictions a decade ago will make for a substantially different study. Examples of new technologies are deep water wind farms and floating turbines. A primary proposal would be for up to date research to be called for.

3.2.1 Energy Source Transformation

It is necessary that we not only work on 'greenifying' our energy supply but also on diversifying it. Through diversification of the energy sector, the country should aim to achieve ambitious goals such as those outlined by the 'Clean Energy for all Europeans' package. These aim at spearheading five main approaches towards the energy source transformation²⁵:

- a. Putting energy efficiency as a top priority -This includes setting heightened targets of 32.5% renewables energy share by the year 2030 through the not only higher generation of energy from renewable sources, but harnessing the power of modern design and technology to make our buildings both smarter and greener²⁶.
- b. Increased renewables – Needless to say, this highlights a renewed focus on states working to foster public and private investment. This means that national markets can start to grow and competitiveness increases. This process then leads to wider accessibility and better technology used in renewables installations.
- c. Stronger Energy Union – Each member state is to draft National Energy and Climate Plans (NECPs) for 2021-2030. With the governance Regulation (EU(2018)1999) in force since December 2018, all Member States submitted their

²⁴ Farrugia, R., Deidun, A., Debono, G., Mallia, E., & Sant, T. (2010). The potential and constraints of wind farm development at nearshore sites in the Maltese Islands. *Wind Engineering*, 34(1), 51–64. <https://doi.org/10.1260/0309-524X.34.1.51>

²⁵European Commission. (2019). Clean energy for all Europeans package completed: good for consumers, good for growth and jobs, and good for the planet, from https://ec.europa.eu/info/news/clean-energy-all-europeans-package-completed-good-consumers-good-growth-and-jobs-and-good-planet-2019-may-22_en

²⁶ Energy statistics - an overview - Statistics Explained. (2019). Retrieved 26 November 2019, from https://ec.europa.eu/eurostat/statistics-explained/index.php?title=Energy_statistics_-_an_overview#Primary_energy_production

draft NECPs by early 2019. This leads us to believe that the Union is moving in more ways than one towards the completion of the WindEurope Central Scenario, which proves that a 2030 governance structure is created, with reporting mechanisms on member states' progress, along with several cooperative mechanisms to be established. It is on these grounds that an effort to work towards the rest of WindEurope's Central Scenario goals is being proposed²⁷.

- d. Integration & Diversification – Malta should aim to continue diversifying its own sources of energy, in line with the larger European strategy. This not only increases energy security, but also reduces dependence on energy imports, further decarbonises the economy, and also drives jobs and economic growth. In addition to this, we should strengthen our efforts to achieve a fully integrated European internal energy market and to be fully equipped for such a future reality. This can be achieved through investment in infrastructure and addressing of several regulatory barriers which inadvertently hinder such progress.
- e. Research – Finally, we should never forget the importance of innovation and study in the energy sector. As opposed to relying on others developing technologies for us to eventually use, Malta should look towards heavily aiding research projects, with the aim of supporting discoveries in clean technologies. Research is humanities' vehicle towards progress, only by investing in our nation's minds can we enable the drive towards the competitive energy transition our nation desires. Studies can be carried out on how to make the best use of the upcoming Innovation Fund, created through the EU Emissions Trading System and building upon NER300 so that more projects can be undertaken in order to put our concepts into action. It is important to note that apart from this, there are currently 82 European subsidies and calls for proposals available for energy²⁸.

3.3 Transport

3.3.1 Pedestrians and Cyclists:

²⁷ Building the energy union - Energy European Commission. (2019), from <https://ec.europa.eu/energy/en/topics/energy-strategy-and-energy-union/building-energy-union>

²⁸ Sant, T. (2016). Malta's prime coastal location Development Framework. Retrieved from https://www.um.edu.mt/__data/assets/pdf_file/0008/290546/KDo1TSXOffshoreWindEnergy.pdf

Transport is mentioned directly in five targets on road safety (Target 3.6); energy efficiency (Target 7.3), sustainable infrastructure (Target 9.1), urban access (Target 11.2), and fossil fuel subsidies (Target 12.c). This shows us that sustainable transport influences the achievement of several goals and that conversations on the management of transport systems should be taken more seriously.

As a country we have been prioritizing vehicles above anything else, often excluding conversations on pedestrianisation and other modes of travelling that cause the least congestion and contribute the least carbon emissions. Although we acknowledge that these modes of travelling might not always be appropriate for every situation, we must question if people have resorted to relying solely on vehicles, with no intention of resorting to any other mode, due to the lack of accessibility and infrastructure that has cultivated this culture.

A radical change in infrastructure to include only pavements and bicycle lanes is surely unattainable and not feasible, however, if we start incorporating these into our infrastructure from now, we would benefit substantially in the long run. Infrastructure projects such as parking areas and car favouring schemes, such as flyovers and the widening of roads are not expensive but have a negative impact on both our environment and public health. Case Studies have shown that incentives favouring cycling have benefited the economy, environment, and public health²⁹.

3.3.2 Public Transport:

To say that the subject of Public Transport has been contentious for years is an understatement. However, we cannot ignore the fact that after so many different companies, strategies and national discussions, our public transport is still not adequate for our island. If we ever want to reduce the number of cars on our streets, we need to create a public transport system that people want to use, which will only be determined by its efficiency, as well as moving away from infrastructure built solely for cars.

²⁹ Walljasper, B. J. (2012). Bicycling Means Better Business. 10–13.

It is safe to say that the most obvious solution is to review and create better routes, making buses more accessible to everyone. This needs to be done in conjunction with an increase in the number of buses. Most people in Malta choose to use their own car for their daily commute, yet any bus user will tell you that most buses, especially to certain areas in Malta, are pretty much constantly full. These two issues together give a clear indication of why people are reluctant to make use of public transport, and unless these issues are resolved no amount of free WiFi will encourage people to use them. In recent years, improvements have been made to promote the use of public transport, such as the schemes providing free public transport to youths and students. As it is, our public transport system is more catered towards tourists than it is to resolving traffic issues and creating more sustainable transport.

If we truly wish to start investing in sustainable transport, we need to investigate alternatives to our bus system. Be it an underground metro system or a tram if we would like to solve our traffic problems now is the time to start investing time, energy and money into finding the best alternative to the dated bus system and making it happen in order to see the fruit of this labour during our lifetime.

A short survey was conducted by this subcommittee through social media to get an indication of people's opinions and views on these issues. 74.4% of people said that they would indeed use public transport over their own cars if it improved significantly in its efficiency.

3.3.3 Reducing the number of cars

Malta was one of the very few countries in the EU, to record an increase in carbon emissions last year. As a country, we registered an increase of 6.7%, while the average of the EU was a decrease of 2.5%. In 2018, the NSO estimated that on average 45 cars were added to the Maltese roads every day³⁰. Although a metro system or a tram could be great alternatives to our public transport system and would potentially decrease the number of cars significantly, these are long term projects and unfortunately, some issues need to be fixed as soon as possible.

³⁰NSO. (2019). Regional Statistics Malta. Retrieved from [https://nso.gov.mt/en/publicatons/Publications_by_Unit/Documents/o2_Regional_Statistics_\(Gozo_Office\)/Regional_Statistics_MALTA_2019_Edition.pdf](https://nso.gov.mt/en/publicatons/Publications_by_Unit/Documents/o2_Regional_Statistics_(Gozo_Office)/Regional_Statistics_MALTA_2019_Edition.pdf)

The European Environmental Agency has proposed financial incentives and taxes be put in place to encourage consumers to buy cars with lower carbon dioxide emissions and other air pollutants such as nitrogen oxide and particulate matter³¹. This conversation surrounds electric vehicles which have been speculated to be not as green as one would think due to their manufacturing process. Even if so, electric vehicles are still a better alternative, especially in a country where there are many old cars contributing even more to carbon emissions. However, our aim should not just be in changing our cars but reducing the number of cars on our roads. A recent initiative provided free transport for school children, which impacted the number of cars during rush hour. A similar initiative would be to incentivise a shuttle system, for people who work in big companies with many people driving to the same building.

To determine whether such an implementation is viable, a survey was conducted aimed at people who are employed in one of the following industries; Restaurants and Hotels, Office Buildings, STEM Sector, and Shops and Supermarkets. Figure 2 shows that the most commonly used mode of transport is, as expected, by car, at 60.5% followed by Public Transport at 27.9%. Even though the majority use their car, figure 3 shows that 53.5% claim that they never carpool to work, when offered with the possibility of being provided free transport by their workplace, 74.4%, say that they would be willing to make use of this initiative.

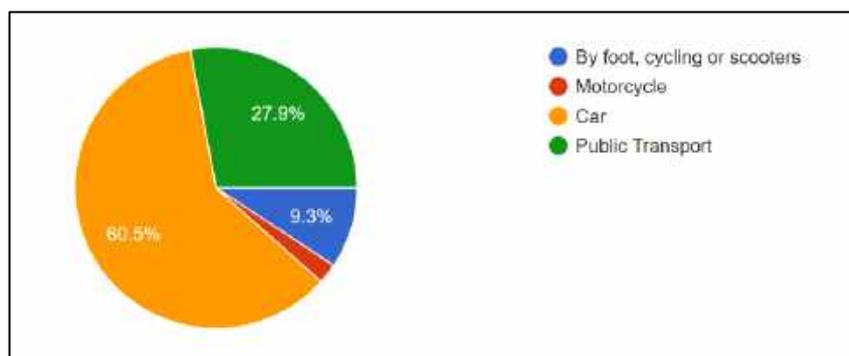


Figure 1: Pie Chart showing the mode of transport used most often by respondents.

³¹ European Environmental Agency. (2018). Fiscal instruments favouring electric over conventional cars are greener. 1–7.

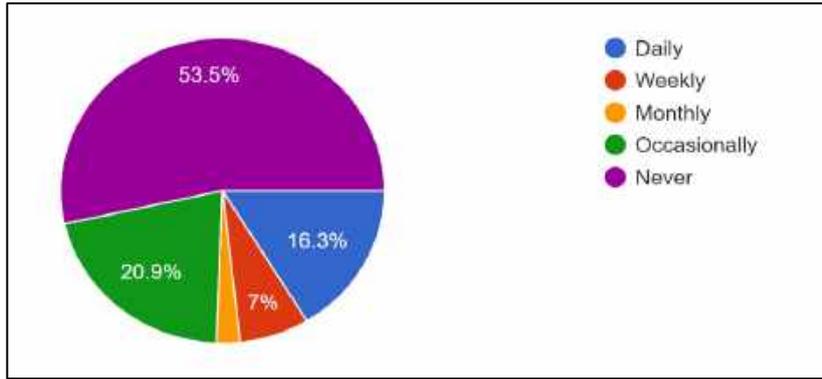


Figure 2: Pie chart showing how often respondents make use of carpooling.

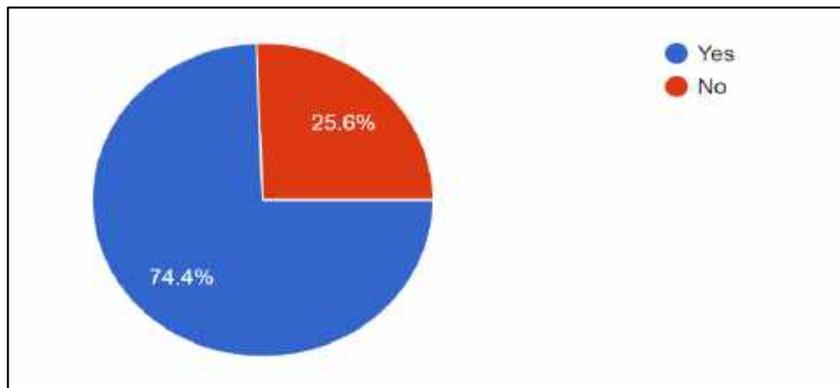


Figure 3: Percentages of whether people would be willing to use the transport provided.

4 Waste Management

The SDGs cannot be met unless waste management is a priority. Failing economic models treat resources as if they are infinite and consumption patterns favors the disposable, which is why SDG 12 calls for responsible consumption and production. However, waste concerns many more SDGs. Plastic has been ingrained into every aspect of our lives. What's going to happen now that this valuable commodity had been proven to be detrimental to our environment, therefore, life under water and life on land, SDG 14 and 15 respectively, can only be sustainable when waste is managed properly.

4.1 Waste Separation

Waste separation is defined as sorting out unneeded items according to the material they are made up of, i.e. at the source. In 2002, Bring-in Sites were introduced in Malta and Gozo by WasteServ³² to segregate clean items made up of plastics, paper, glass and metal. On the 31st of October 2018, major changes to the way waste are separated in Malta and Gozo were introduced. Five new containers were launched in order to make waste separation in households easier: organic waste, mixed waste, sanitary waste, glass and mixed recyclables.

4.1.1 National Waste Management Plan

When we are talking about waste management the first conversation we should be having is not on recycling but rather reducing our waste. Not enough awareness is available on the deterring effects our waste is causing due to an unprecedented consumer appetite that is undermining natural systems. There should be more education and incentives put in place to combat this by encouraging reusable products, and not simply make people comfortable with just recycling. With that being said, our recycling measures also need to be sufficient. As mentioned above, waste is separated at source, however, the efficiency of this system may be somewhat questionable. People are still inquiring about what happens when waste is collected; how much of it is recycled or whether it is all mixed together making waste separation

³² WasteServ Malta - Bring-In Sites. (2019), from <https://www.wasteservmalta.com/bringin>

counterproductive. The Waste Management Plan 2014-2020³³ created several targets to be reached in the coming years and proposed several initiatives to make these targets accessible. Although great strides have been made with the introduction of the new bins, waste separation in Malta has a long way to go. If we want to culture a society that takes responsibility for their waste, to start with, further separation of the mixed recyclables plastics, paper and metal, should be practised.

4.1.2 Governmental Institutions and Authorities

These entities earn direct government financing, so waste reduction and separation should be easier to implement. These buildings should serve as an example and be the driving force that drives down the costs for greener products. Recycling bins should be accessible as needed to make waste separation as efficient as possible. Government institution, like any other companies, use a lot of supplies, which is why there needs to be actual research done on how these buildings can make use of more recycled and reusable material, paired with actual monitoring and enforcement. Apart from that, in today's digital world, many things do not need to be physical anymore, reducing the amount of paper and supplies used would set an example as well as a strategy that can be copied by businesses.

4.1.3 Post- Secondary Schools

In primary and secondary school, the subject of protecting the environment and reducing our waste is drilled into our heads. We are thought to not let the water running, reuse paper, and to separate recycled material from general waste. However, as soon as we reach post-secondary and tertiary level education, the subject seems to descend in the list of priorities. In 2019 waste separation in University and in other post-secondary buildings is still almost non-existent. These are buildings that see thousands of people every day for several hours so one must imagine the sheer amount of waste that is generated. These administrations need to come up with waste separations strategies that are accessible all around these campuses as soon as

³³Ministry for Sustainable Development the Environment and Climate Change. (2014). WASTEMANAGEMENT PLAN FOR THE MALTESE ISLANDS: A Resource Management Approach 2014-2020. Ministry for Sustainable Development, the Environment and Climate Change, (January), 1–209.

possible. Students have expressed the want and need for these strategies and it is about time that more pressure is put on the administration to start meeting these demands.

4.1.4 Private Companies

When it comes to businesses, we need to question the responsibilities that businesses have with regards to waste separation, and what level of enforcement is put in place to create a sense of accountability and consequence. It is no secret that big businesses are some of the biggest polluters and should share as much responsibility. While it is easier to have conversations about what the public should be doing to reduce waste, we must not forget that big business play a big role in this discussion. More policies should be put in place that these businesses need to uphold if we ever want to be sustainable. From a survey conducted by this subcommittee on social media aimed at people who work at private businesses, 69.8% said that they work at companies who hire more than 100 people. Figure 1 shows that only 18.6% of these companies practice full waste separation and 16.3% do not separate waste at all.

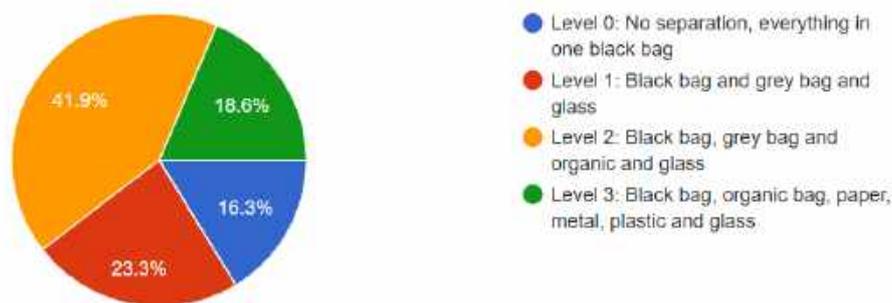


Figure 4: Pie chart showing what level of waste separation is practiced at the respondents' workplace.

Out of all these private businesses the tourism industry is the most commodity centred, which is why it is no shock that this industry produces a lot of waste. Tourists can generate twice as much waste as local people do³⁴ with commercial and industrial waste, which includes waste from hotels and catering establishments, seems to be on the rise³⁵. This is why out of all this industry needs particular attention with more policies and implementation put in place.

³⁴ Styles, D., Schönberger, H., & Martos, J. L. G. (2013). Best environmental management practice in the tourism sector. <https://doi.org/10.2788/33972>

³⁵ Environment Resources Authority. (2018). Chapter 6: Resources and Waste Reporting status from 2009 to 2015. Retrieved from https://era.org.mt/en/Documents/7_Chapter6_ResourcesWaste-16Oct2018.pdf

4.1.5 Localities

Lastly, we need to start implementation on a local level. Local Councillors have the advantage of being closer to residents, and can facilitate in educating the public and creating a sense of accountability within the community. Local councils around Malta have already been organising several hands-on activities that could be used to educate the public, most commonly clean-ups and tree planting activities. The Zebbug local council has been distributing compost bins as a way of promoting and familiarizing people with this activity. These are all examples of good practices that can be repeated in other local councils all around Malta and Gozo. Although village feasts and festivals can bring the local community together, it is well known that these events can generate a lot of waste, therefore, it is imperative that local councils take more responsibility in making sure that they are providing enough bins, both for general waste and recyclable materials. However, this needs to be paired with more information beforehand, as well as restrictions and schemes that can further reduce the waste generated during these events.

4.2 Single-Use Plastics (SUPs)

The 'European Strategy for Plastics', adopted in 2018, states that the environment needs to be protected from plastic pollution whilst still promoting growth and innovation in order to transition to a circular economy. The EU has identified SUPs as one of the main plastic polluters, as their consumption keeps increasing. The main issue is that these SUPs are not recyclable and are littered very often. The main constituents include packaging, lightweight plastic bags, disposable cups, food containers, beverage bottles, cigarette fillers, lids and cutlery as well as others. In order to combat this pollutant, waste laws need to be put in place and a market for alternatives needs to be created to incentives consumers and producers towards these alternatives. The European Commission recognizes that there needs to be a European market for recycled plastic, otherwise efficient recycling in European countries such as Malta will only go so far.

The local strategy in Malta aims to reduce the use of SUPs as well as to increase the quality and quantities of SUPs waste collected for recycling³⁶. A public consultation session on plastic has proved that Maltese citizens are truly concerned with SUP use in Malta, and they have several questions with regards to what happens to these plastics, how they are collected and what happens after. The SUP Products Strategy for Malta has stated that a number of steps are to be taken in the coming years, however, these decisions have not been taken early enough and these actions must be implemented even sooner than planned:

- a. By 2022 plastic carrier bags cannot be distributed for free at the point of sale - This can, and should, be done sooner than 2022. One must not repeat mistakes done in the past and create loopholes that will be taken advantage of. Plastic bags both with and without handles should not be free. The fee should be considerable enough to encourage consumers to use reusable bags.
- b. By 2025 the free distribution of single-use cups will be restricted - Over the past couple of years, we have witnessed the possibility of using a reusable cup in the entertainment sector, even in a big event. A consumer can pay a deposit for the cup and chooses either to keep it or to return it to get back the deposit. Therefore, this can be done before especially for big local events. This should be promoted amongst smaller businesses and encouraged to start investing in it from now.
- c. Pizza lid support and plastic wristbands to be restricted by 2020. These should be banned entirely. As an alternative to a wristband in events, a temporary stamp can be used, as has been done in a number of events locally already.
- d. Bins for separate plastic collection in hotels, marinas, holiday premises, etc.- These Can be placed before 2022. Besides this, any bin for plastic collection should be clearly marked and labelled - the use of pictures on top of words would overcome any language barriers.

A national Beverage Container Refund Scheme (BCRS) will be introduced by 2020 by the Ministry of the Environment in order to increase the collection rates, reduce littering and help further transition towards a circular economy³⁷. This has been implemented in other EU states with great success. In some EEA states, a

³⁶ ERA. (2019). SINGLE-USE PLASTIC PRODUCTS STRATEGY FOR MALTA. 100(6), 149–150. [https://doi.org/10.1016/s0026-0576\(02\)80507-4](https://doi.org/10.1016/s0026-0576(02)80507-4)

³⁷Ministry for Sustainable Development the Environment and Climate Change. (2018). Beverage Container Refund Scheme.

mandatory deposit refund system on one-way beverage packaging was introduced and are very successful in increasing collection rates while decreasing littering. It is very important to introduce and encourage this scheme since in Malta the recycling rate of dry recyclables is very low (much lower than the target levels) and plastic bottles are the main source of marine pollution.

On top of the BCRS, Malta should re-introduce its deposit system for refillable glass bottles. Besides being reusable, glass is a much more easily recyclable material than plastic. Water stations/fountains should be available throughout the islands to encourage the use of refillable bottles. Water fountains are already available at locations such as the University of Malta and the Malta International Airport.

As mentioned in the EU legislation, producer responsibility schemes should be introduced to cover costs relating to littering and waste management of single-use plastics when no alternatives are available³⁸. Taking into consideration the scale of the business when it comes to producer responsibility as to not put smaller businesses at a disadvantage, avoiding too large strains that would endanger their business.

4.2.1 Plastic Packaging

Packaging is one of the main uses of plastics, and the European Commission has stated that by 2030 all plastic packaging should be recyclable³⁹. Besides this, the EU has a target of having a 55% recycling of plastic packaging waste rate by 2030. Malta currently has the worst overall recycling rate in all EU members, with just a rate of 6.7%. This is a big issue in Malta as most plastic packing comes from outside of the country; however, we do have control over how much of this is recycled properly. Therefore, it is important that we priorities this issue and not declare ourselves helpless in the war against plastic, but combat this issue using all our available resources.

The amount of packaging should be decreased as early as possible by eliminating any unnecessary packaging such as individually wrapped fruit and

³⁸ EUPPD. (2019). Directive 2019/904 of the European Parliament and of the council on the reduction of the impact of certain plastic products on the environment. Official Journal of the European Union, L155(November 2008), 1–19.

³⁹ Strong, A., European, S., Industry, P., European, T. H. E., & Industry, P. (2018). A EUROPEAN STRATEGY FOR PLASTICS IN EUROPE.

vegetables - especially produce that comes with its own protective shell/peel such as bananas and coconuts. As a consumer, one can opt to buy locally grown fresh produce which is available without any packaging and would also cut down emissions that come into play when importing products from other countries.

A voluntary scheme is being proposed promoting areas in supermarkets where bulk food (eg spices, legumes, grains, etc.) can be bought without any single-use plastic, instead, the consumer can bring their own containers or use alternative packaging⁴⁰. It is estimated that 1 million packages are prevented every year through the 30 'eco-points' throughout Italy and Switzerland that offer such a service⁴¹. Not only does this cut down on the amount of packaging but also the consumer can choose how much they buy, effectively reducing expenses and food waste.

Recycled and recyclable plastics being used for necessary packaging is a good start. However, Malta is highly dependent on the exportation of plastic waste, around 30% of plastic waste treated is exported for recycling. This increases the costs of the recycling process and also increases fuel emissions ⁴². Hence, alternative materials, such as home compostable materials, should be a preferred solution. It should be highlighted that biodegradable materials should not be used as an alternative in Malta as we do not have a facility for these materials, thus they end up in landfills where they are not met with the necessary conditions to degrade. Oxo-degradable plastic products will be prohibited by 2021 since, during the degradation process of this material, it breaks down into microplastics adding to the microplastic waste in our seas.

4.3 Waste Electrical and Electronic Equipment (WEEE)

Another one of the fastest growing waste streams is Waste of electrical and electronic equipment (WEEE) such as computers, TV-sets, fridges and cell phones etc. These contain complex mixtures of materials and components that have hazardous content and if not managed properly, they can cause major environmental and health problems. It is essential to collect, treat and recycle electronics since they require

⁴⁰ERA. (2019). SINGLE-USE PLASTIC PRODUCTS STRATEGY FOR MALTA. 100(6), 149–150. [https://doi.org/10.1016/s0026-0576\(02\)80507-4](https://doi.org/10.1016/s0026-0576(02)80507-4)

⁴¹ European Commission. (2010). Being wise with waste : the EU ' s approach to waste management. Publications Office of the European Union, 20. <https://doi.org/10.2779/93543>

⁴² ERA. (2019). SINGLE-USE PLASTIC PRODUCTS STRATEGY FOR MALTA. 100(6), 149–150. [https://doi.org/10.1016/s0026-0576\(02\)80507-4](https://doi.org/10.1016/s0026-0576(02)80507-4)

scarce and expensive resources to produce. This is important in order to contribute to the circular economy and enhance resource efficiency.

Electronic waste cannot be disposed of in the same way as other regular household waste. This being because it generally contains toxic materials such as mercury, lead and cadmium. If disposed of incorrectly, i.e. throwing them in the black bag or illegally dumping them in a segregated field, these materials leach toxic chemicals, like lithium and barium, into the soil and groundwater system while breaking down. These toxic chemicals eventually make it to our food and tap water, naturally making incorrect disposal hazardous and unsafe. Malta currently aims to collect 50% of the electronics put on the market each year and this target shall increase to 65% by 2021.

WEEE Malta take-back system for business entities and producer members and any members who have electric and electronic equipment to dispose of can liaison with WEEE Malta to request a collection. Under the current WEEE Regulations:

- a. Importers and producers need to register electronic items put on the local market and include specifics such as quantities, categories, and brand.
- b. When buying new appliances, suppliers and shops, by law, must accept one's old appliances.
- c. Households can contact local councils with regards to bulky equipment which includes electronic waste and fines are given to anyone caught throwing any form of WEEE in their black bag.

Small e-waste can be disposed of in a WEEE Trolley which is located all around Malta at local councils, schools and businesses. For these to be successful, the local councils have to work on raising awareness on disposing of electronic waste responsibly and also improve the promotion of these disposal sites. Youths heavily influence electronics purchases, not necessarily by purchasing themselves, but also because they influence their friends and relatives. Institutions and schools need to help in raising awareness on responsible disposal in environments where this demographic is most present, i.e. University and post-secondary schools. Currently, no WEEE trolleys are located at these institutions. Providing the University of Malta and Sixth

Forms with these trolleys will make disposal of small electronic waste (like chargers, non-fixable phones, headphones, etc.) more efficient and accessible.

4.4 Socio-Economic Aspect

The waste cycle does not only have a negative effect on the environment but also on social and economic aspects. We must aim for a circular economy rather than a linear one, therefore the design of products should always consider the use phase, reusability and recyclability. Failure to recycle costs the European economy €105 billion each year⁴³. Hence, reusable products should be promoted over single-use products in order to aid the economy, reduce the use of precious resources, cut down emissions and generating less waste.

About 84% of marine litter on European beaches is made up of plastic, half of which are SUPs⁴⁴. Marine pollution has drastic impacts on ocean and coastal habitats, wildlife, economies and ecosystems⁴⁵. Economic sectors such as fishing, tourism, aquaculture, recreation and shipping are all impacted. Considering Malta is highly dependent on tourism and our seas, actions towards reducing and even eliminating marine pollution should be a priority.

One must not deny that low-cost, lightweight and resistant products are beneficial especially for people with a lower income. As of yet, environmental alternatives to certain products are still too expensive due to the limited market. Despite some commitments from major companies to reduce waste, much of the food and drinks industry is still trying to work out how it will meet these targets. Some experts fear that without the right approach, the goods we buy will be more expensive. This is why we must be cautious when dealing with this situation and not take into consideration all aspects of these issues. True sustainability can only be reached when no one is left behind.

43 European Commission. (2010). Being wise with waste: the EU's approach to waste management. Publications Office of the European Union, 20. <https://doi.org/10.2779/93543>

44 ERA. (2019). SINGLE-USE PLASTIC PRODUCTS STRATEGY FOR MALTA. 100(6), 149–150. [https://doi.org/10.1016/s0026-0576\(02\)80507-4](https://doi.org/10.1016/s0026-0576(02)80507-4)

45 UNEP & GRID. (2016). Marine Litter Vital Graphics. United Nations Environment Programme and GRID-Arendal. Nairobi and Arendal. www.unep.org, www.grida.no.

5 The Built Environment

SDG 11 calls for sustainable cities and communities. This goal includes targets such as the protection, preservation, and conservation of cultural and natural heritage, the lessening of the per capita environmental impact of cities, access to green public spaces for all and the development of a sustainable green urban economy. Sustainable cities should enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management.

5.1 Creating Green Open Spaces

At present, 23.7% of land in Malta is built-up according to Eurostat. It is by far the highest-ranked country in the European Union in terms of how much of the country is covered by man-made surfaces. The country that comes in second place is the Netherlands at 12.1%, despite being a far larger country than Malta.⁴⁶ The effects of our increasingly densely populated and built-up environment are easy to see visually, but their effects on the wellbeing of the population can also be more subtle.

Since studies show a trend towards urbanisation reducing subjective wellbeing, we must pursue the SDGs with urgency⁴⁷. To protect cultural and natural heritage while also providing more green open spaces, the government must open up new public spaces. At present, most towns and villages are rapidly losing their remaining green enclaves to development. Fields within town centres and around them are being turned into access roads, with flats springing up. It is urgent, therefore, that to meet its SDGs, that the government embarks on the creation of new public open spaces to be enjoyed by the public and create a healthier environment.

⁴⁶LUCAS - Land use and land cover survey - Statistics Explained. (2019), from https://ec.europa.eu/eurostat/statistics-explained/index.php/LUCAS_-_Land_use_and_land_cover_survey

⁴⁷Winters, J. V., & Li, Y. (2017). Urbanisation, natural amenities and subjective well-being: Evidence from US counties. *Urban Studies*, 54(8), 1956–1973. <https://doi.org/10.1177/0042098016631918>

This is achievable through;

- a. Rehabilitation of derelict land owned by the government. The government must establish a clear inventory of what derelict land it currently possesses and convert this space into a community space.
- b. Expropriation of land: some remaining gardens and fields in our urban spaces can be expropriated and then opened to the public to be enjoyed.
- c. Public-Private Partnerships whereby owners of gardens and open spaces, including fields, make the land available to the general public and open up access. They may even gain some sort of commercial benefit out of it, in an arrangement with the government. This could involve the opening of kiosks, cater to events including weddings, and generally provide services to the community.

These open spaces would allow for community gardening projects and educational excursions while providing common spaces for people to come together in an otherwise rapidly changing urban fabric. As the remaining green spaces in our towns and villages are increasingly limited, it is urgent that some of them be protected as soon as possible.

Additional benefits to communities would be economic, in that there is a cost to the economy which is currently hidden from overdevelopment in terms of health. A Mental Health Strategy for Malta 2020-2030 mentions the importance of man's environment as a leading factor in the state of one's mental health, as something which must always be considered for positive outcomes⁴⁸. The report states that "the global burden of disease attributable to mental disorders has risen in all countries in the context of major demographic, environmental, and socio-political transitions." As Malta is going through a major environmental transition, it is necessary to place due importance on the Built Environment as a Sustainable Development Goal, especially

⁴⁸Parliamentary Secretariat for Health. (2014). A National Health System Strategy for Malta 2014-2020. 1–104. Retrieved from <https://deputyprimeminister.gov.mt/en/Documents/National-Health-Strategies/NHSS-EN.pdf>

as the government's Mental Health Strategy accounts for the environment as a factor that can be used to build mental health resilience.

Physical health is also negatively affected by the loss of the remaining green enclaves inside our towns and cities, while also destroying the remaining biodiversity in these areas. This puts a burden on our public health system and increases the costs to our environmental government agencies when they attempt to address the environmental problems caused by overdevelopment.

5.2 Rehabilitating Old Vacant Property

Undoubtedly, one of the most evident aspects of the Built Environment in Malta is the number of abandoned buildings, these being vacant property and unoccupied dwellings. In terms of statistics, the most recent data which can be analysed is the last census which was carried out in 2011 and published in 2014. According to this census, the total number of abandoned buildings in Malta amounts to 71,080, with this figure being divided between dwellings which exist for seasonal and secondary use, which amounts to 29,848, while the remaining 41,232 dwellings are completely vacant⁴⁹. It is important to point out that since this was the latest research that has been carried out on this matter, there is no other collection of data to assess the current situation related to vacant properties.

Vacant properties are partly due to disputes over ownership. One way of addressing this issue is by taxing these vacant properties as a means of putting pressure on the heirs and not prolong such cases. The government should also consider its own neglected property. This neglect is not only leaving a profound impact on the physical state of these buildings but is also impacting the historical value of our heritage.

It is imperative that we protect the historical value of traditional Maltese architecture and historical sites by preserving these sites in order to protect them from being demolished or having their traditional status modified in any way. In light of all this, a 'National Aesthetic Board' must be created so as to ascertain that the traditional style of Maltese architecture should be maintained and given precedence over

⁴⁹NSO. (2014). Census of the population and housing 2011: Final report. 1–365.

buildings with a more modern style of architecture. This should be done in order to maintain architectural symmetry and preventing an unseemly building being built alongside a series of properties with traditional architecture. Whilst protecting our historical and cultural heritage, such a measure will also serve the purpose of minimising the effect of visual pollution.

A more urgent action that needs to be undertaken is the restoration of these sites to their original state, in order to prevent these buildings from being demolished. This would also encourage their use for other purposes that maintain their identity. One way of achieving this would be to give more authority and resources to the Superintendence of Cultural Heritage to carry out more cultural heritage surveillance.

Our Environmental Resource Authority (ERA) requires more responsibility and powers being handed to it to be on par with the Planning Authority (PA). The impact of construction on our environment needs to be taken more seriously, therefore, ERA and the PA must have ascertained to be on an equal level, to curtail the unchallenged power which the PA currently has. The PA requires an increased amount of personnel in order to professionally monitor construction sites sufficiently and guarantee that irregularities are not committed, especially when it comes to health and safety measures. Also, there needs to be more enforcement and monitoring when it comes to the equipment and materials being used. Quick and cheap construction work can be hazardous and detrimental both to the environment and to public health.

6 Sustainable Agriculture, Consumables and Ecotourism

Many SDGs affect agriculture, most notably SDG2 which calls for sustainable agriculture and has specific targets that state that by 2030 sustainable food production systems are to be ensured, and resilient agricultural practices that increase productivity and production are to be implemented. These must also help maintain ecosystem and strengthen capacity for adaptation to climate change and extreme weather and that progressively improve land and soil quality. It is important to note that SDG 2 targets also state that the productivity and incomes of small-scale food producers should be secure and have the opportunity for value addition. Agriculture is also related to SDG 12 which is concerned with the responsible consumption and production as are many other consumables. Ecotourism has been mentioned a couple of times in this document, due to the important sector of tourism in Malta which is impacted by many of the topics in this document. In this chapter, we shall discuss more what this entails.

6.1 Sustainable Agriculture and Consumables

Presently, Malta's agricultural sector faces many issues – namely water scarcity, the paucity of land, competition with various industries and international trade, the ageing population of farmers, and climate crisis⁵⁰. The lack of importance and low-grade image given to farming, both by government officials and the public, is also a dangerous perception in terms of the resulting profound reliance on imports that make Malta vulnerable to external circumstances, and the lack of youth willing to endeavour in the sector – where currently, the figure of full-time farmers is 7%. Valuing local agriculture solely by a measure of GDP (at which it contributes to less than 2%) overlooks its invaluable and significant role in terms of protecting the natural environment, preserving cultural landscapes, and its contribution to the tourism sector. As we are on the path to considerable climate change, it is paramount that sustainable agriculture is at the forefront of national policy.

⁵⁰ Friends of the Earth Malta (2017) From apricots to zucchini: The local vegetable and fruit supply chain in Malta. Agro Katina report. pp. 4 – 31.

6.1.1 Alternative Methods

a. Permaculture/Agroforestry - Organic Farming

Permaculture can be defined as “consciously designed landscapes which mimic the patterns and relationships found in nature while yielding an abundance of food, fibre and energy for provision of local needs⁵¹ Agroforestry is similarly a combination of agriculture and forestry, in which trees and shrubs are planted alongside agricultural crops and/or animals. These mixed farming techniques can contribute to both ecological and economic improvements, diversify farm income, and successfully incorporate eco-tourism/agritourism. The concepts behind these systems underlie Maltese traditional farming practices, prior to conventional agriculture.² They are defined by organic principles, and best function on small scale plots, making it ideal for the size of Maltese farms (average <1 hectare).

Monoculture is an unnatural agricultural model that leads to soil deprivation, and in turn, a reliance on artificial fertilizers and pesticides – bringing about eutrophication and contamination of groundwater; habitat destruction and biodiversity loss. Permaculture and agroforestry depend on the farmer truly understanding the land and adapting to its regenerative cycles – which are highly specific to different sites and would need to be achieved with conscious planning. If implemented efficiently, it could:

- a. Increase the absorption of rainwater in the upper soil profile
- b. Increase and diversify crop production
- c. Control soil erosion and reduce nitrate leaching (Malta is a Nitrate Vulnerable Zone)
- d. Increase biodiversity and ecosystem resilience
- e. Reduce waste (by making use of plant/animal by-products)
- f. Increase carbon sequestration

⁵¹ Vella, S.S. (2010) Sustainable agricultural management and landscaping through agroforestry and permaculture case study: Northern Malta. Masters Theses. 433.

The Maltese Organic Agriculture Movement (MOAM) suggest ways in which Maltese farmers can go about adopting permaculture:

- a. Preservation of indigenous vegetation
- b. Rearing of free-range local farm animals
- c. Installation of solar and wind energy/heating
- d. Greenhouses
- e. Compost toilets
- f. Vermicomposting
- g. Greywater purification systems

With national water resources among the most stressed globally, rainwater harvesting must see a considerable increase in reservoirs and rubble walls utilised to minimise soil erosion. The Sustainable Energy and Water Conservation Unit (SEWCU) estimated that only 9% of water employed for agriculture in 2015 derived from rainwater - 86% extracted from groundwater sources⁴. Native species that are best suited to the Island's climate and soils, such as the Olive, Carob, Pomegranate, Fig, Almond and Prickly Pear, must be incorporated in these mixed systems. Furthermore, creating a circular economy, whereby production units are set up to process and provide local raw materials, including fresh fodder, organic compost and biofuels from waste products, needs to become standardised.

It is necessary that agroforestry and permaculture be reintroduced on a national scale, in order to preserve the natural environment and benefit local farmers. MSDEC needs to invest in education and support the conversion to organic farming with permaculture philosophy, also in relation to managing abandoned fields. This conversion must be assisted with funding, which can fall under the Rural Development Programme (RDP), in order to mitigate transition expenses. It is imperative that requisite permits be issued more efficiently by PA. In a local study undertaken on the issue², farmers were interested in developing these techniques, provided they had appropriate education and funding.

b. Aquaponics/Hydroponics

These technological innovations have considerable advantages for The Maltese Islands, given that there is a lack of farming space, and that they employ targeted water/nutrient application⁴. Hydroponics is defined by the production of plants in a water medium, using monitored levels of nutrients, without the use of soil and can be stacked vertically. Similarly, aquaponics integrates aquaculture to create a self-perpetuating ecosystem; where fish excrements become the fertilizer for the plants. The water in the fish tank passes through filters (containing the processed nitrates), to nourish the plants, and then the plant-purified water feeds back into the fish tank. Investment in aquaponics/hydroponics would generate specialised jobs and high revenue that would benefit the local economy. Nonetheless, it is fundamental that this investment does not come at the expense of traditional agriculture, which will continue to provide jobs for the majority in the sector and maintain stewards of the land, who protect and conserve the natural environment – a crucial factor in the wake of climate change.

c. Amenity horticulture

This should be encouraged, especially towards the youth partaking in agricultural studies, as additional or alternative ways of sustaining an income in the sector, alongside crop production/livestock management; with a focus on indigenous plants that possess climatically resilient qualities and encourages the proliferation of bee species – which can qualify for EU funding⁵²

d. Community Gardening

The practice of community gardening should be encouraged to persons from all walks of life, and in various institutions. Children should be learning how their food grows from a young age, implemented as part of school time activities. The more people are involved in the process of growing their own food and learning what goes into making it, the greater extent people care about and value where it comes from, who's growing it and its environmental impacts. Food holds profound cultural

⁵² European Commission (2016) CAP in your country. Agriculture and Rural Development.

influence, and the solutions to environmental issues surrounding it will come with mass cultural shifts in thinking about food⁵³.

6.1.2 Research & Innovation

It is foundational that the government incentivises Higher Educational Institutions (HEI) to conduct research in agricultural sciences.⁴ Students in this sector should be inspired to develop innovative business models that pertain to niche markets, and entrepreneurs assisted in tapping RDP funding. Furthermore, a bottom-up approach where farmers are involved in establishing areas requiring research and development is essential. Resilience to ongoing climate change requires a strong partnership and understanding between governing bodies, farmers and institutions. A bottom-up, inclusive national policy for agriculture, that is sustainable and assisted by agri-environmental incentives, must be effectuated, consolidating environmental and societal benefits. Through such a policy, the high value of local food and the farmers that grow it must be elevated in society, and research and involvement in the sector made attractive to the youth.

6.2 Ecotourism

Alongside the aforementioned proposals, ecotourism also needs to be planned and funded for sustainability. The amount of total inbound visitors (including overnight cruise passengers) has been gradually increasing in the past years and will most likely continue to do so, seeing that Malta is one of Europe's most favourable holiday destinations⁵⁴. Since Malta's tourism sector contributes largely to the island's GDP, it forms a key sector in our country's economy and with that, comes a greater responsibility to ensure that the tourism industry can abide by other sustainable ideas laid out in this policy. In this regard, it is advisable to put efforts into investing in our natural resources to sustain our tourism industry in the following ways;

Making use of our resources, namely seas, waterbeds and diving areas to benefit the tourism sector. It is evident that Malta's rich history and culture are the two main

⁵³ Atriga Consult (2018) National Agricultural Policy for the Maltese Islands 2018 – 2028. Final Report prepared for the Ministry for the Environment, Sustainable Development and Climate Change

⁵⁴ Tourism and Education Statistics Unit. (2019). Inbound Tourism: September 2019. Retrieved from https://nso.gov.mt/en/News_Releases/View_by_Unit/Unit_C3/Tourism_Statistics/Documents/2019/News2019_181.pdf

driving forces of the annual influx of visitors. Therefore, it is recommended to market especially these areas so that they can be enjoyed by all tourists and introduce more sustainable activities during tourists' stay in Malta. However, it is advised to do this in an organised manner which avoids environmental erosion whilst giving an alternative to busy city tourism. For this to happen, R&D departments need to be assigned to the matter.

Malta is developing economically and even technologically. This can be used to reach targets for sustainable ecotourism by shifting the efforts put into its investment and research. It is imperative that enough time and research is invested into planning and developing strategies for ecotourism, to be able to address and adapt to evolving wants or needs from both tourists (such as new trends in activities) and those of the Maltese natural resources themselves (such as land rehabilitation after over-use or overcrowding due to tourists). Only through this work can funds and assets be allocated respectively. Monitoring and evaluating the process of this whilst the tourism sector grows allows for the right measures to be taken before degradation or loss of interest sets in. Possible investments do not only come from solely governmental funds but even include projects financed by individual investors and corporations; these too need the right research to find the right interested parties.

Natural preserved areas like Malta's beaches and coastal areas are particularly relevant in the area of ecotourism. These can be used to attract tourists for activities which go beyond the average 3S tourism (sun, sea and sand) strategy which islands offer. Ecotourism cares for more diverse experiences and activities that tourists can enjoy without harming the unique environment of our islands. Malta's natural gems include its caves, which are not being very well marketed for diving but offers an exceptional marine tourism activity. This further promotes the cleaning and upkeeping of not only land but even marine areas.

Sustainable beaches too hold significance here. It is advised to protect coastal areas from overcrowding, from pollution by boats, their anchors or even sea-bed disturbances due to unsustainable snorkelling and diving. Investing in the right conservation policies, training programmes and guided expeditions will elevate these issues, some which are already laid out in the Natura 2000 plans regarding especially Special Protection Areas (SPAs) and Special Areas of Conservation (SAC). It is

imperative that these plans are respected and followed by the tourism industry. Amongst other activities which are more sustainable and not offered enough, is hiking opportunities for tourists. These can be offered from various agencies and be promoted more. The Maltese Islands have plenty of remote countryside areas, especially coastal areas which are suitable for these opportunities and can be enjoyed by tourists.

Investing in protected and natural areas further promotes their visitation, increases capital spent in those areas and creates jobs for professional trainers and guided expeditions which all help to create a sustainable cycle within the tourism industry. The human resources needed for this sector will then enhance the educational and public relations aspect of it. A big percentage of tourists come to Malta for its untouched nature, therefore investing in it and including it in all the other developing systems will help preserve Malta's natural resources whilst they function as touristic attraction and contribute the state's economy.

Finally, a big part of preserving virgin land and natural reserves is the protection of ODZ (outside development zones). It is highly advised that these laws and policies are strictly followed and upheld by their respective authorities. Due to the restricted area of the island, such zones are of high importance in finding the balance between cosmopolitanism and the protection of agriculture land, a risk run by many SIDS (small island developing states). Even in the event of agricultural tourism, Malta's space is limited and cannot allow for the construction of these areas, especially category A types of ODZ. Ecotourism creates an environment where there is less need for new construction and more need for the preservation of the already existing and intact land.

National ecotourism targets and its planning can be strengthened by international guidelines and conferences such as the International Small Island Cultures (ISIC) conference in 2015 and Conference on Sustainable Tourism in 2017, which were both held in Malta. When international regulations are endorsed in Malta, many tourists find comfort in knowing that their holiday is planned in an environment-friendly way and will eventually attract a percentage of tourists for exactly these specific reasons. The promotion of these activities and the use of natural resources can further be promoted through eco-friendly travelling apps and offering

the implemented activities from all local and international travel agencies supporting Malta's sustainable tourism industry.

7 Conclusion

Earlier this year, during a National Youth Parliament session KNŻ demanded in Parliament that a state of ‘Climate Emergency’ be declared in Malta. This was just the start of the process. KNŻ and 30 other organisations signed a letter asking Parliament to pass this motion, not because we believed this would solve all of Malta’s environmental problems, but because we knew that the state of crisis we find ourselves in now cannot be solved unless the highest institute in our country acknowledges the need to prioritise this situation.

Moving forward, we need to see a commitment from our leaders in the form of laws and a budget dedicated to solving this crisis through educating the public, investing in research, creating management plans and effective enforcement as mentioned multiple times in this document. This is the only way we can undo certain perceptions and habits, rooted in our society, that have allowed poor decisions to occur at the expense of our environment.

One of the main objectives of this document is to propose practical solutions, backed up by research both for short-term and long-term results. The greater scope of this policy document is to ensure the entrenchment and implementation of sustainability within the aspects of Maltese policy.

Social cohesion, commitment, good understanding and respect for the environment will set us on a path of healthy social wellbeing and economic benefits. Moreover, these proposals can help us reach various environmental targets and avoid paying fines that could otherwise be used as investments into this sector. The creation of environmental jobs will safeguard the environment and provide opportunities for a greener, sustainable future that takes in consideration the current and future generations.



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