

BEACON Output 02: Process and Content Proposal

4 Tracking Country Progress - MALTA

4.1 The Paris Agreement

4.1.1 Country statement of commitment to the agreement

As a signatory to the United Nations Framework Convention on Climate Change (UNFCCC) and the 2015 Paris Climate Agreement, Malta has international commitments towards action on Climate Change, and as a Member State of the European Union, Malta contributes to the EU's Nationally Determined Contribution (NDCs). Malta's Climate Action Act in 2015 enshrines international requirements into national law. The Climate Emergency Resolution in 2019 provides nationally binding legal obligations for coherent and coordinated governance to deal with the climate crisis. Malta has recently taken a further step in cementing its commitment to a sustainable, low-carbon future, with the government announcement that carbon neutrality will be one of the five main pillars of government economic policy¹.

In line with the Paris Agreement, the EU has a long-term strategy to achieve climate neutrality by 2050, under which each Member State is required to plan and communicate a Lower Carbon Development Strategy up to 2050. Malta's Lower Carbon Development Strategy is consistent with Malta's National Energy Climate Plan, which aims to ensure the achievement of the EU's 2030 objectives and targets in line with the Paris Agreement commitments. The LCDS is also aligned with the Long-Term Renovation Strategy, which supports the renovation of the national building stock into a highly energy efficient and decarbonised building stock by 2050 and is in line with the EU Energy Performance of Buildings Directive.

EU negotiations in 2018 resulted in legislation relating to the Effort Sharing Regulation (ESR) that has led to Malta's bespoke targets. The ESR targets relate to emissions not covered by the scope of the EU Emissions Trading Scheme (ETS) emissions. For Malta, the target is to achieve a 19% reduction in net territorial non-ETS GHGs (relative to 2005) by 2030.

The Climate Action Act was published as Chapter 543 of the Laws of Malta in 2015 and is Malta's main law on climate change. The Climate Action Act, as an enabling Act specifies that it aims to contribute to the mitigation of climate change by limiting anthropogenic emissions of greenhouse gases (GHGs) and to protect and enhance greenhouse gas sinks and reservoirs. The Act was promulgated following unanimous endorsement by Parliament.

It also provides legal obligations for coherent and coordinated governance to deal with this challenge on a national level. The subsidiary legislation under the Act transposes the legally binding commitments the EU member States have under the 1992 United Nations Framework

¹ Malta Low Carbon Development Strategy

Convention on Climate Change (UNFCCC), 1997 the Kyoto Protocol and the 2015 Paris Agreement. Besides the Climate Action Act there are various national Policies, Strategies and Plans that address climate action².

The Act establishes a Climate Action Board (CAB) as a body that represents government entities, the academia, business and civil society which ensures representation of all sectors of Maltese society in the fight against climate change, even by facilitating stakeholder dialogue. It aims to instill ownership relating to climate action governance across the public and private sectors.

The aim of the CAB is to mainstream climate action, monitor the implementation of International and EU obligations regarding Greenhouse Gasses emissions and to facilitate preparedness to ensure adaptation to the impacts of climate change and hence to address the cross sectoral aspect of climate action and its governance.

The CAB also monitors progress and facilitates the coherent implementation of Malta's legal commitments relating to climate action both under International law and EU law. It was also required to report periodically to the Minister responsible for climate change on the state of play of the implementation of mitigation obligations and adaptation measures being undertaken. The Minister responsible for climate change shall every year, lay before the House of Representatives the report of the Climate Action Board³.

The Climate Action Act also sets up a Climate Action Fund, which has a separate juridical personality and serves to act as the financial instrument which supports the implementation of the Act namely measures to abate GHG emissions and to adopt carbon neutral technologies as well as to enhance sinks of such emissions whilst building a society, whose sectoral components are resilient to climate change.

The Sub Committee of the Climate Action Board as the Stakeholder Dialogue Working Group for the Building and Construction Industry (SDBCI) was set up to propose recommendations related specifically to the Built Environment and Construction Sector, as a critical field. The main recommendations focused on key thematic areas: Transport, resources and Waste, Sustainable Sites, Water Efficiency, Energy and Renewable Energy Systems, Environmental Air Quality and Noise. These areas have been analysed and recommendations for the implementation of key measures have been published.⁴

(Proposals towards achieving Climate Neutrality by 2050 in the Building and Construction Sector, 2021, Climate Action Board Malta)

² <https://environment.gov.mt/en/decc/Pages/climateActionAct.aspx>

³ <https://environment.gov.mt/en/decc/Pages/climateActionBoard.aspx>

⁴ Proposals towards achieving Climate Neutrality by 2050 in the Building and Construction Sector, 2021, Climate Action Board Malta

4.1.2 Institutional structure/mechanisms responsible for implementing the Paris Agreement

Climate change policy falls under the responsibility of the Ministry for the Environment Climate Change and Planning. The Environment Resources Authority (ERA) is the national competent authority that takes the overall responsibility for the drafting of the National Air Pollution Control Programme, in consultation with the relevant stakeholders. ERA falls under the responsibility of the same ministry: The Ministry for the Environment, Climate Change and Planning (MECP).

In terms of air quality, the ERA has the following responsibilities:

- The elaboration of and reporting of the NAPCP;
- The air emissions legislation;
- The ambient air quality legislation, which includes the assessment, monitoring, reporting on air quality and air pollution impacts, together with the reporting of the emissions inventory and projections;
- Regulates the environmental impact of the industrial sector through permitting systems;
- Enforces compliance with legislation;
- Regulates emissions from the industrial sector.

The Malta Resources Authority (MRA) is designated as the national inventory agency for the elaboration of annual national inventories of greenhouse gas emissions and removals.

The Energy and Water Agency (EWA), within the portfolio of the Ministry for Energy and Water Management (MEW) is responsible for the preparation of National Energy and Climate Plans pursuant to the Energy Union Governance Regulation, under the auspices of an Inter-Ministerial Steering Committee. The EWA is also responsible for preparing projections for the energy sector, which are then converted to greenhouse gas emissions. The MRA is responsible for preparing projections of greenhouse gas emissions (and removals) for Industrial Processes, Agriculture, Land Use, Land-use Change and Forestry and Waste.

ERA collaborates closely with MRA and EWA, so as to maximise and ensure coherence between reporting obligations.

Responsibility for sector-specific policy-making and policy implementation lies largely within the Ministries and government bodies responsible for the respective sectors.

Transport Malta (TM) is the authority responsible for the promotion and development of the transport sector in Malta, by means of proper regulation. TM aims to achieve modal shifts and improve the public transport system, amongst other objectives. Since the road transport sector is the most important key source category for NO_x emissions in Malta, most of the measures

included in the NAPCP focus on the road transport. To this effect, the measures included in the National Transport Master Plan for 2025 were given due importance with a view to gauge the extent to which these measures will result in emission reduction. This Master Plan is a planning and implementation document, with measures in the short to medium term duration. It aims to achieve the goals set by the National Transport strategy, which creates the strategic framework by 2050. Furthermore, measures from the Malta National Electro-Mobility Action Plan(MNEAP) were also given due importance since the plan includes a number of measures targeting sustainable mobility. The MNEAP also seeks to promote a change in culture of the public's perception on mobility and transportation in general. TM reports to the Ministry for Transport, Infrastructure and Capital Projects.

Since the NAPCP needs to include measures that are also reducing atmospheric pollutants resulting from the agricultural sector, discussions were held with the Agriculture Directorate (AD), the Diversification and Competitiveness Directorate (DCD), the Agriculture and Rural Payments Agency (ARPA) and the Governance of Agricultural Bio-resources Agency (GAB), to identify which measures have been implemented so far and that are likely to reduce relevant pollutants (mainly ammonia). The ARPA manages a Cross-Compliance Framework whereby farmers who are provided with subsidies are expected to implement a series of sustainable actions. The Cross-Compliance Framework brings together obligations arising from a number of Directives, which are enforced by the relevant competent authorities.

4.1.3 National Statement on progress in implementing the Paris Agreement

The nationally determined contribution submitted for the 5-year interim period regarding Malta's targets and performance is documented in a statement submitted by Germany and the European Commission on behalf of the European Union and its member states on 17th December 2020⁵.

Since ratifying the Paris Agreement, the EU has enacted an ambitious, binding, legislative framework to deliver on its initial NDC.

The EU's enhanced NDC represents a significant progression beyond both its current undertaking of a 20% emissions reduction commitment by 2020 compared to 1990, and its NDC submitted at the time of ratifying the Paris Agreement. Both the initial NDC and this update require significantly higher emissions reductions than were projected as business as usual at the time of their adoption.

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https://www4.unfccc.int/sites/ndcstaging/PublishedDocuments/Malta%20First/EU_NDC_Submission_December%202020.pdf

By the end of 2019, the EU and its Member States have already reduced their emissions by around 26% on 1990 levels while GDP has grown by more than 64% over the same period. As a result, average per capita emissions across the EU and its Member States have fallen from 12 tonnes CO₂ in 1990 to 8.3 tonnes CO₂.

This enhanced NDC is in line with the EU's agreed objective of achieving a climate-neutral EU by 2050. The EU therefore considers the enhanced NDC to be a fair contribution towards the global temperature goal of the Paris Agreement.

In July 2020, the European Council agreed that "the exceptional nature of the economic and social situation due to the COVID-19 crisis requires exceptional measures to support the recovery and resilience of the economies of the Member States. The plan for European recovery will need massive public and private investment at European level to set the Union firmly on the path to a sustainable and resilient recovery, creating jobs and repairing the immediate damage caused by the COVID-19 pandemic whilst supporting the Union's green and digital priorities."

The Maltese government has already committed to becoming carbon neutral by 2050, as part of its five pillars of economic growth and recovery from the COVID-19 pandemic. At the same time, Malta understands that its effort will only contribute a very small (absolute) part to the required global effort, with larger and more developed countries having to carry large reductions to their footprint. In this regard, Malta can still take a key role in the global war against CC – by assisting in the piloting of carbon efforts and new technologies (carbontech). The recent public announcements that the island of Gozo can become carbon neutral before Malta's 2050 target confirm government's commitment. Government also welcomes the local private sector's efforts to follow in these steps, with various local companies having already announced plans towards carbon neutrality.

Over the past years, Malta has already been seeing a reduction in carbon emissions, especially due to the shift of power generation using gas rather than heavy fuel oil.

4.1.4 Specifics of the Paris Agreement and the built environment – if any!

Government's policy is to fully exploit all reasonable potential indigenous sources of Reusable Energy Sources and to support the private sector in similar efforts. PV technology has turned out to be the most robust of all indigenous sources.

Land-use issues are of paramount importance in Malta given its size and high population density. As highlighted by Eurostat, 33% of Malta's land coverage is developed (buildings/roads/artificial areas) which is by far the highest percentage in the EU. PV

technology is land-intensive. This is a major problem for Malta, where land is scarce and expensive and visual impact inescapable. Large PV farms in open countryside will be visually intrusive. In this respect, the Planning Authority (PA) drafted a Solar Farm Policy which sets out the fundamental criteria which the authority deems appropriate to guide the planning and design of solar farm development. The policy furthermore, encourages solar farm development which achieves dual or multiple uses of land, mainly due to land availability restrictions in Malta, to ensure that urban areas are exploited in a more efficient manner. It also provides for solar farms development with a priority given to large scale rooftops, car parks, industrial areas and quarries. The policy has been subject to public consultation and scrutiny by the Parliamentary Standing Committee for Environment and Development. It is Government policy to incentivise investment on roofs and brown field sites, maximising their potential.

Support in terms of EU/national capital grant incentives and feed-in tariff schemes, as well as the reduction in cost of module production, have resulted in roof-mounted PV systems becoming more attractive and affordable, and hence larger and more numerous. This proliferation of systems is generating increasing concern on their visual impact affecting the urban landscape and skyline in village cores. PV systems on rooftops are often highly visible from street level and adjoining streets. The 2015 Development Control Design Policy, Guidance and Standards issued by the PA aims to tackle this issue. PV installations on industrial rooftops create fewer visual concerns, and a mapping exercise to estimate the potential of Malta Industrial Parks (MIP) sites (Government-owned factories) has already been carried out. However, the available roof space is limited by property issues and still needs to take into account structural limitations and shading. Low value sites such as parking areas can be utilised for constructing PV systems, thereby adding value to the site without eliminating activities not requiring access to sunlight at the site⁶.

4.1.5 Carbon emissions and the building industry – policy and action

Buildings in Malta generally utilise electricity for lighting, space heating and cooling, water heating, and for powering appliances and equipment. Unlike other European states, in Malta there is no gas supply network passing through towns and villages. Additionally, the design of a building affects the levels of heating and cooling that are required to be produced through different appliances.

Projections suggest that the building stock in Malta will increase by approximately 20% by 2050. It is noted, whilst equipment is easier to replace, changes to fixed infrastructure – such as insulation or shading – is more costly, and those costs increase when changes are made through retrofits rather than designed into new buildings. Therefore, the Lower Carbon

⁶ https://meae.gov.mt/en/public_consultations/opm/documents/pr%20162438a.pdf

Development Strategy assumes new buildings are targeted so that further costs are not burdened on future generations.

A key consideration regarding the degree to which measures can be implemented in the residential buildings sector is that Malta's average energy consumption per dwelling is well below the EU average and is the lowest among all EU Member States. This is likely to be a combination of the warmer climate than many EU countries reducing the need for space heating, and Malta's development path towards EU GDP per capita convergence. Thus, whilst the buildings sector has a key part to play in Malta's Lower Carbon Development Strategy, the relative magnitude of savings from the sector will be lower than other countries across the EU, as there is relatively less to save.

The following is a list of measures that are being proposed to support the reduce Greenhouse Gas emissions from the buildings sector in Malta:

- Improved Energy Efficient (EE) appliances
- Installing roof insulation
- Installing insulation and double glazing
- Increased use of LED lighting
- Increased use of automated lighting
- Increased EE office/ IT equipment and air conditioning units

Energy Efficient measures improperly implemented may give rise to energy poverty in circumstances where lower income bands of society are locked out of EE technology, thus driven to be higher consumers to meet basic needs. Government will be tackling this vicious circle that expands the difference between higher and lower income households, and will ensure that vulnerable classes of society are well taken care off so they can reap the benefit of higher efficiency, lower consumption and hence lower cost. Grant funding should be capped on an annual basis and increased over time as necessary to ensure the maximum switch possible by 2030. Alternatively, grants could be implemented through the use of discount vouchers for EE appliances until these achieve parity with the inefficient appliances.

Through schemes for deep renovation of buildings of a historical value and privately-owned buildings located in urban conservation areas and/or scheduled as grade 1 or grade 2 can benefit from sustainable renovation and restoration works. Besides preserving the aesthetic and historical value of such buildings, this policy initiative could feature retrofitted green initiatives, enhancing EE (e.g. installation of double glazing on existing original façade timber fixtures or roof insulation).

The inclusion of sustainable building materials is also being recommended.

In addition to the technology specific initiatives outlined above, broader policies regarding education and awareness-raising of energy usage in household will be supported, building on

similar examples such as the roll out of smart meters across the country, or the provision of energy saving bulbs. For example, awareness raising campaigns and voluntary energy audits could be supported through providing local authorities with financial support.

The set of measures outlined above will be incentivised by the policy initiatives set out in the National Energy Climate Plan by:

- Providing greater access to financial support schemes for those disclosing verified energy savings;
- A requirement that non-SMEs with an annual consumption exceeding 800 tonnes of oil equivalent (toe) to implement an ISO certified management system;
- Regulation 10 of LN 196 of 2014 makes it mandatory for, and the responsibility of, non-SMEs registered and doing business in Malta to carry out energy audits to the established quality level and frequency;
- Financial support for business clusters on EE;
- Grants to help SMEs carry out energy audits of their premises/ processes/ plants/ transport fleet; and
- Regular training sessions and seminars.

The Government intends to continue promoting investment towards further uptake of energy efficiency measures in buildings and equipment used for industrial and services operations in Malta.

Policy measures such as EE certificates for buildings such as offices and hotels will be further assessed, to further improve their energy performance.

4.1.6 Opportunities and constraints of implementing the Paris Agreement

The challenges, that Malta faces in reducing its Climate Change emissions include:

- the specific characteristics of Malta's energy system and market, such as its small nature, the existence of a single electricity distributor/supplier, the absence of natural gas and district heating and cooling networks, and the small size and number of suppliers and market players – which, taken together, limit the range of measures available to meet energy savings obligations;
- its specific geographic, environmental and spatial constraints (limited land area and high population density) together with its rich but fragile natural environment and climatic conditions, which lead it to not having an array of options for modal shifts to reduce carbon emissions, whilst diseconomies of scale also hinder resorting to alternative technologies;

- its limited mitigation potential, arising from Malta's service-based economy, specifically in the transport and agricultural sectors as well as the legacy effect in solid waste disposal, have resultant high mitigation costs coupled with significant socio-economic considerations. A thriving economy that would have partially decoupled GDP from emissions would still have residual level-off coupling, which in turn drives up emissions.

The Low Carbon Development Strategy is based on a number of assumptions that are inherent in the underlying modelling of the strategy, given also the long-term projections being considered till 2050. Various other developments in the coming years could impact (negatively or positively) the achievement of this LCDS. However, the strategy will provide further opportunities to update with additional data as it becomes available in some of the faster moving areas, and as new situations emerge, including in a post-pandemic world. Data that will serve as a baseline to exploring other means to reach the ambitious targets set by the Paris Agreement.

4.2 The Sustainable Development Goals

4.2.1 Country statement of commitment to the SDGs

Malta recognises the 2030 Agenda as the most comprehensive global development plan owing to its universal and transformative nature⁷.

The Maltese Government adopted the 'Sustainable Development Act' in 2012, prior to the establishment of the '2030 Agenda for Sustainable Development'. The 'Sustainable Development Act 2012' provided a legislative framework which mandated Government to mainstream sustainable development in its policies.

The endorsement of Sustainable Development in Malta may be traced back to 1992 as outlined below. One has to read the timeline regarding the changes in the legislative framework and policies, taking into considering the broader dynamic global development that lead to Agenda 2030 and the local challenging context of a small island state with limited natural resources and a high population density.

- The notion of Sustainable Development was first introduced in Malta in the Development Planning Act of 1992.

The Development Planning Act established an Authority and gave it powers to promote proper planning and sustainable development of public and private land and sea. Since 1992, the Act has been amended various times and has been supplemented by a number of subsidiary laws, development plans and planning policies.

- In 2001, the Environment Protection Act established the National Commission for Sustainable Development, which was set up in 2002.

The National Commission was entrusted with the role of advocating on national sustainable development across all sectors; reviewing progress in the achievement of sustainable development; and achieving further progress.

- In 2007, Cabinet endorsed the Sustainable Development Strategy for the Maltese Islands 2007-2016 as proposed by the National Commission.

The Malta Strategy builds upon the Sustainable Development Strategy of the EU and the Mediterranean Strategy for Sustainable Development. The Malta Strategy identifies 20 priority areas, all of which are accompanied by targets and indicators. The Strategy provides a framework for a systematic approach within an institutionalised process of consultation and consensus building. It guides policymakers on different sectors.

- The Sustainable Development Act adopted in 2012, provided a legislative framework mandating Government to mainstream sustainable development in its policies.

⁷ https://sustainabledevelopment.un.org/content/documents/20203Malta_VNR_Final.pdf

The Act also proposes the setting up of a Sustainable Development Network; a Sustainable Development Focal Point in every Government department, agency or entity; as well as the setting up of a Guardian of Future Generations. A board of 4 members that has the aim of safeguarding inter-generational and intra-generational sustainable development in Malta.

Article 14 of the Sustainable Development Act of Malta requires Parliament to annually hold a discussion without a vote on a Sustainable Development Annual Report which is tabled by the Minister concerned. The Annual Sustainable Development Report highlights national commitments taken in favour of sustainable development.

- The Strategic Plan for the Environment and Development (SPED) was approved by Parliament in July 2015 as the official document that addresses spatial issues for the Maltese Islands in the coming years.

It regulates the sustainable management of land and sea resources covering the whole territory and territorial waters of the Maltese Islands, and sets out objectives in relation to the sustainable development and use of land and sea space. The Plan offers a shift from traditional land use planning to a more holistic spatial planning approach.

- The Development Planning Act of 2016 regulates the provision for sustainable planning and management of spatial development, for the establishment of an authority with powers to that effect, and for all associated matters.

The Act places a duty on the Government to enhance the quality of life for the benefit of present and future generations, without compromising the ability of future generations to meet their own needs, through a comprehensive sustainable land use planning system.

- In September 2015, Malta became a signatory to the Agenda 2030 and its 17 Sustainable Development Goals.
- In 2018, Malta submitted its first Voluntary National Review (VNR) to the HLPF (High Level Political Forum). It covered all 17 SDGs, with a focus on those goals considered to be of more relevance for Malta. The VNR provided an overview of Malta's policies in the field of sustainable development and information on ways through which Malta is increasing SDG ownership through a whole-of-government approach.⁵⁶ The data for the VNR was provided by the National Statistics Office of Malta (NSO).
- In 2018 the Maltese Government embarked on a process to develop a new Sustainable Development Strategy and Action Plan with a horizon of up to 2050 referred to as the 'Vision Document'. The 'Vision' aligns with the 2030 Agenda for Sustainable development and the Monitoring of the SDGs in Malta and it is structured and designed upon the three dimensions of sustainable development – the economic, environment and social pillars. Figure 4.1 identifies the focus for each pillar

The objectives of the 'Vision' 2050 will be based on more efficient resource utilisation and the long-term management of, and investment in human, social and material resources, which is particularly relevant for Malta's profile. It focuses strongly on prevention, rather than mitigation. The Vision calls for the mainstreaming of sustainable development policies and measures and acknowledges that further action at national level is needed to ensure the long-term protection of the critical resources that constitute the basis of sustainable development.

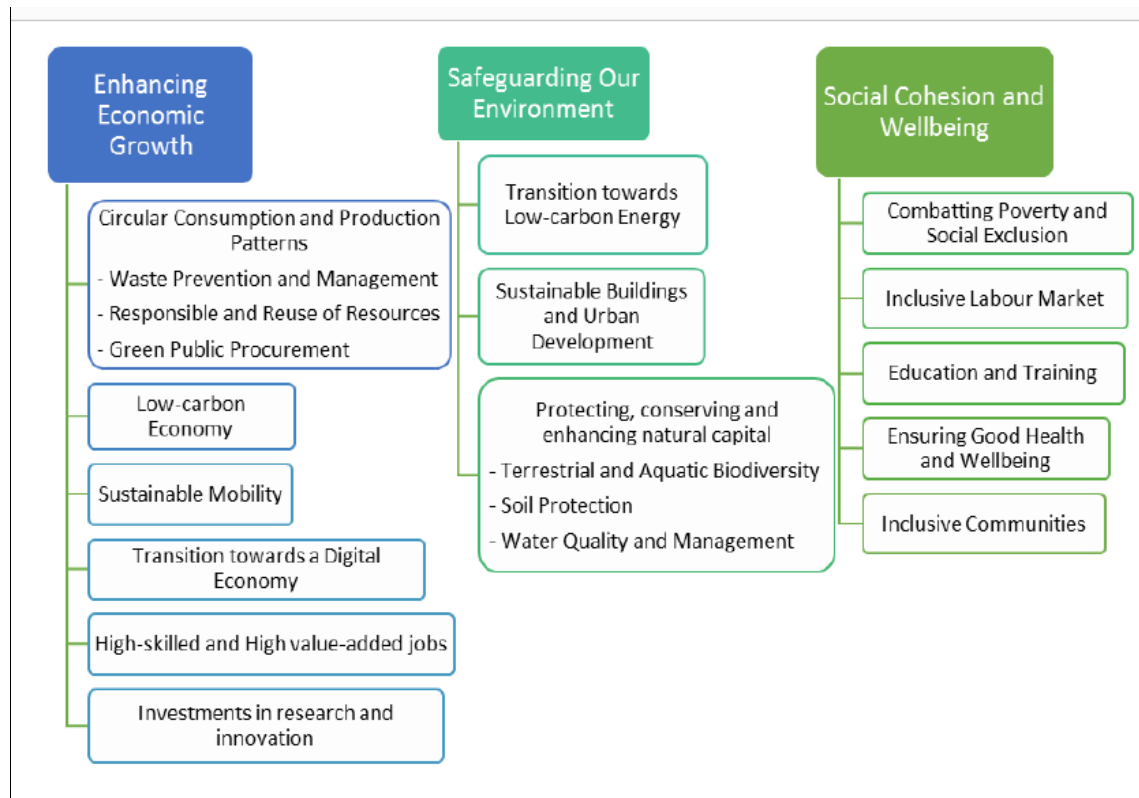


Figure 4.1

This 'Vision' is designed on the following key normative governance:

- Long-term action to pursue intra and intergenerational equality
- Integration of economic, social and environmental policies across and between different level of Governance.
- Participation of stakeholders in the decision-making process
- Reflexive processes based on continuous evaluation and policy learning cycles.

The 'Vision' states that the implementation of the Strategy depends on:

- High Level Political Commitment
- A clear assignment of responsibilities across government
- Inter-Ministerial coordination
- Local Councils' engagement
- Stakeholder engagement
- Public engagement and awareness

The 'Vision' also states that the sustainability of finances is crucial for achieving the goals and identifies the following principles underlying the economic models through which the Strategy will operate:

- Sustainable consumption and production models in order to achieve a circular economy
- The transition towards a low-carbon-emission economy
- Sustainable mobility
- The transition towards a digital economy
- The creation of high-skilled and high valued added jobs
- Increased investments in research and innovation.

The following table outlines the future themes and principles for 2050, as listed in the 'Vision' directly related to SDG9 and SDG11 as the main SDGs under review in Beacon Project Outcome 2.

Table 4.1

THEME	PRINCIPLES	SDG 9 Industry Innovation and Infrastructure	SDG11 Sustainable Cities and Communities
Enhancing Economic Growth	Circular Consumption and production Patterns		
Enhancing Economic Growth	Transition towards a low-carbon emission economy		
Enhancing Economic Growth	Sustainable Mobility		
Enhancing Economic Growth	Transition towards a digital economy		
Enhancing Economic Growth	Creation of more high-skilled and high value-added jobs		
Enhancing Economic Growth	Increased investment in research and innovation		
Safeguarding our environment	Transition towards low-carbon energy		
Safeguarding our environment	Sustainable building and urban development		
Social cohesion and wellbeing	Combating poverty and social exclusion		
Social cohesion and wellbeing	Fair and inclusive labour market		
Social cohesion and wellbeing	High quality education and training		
Social cohesion and wellbeing	Building safe and integrated communities		

The Sustainable Development Directorate within the Ministry for the Environment, Sustainable Development and Climate Change (MESDC) is the Competent Authority responsible for the implementation of the Sustainable Development Act. Amongst other responsibilities, the Sustainable Development Directorate is to ensure the development and implementation of Malta's Sustainable Development Strategy and to revise the said Strategy in line with national, EU and international developments.

The Maltese Government is committed to:

- provide opportunities for meaningful participation and work in partnership with key stakeholders on sector-specific issues through public and sectoral consultations through the existing stakeholder engagement mechanisms.
- Continue supporting organisations to make their own contributions in achieving the Goals of the Vision.
- Increase public awareness to encourage more individuals and organisations to get involved in helping to achieve the Goals.

In view of this vision and approach as outlined above a Focal Point Network under the responsibility of MESDC has been set-up as a coordinating mechanism for sustainable development policy in Malta.

The Network involves the participation of a senior representative from each Government Ministry. The Network meets periodically to share information on progress or developments related to sustainable development in Malta. The Network serves also to create a mechanism of ownership across Government, ensuring that all Government Ministries are informed of developments in relation to sustainable development in general, and the 2030 Agenda in particular. It offers a forum for the exchange of information and is a much-needed network given the interlinkages that exist among the 17 SDGs and their associated targets, which so often overlap in the work of the respective Ministries. In this regard, the Network is a catalyst for closer cooperation among Government Ministries, leading to increased harmonisation across the public sector to move towards more sustainable development practices and filling in gaps.

Moreover, the Malta Development Bank (MDB) was set up in 2017 to support sustainable productive and viable operations suffering from market failures or where the market is unable or unwilling to accommodate such activities. This is particularly relevant to address SDG 9 and SDG 11 since the MDB is also engaged in:

- sustaining competitiveness by investment in innovation, skills, knowledge-generation and technology;
- supporting infrastructure development of regional or national importance;
- supporting clean energy and energy efficiency projects, sustainable transport, and water resources (Greener Economy)

- o supporting socially-oriented initiatives and social enterprises operating community services in such sectors as education, health, and housing (Community Services)

The entity responsible to manage the data to track the progress in addressing the SDGs is the National Statistics Office (NSO). 45% of Malta-related statistics are produced in line, or similar, to the methodologies prepared by the UN Statistics Division, international organisations and custodian agencies in charge of the monitoring of the SDGs. 18% of SDIs are covered with other statistical information that can be used as proxies to the official SDI framework. 37% of the SDIs framework are not addressed, directly or indirectly, with existing data.

Chart 4.1 below indicates the data available for the SDIs for all the SDGs. The data for SDGs 9 and 11 are highlighted.

Chart 4.1

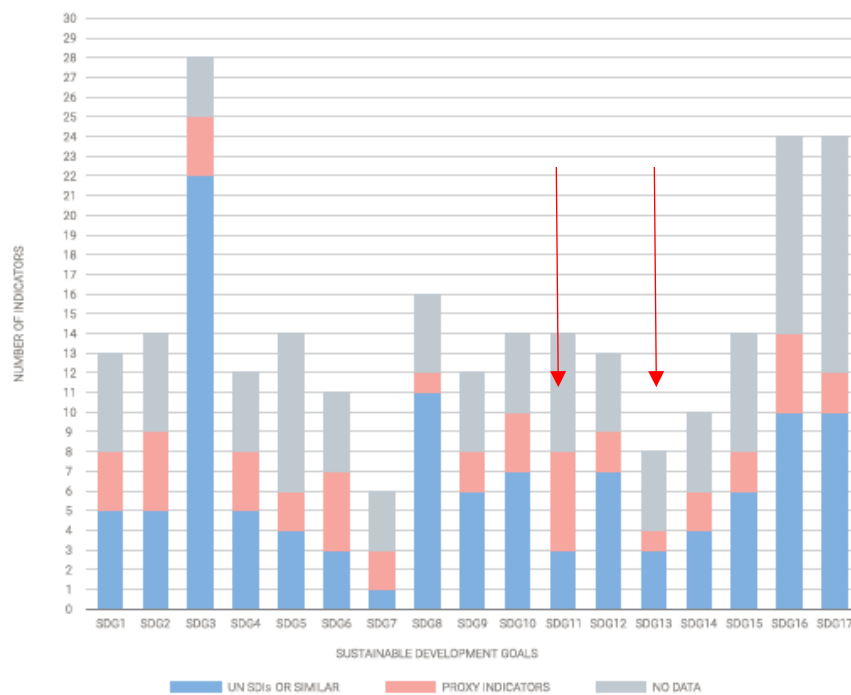


Chart D: Number of UN SDIs presented in line with the UN SDI methodologies, number of UN SDIs presented replaced by proxy indicators, and number of UN SDIs for which data is not available per SDG; NSO]

4.2.2 Reflections on Goal 9 – nationally and in coastal zones if applicable with a focus on opportunities and constraints of meeting the goal’s targets

SDG 9 looks at sustainable industrialization through innovation and resilient infrastructure that promotes inclusion.

The document publishing the statistical development of Malta for 2021 relates economic growth, social development and climate action with investments in infrastructure, sustainable industrial development and technological progress.

One of the targets of SDG 9 is to develop quality, reliable, sustainable, and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all. Transborder infrastructure development in a small island state as Malta is best captured by passenger and freight volumes.

- In 2019 the total cruise passenger traffic was 900,387, an increase of 83.3% from the total cruise passenger traffic in 2010.
- Sea traffic between Malta and Gozo has also increased by 46.8%, between 2010 and 2019.
- Passenger movement by air increased by 121.5% in the same period.
- The tonnage of freight cargo unloaded in Malta in 2019 was 2.6% less than the cargo unloaded in 2010.
- The cargo loaded in Malta decreased by 45.2% between 2010 and 2019.
- Mail and cargo movement by air increased 44.3% and 6.6% respectively in the same period.
- The Government expenditure on road infrastructure in 2010 amounted to approximately 25 million euro. By 2019, the amount increased to nearly 121.5 million euro.

The targets of SDG 9 seek to promote inclusive and sustainable industrialisation by significantly raising the industry's share of employment and gross domestic product.

Sustainable industry in developed countries is expecting to reduce labour in manufacturing as part of cost-cutting measures, to promote more capital-intensive industries, or a shift to services industries. In fact, the contribution of manufacturing industry in total employment in Malta has declined by 4.1 percentage points, from 15.2% in 2010 to 11.1% in 2019.

One cannot ignore also that manufacturing industries are generally improving their emission intensity as countries move to higher levels of industrialisation, which are further through structural changes, greener technologies, and product diversification in manufacturing. In 2010, the ratio of CO₂ emissions (in Kg of CO₂) per 1 Euro of output was 0.34. By 2019, the ratio decreased by 61.8% for a ratio of 0.13, meaning that less CO₂ is being emitted for 1 Euro of output.

In 2017, Malta Enterprise and the Energy and Water Agency launched an initiative to assist businesses with an annual electricity consumption in the range of 10,000-75,000KWh to carry

out an Energy Audit. Beneficiaries receive support to identify solutions for better energy efficiency, to reduce operational costs through energy savings. Furthermore, the Energy and Water Agency and the Malta Business Bureau have launched a scheme encouraging enterprises to enter into a voluntary agreement to implement various energy efficient measures.

Another initiative to promote sustainable development among enterprises is the establishment of the Sustainable Enterprise Award, which was set up in 2015. The Award rewards Maltese enterprises, in particular micro, small, and medium-sized enterprises (MSMEs), or foreign enterprises operating in Malta, for their efforts to change their practices, with the aim of increasing economic, social, and environmental sustainability.

Moreover, industrial development generally entails a structural transition from resource-based and low- technology activities to Medium and High-Tech (MHT) activities. For Malta, in 2019 the proportion was that of 2.1%, a decrease of 3.9 percentage points from the proportion of 6% registered in 2010.

One of the aims of SDG 9 is to enhance scientific research by encouraging innovation and substantially increasing the number of research and development workers.

Since 2010, the number of researchers in Malta increased by 60.0% to a total of 939 in 2019. The percentage of GDP towards expenditure on research and development in 2019 amounted to 0.59%, similar to 0.59% registered in 2010. Moreover, the total yearly number of applications by Maltese inhabitants to protect their inventions in Europe, filed with the European Patent Office, has increased from 31 applications in 2010 to 65 applications in 2020.

The 'Vision' states that Government will continue to ensure that research is supported in strategically important areas that have impact for the economy and for society. This includes research that has direct relevance for the enterprise base, and meets the needs of society including improving the quality of our public services; protecting the environment, our natural resources and the climate; and ensuring food security and sustainability of energy supply.

Government will further simplify and streamline support and funding opportunities and make them more easily accessible to encourage greater engagement in research and innovation by both Maltese and foreign owned enterprises, including SMEs and largescale enterprises.

The areas of Research developed during the past years have focused in particular on key themes to address the critical issues arising in the Maltese islands namely: Waste and resources; Coastal vulnerabilities; Transportation and Infrastructure.

In this regard research at the University of Malta has focused on action which can directly address short term and longer term solutions to strengthen sustainability within the

construction sector in particular whilst also addressing the resilience of the built environment. This has been achieved through key innovation including:

- Development of a Sustainability assessment tool adapted for the Mediterranean region for the assessment of buildings and Urban areas.
- Development of low impact materials with a high performance for the construction industry.
- The development of deconstruction and waste classification standards for the recycling of waste for construction applications, therefore reducing on the consumption of new resources whilst reducing on the volumes of C&D and Excavation waste generated.
- Engineered materials based on waste including recycled aggregate, engineered blocks and reconstituted products.
- The development of concrete based on supplementary cementitious materials and geopolymer concrete with a lower carbon footprint.
- The development of high performance materials for highly aggressive environments including coastal environments, for coastal infrastructure.
- The development of structural health and durability monitoring systems for smart infrastructures including harbour structures, breakwaters, reservoirs, bridges.
- Innovation in the repair and strengthening of structures exposed to highly aggressive environments.
- The durability assessment of structures and life-time performance assessment with a view to Climate change.
- Heritage structures on the coast vulnerable to climate change.

These areas also promote a green economy and green jobs whilst relying on the need of new skills in the industry.

The assessment of SDG 9 is reflected in Table 4.2 below. The targets related to SDG 9, for which statistics are not available, are not listed in the table and therefore a complete picture of Malta's implementation towards the achievement of SDG 9 is not possible⁸.

⁸ <https://nso.gov.mt/en/nso/Media/Salient-Points-of-Publications/Documents/2021/SDG%202021/SDG-2021.pdf>

Table 4.2

TARGET NO.	TARGET	DATA USED	ASSESSMENT
9.1	Develop quality, reliable, sustainable and resilient infrastructure, including regional and transborder infrastructure, to support economic development and human well-being, with a focus on affordable and equitable access for all	Tonnage of cargo unloaded and loaded in Malta	Worsening
		Mail and cargo movement by air	Improvement
		Passenger movements by air	Improvement
		Total cruise passenger traffic	Improvement
		Number of passengers travelling between Malta and Gozo	Improvement
		Government expenditure on road infrastructure	Improvement
9.2	Promote inclusive and sustainable industrialization and, by 2030, significantly raise industry's share of employment and gross domestic product, in line with national circumstances, and double its share in least developed countries	Manufacturing value added as a proportion of GDP	Worsening
		Manufacturing employment as a proportion of total employment	Worsening
9.4	By 2030, upgrade infrastructure and retrofit industries to make them sustainable, with increased resource-use efficiency and greater adoption of clean and environmentally sound technologies and industrial processes, with all countries taking action in accordance with their respective capabilities	Kg of CO ₂ emissions per Euro	Improvement
9.5	Enhance scientific research, upgrade the technological capabilities of industrial sectors in all countries, in particular developing countries, including, by 2030, encouraging innovation and substantially increasing the number of research and development workers per 1 million people and public and private research and development spending	Total expenditure on research and development	Improvement
		Percentage of GDP in research and development expenditure	No Change
		Number of researchers	Improvement
		Researchers per million inhabitants	Improvement
		Applications filed with the European Patent Office	Improvement
9.b.1	Support domestic technology development, research and innovation in developing countries, including by ensuring a conducive policy environment for, inter alia, industrial diversification and value addition to commodities	Proportion of medium and high-tech industry value added in total value added	Worsening

4.2.3 Reflections on Goal 11 - nationally and in coastal zones if applicable with a focus on Opportunities and constraints of meeting the goal's targets

SDG 11 aims to renew and plan cities and other human settlements so that they offer opportunities for all, while improving resource use and reducing environmental impacts. Sustainable urban development requires urban planning, transport systems, sanitation and waste management, investment in societal networking, and capacity-building. Through a sustainable approach, urban areas should be designed as spaces where all citizens live a decent quality of life and form part of the city's productive dynamic, creating shared prosperity and social stability without harming the environment⁹.

The urban population for Malta is taken to be the inhabitants of cities, towns and suburbs. In 2019, the urban population was 501,872—97.5% of the entire population residing in Malta. Since 2010, the urban population increased by 24.2%, while the percentage of urban population from total population remained approximately 97%

The percentage of developed land and the developed land per capita are used as indicators to monitor land consumption in relation to population growth. In 2019, the percentage of developed land in Malta was that of 33.6%; an increase from 24.7% in 2000. The developed land in 2019 stood at 206 m² per capita; approximately 7 m² per capita more than the developed land per capita estimated in 2000, and 27 m² less than the developed land per capita estimated in 2010. The percentage of artificial land in Malta was the highest in the European Union, whilst the settlement area per capita was the lowest.

Studies carried out by the Planning Authority [the only planning agency in Malta] in 2010 and 2016 estimate that in the period 2010–2016, the amount of vacant land available for residential development decreased by 19.1%. Taking into consideration the total population of Malta in 2010 and 2016, the vacant land earmarked for residential development decreased from 7.45 m² per capita in 2010 to 5.43 m² per capita in 2016. In 2016, approximately 63% of the uncommitted footprint was reserved for residential development while the remaining percentage was allocated for various other uses, some of which however also included a residential component.

The percentage of developed land in Malta is increasing while the developed land per capita is decreasing. This could mean either that land use for new development is not in sync with real development needs to cater for population growth, or the height of buildings in Malta is increasing and therefore land take-up is reduced. Increasing the development zone boundaries to allow for more development in Malta is not sustainable given the geographical limitations of being an island. Also, increasing height of buildings for less land take-up may cause overdevelopment and add strain on existing infrastructure. Sustainable urbanisation needs to take into account all these elements¹⁰.

9

https://meae.gov.mt/en/Public_Consultations/MSDEC/Documents/Malta's%20Sustainable%20Development%20Vision%20for%202050.pdf

¹⁰ [ibid]

https://meae.gov.mt/en/Public_Consultations/MSDEC/Documents/Malta's%20Sustainable%20Development%20Vision%20for%202050.pdf

One of the challenges of urbanisation globally has been the provision of adequate housing that people can afford. The UN-Habitat City Prosperity Initiative reveals that inadequate housing has negative effects on several other dimensions of urban prosperity. Urban contexts with below average housing conditions experience poorer equity and inclusion, reduced urban safety and livelihood opportunities, and have neglected connectivity and provision of public space. Inadequate housing thus remains a global urban sustainability challenge but also a development opportunity

Overcrowding in Malta is measured by means of the EU Statistics on Income and Living Conditions (SILC) Survey. A person is considered to be living in an overcrowded household if the house does not have at least one room for the entire household as well as a room for a couple, for each single person above 18, for a pair of teenagers (12 to 17 years of age) of the same sex, for each teenager of different sex and for a pair of children (under 12 years of age). In 2019, the overcrowding rate in Malta stood at 3.7%, 0.3 percentage points less than the overcrowding rate in 2010.

The EU-SILC also measures the percentage of persons in the total population who are materially deprived for the 'housing' dimension, based on the dwelling problems: (a) leaking roof / damp walls / floors / foundation or rot in window frames; (b) accommodation too dark; (c) no bath/shower; (d) no indoor flushing toilet for sole use of the household. In 2019, 15.2% of Maltese households were considered to be materially deprived from a housing dimension on one or more of the four criteria mentioned above. Also, 10% of persons indicated that their dwelling was too dark, and 7.6% indicated that they lived in houses with moisture damages. Since 2010, the rate of the population living in dwellings without sufficient natural light increased by 2.6 percentage points, however the rate of the population considered to be materially deprived (housing) and the rate of the population living in dwellings with moisture damages decreased by 1.7 percentage points and 4.5 percentage points respectively¹¹.

An important aspect in urban areas is transportation, since the transportation system is a critical enabler of economic activities and social inclusion. The overarching aim of SDG 11 target is to move towards easing the reliance on the private means of transportation, improving access to areas having a high proportion of transport disadvantaged groups and reducing the need for mobility, both in terms of the number of trips and the distances travelled. The target also aims to address the 'externalities' associated with transport in terms of greenhouse gas emissions, air quality, traffic congestion and road traffic accidents.

In Malta, all buses used by the public transport system are of the low floor type, making these vehicles fully accessible to persons with mobility impairments. Moreover, all buses have specifically designated seating for persons with mobility impairments, pregnant women, the elderly and persons carrying young children.

Moreover, as from October 2022 the 'Government Free Travel Scheme' which to date include children under the age of 14, adolescents aged between 14 and 20, students aged 21 years and above, commuters aged 70 and above, and disabled persons, will be extended to the whole population.

¹¹ [ibid]

https://meae.gov.mt/en/Public_Consultations/MSDEC/Documents/Malta's%20Sustainable%20Development%20Vision%20for%202050.pdf

In the period 2010–2019, the use of public transport in Malta increased by 83.6%, however, the number of newly licensed passenger cars (new and used) also increased by 38.8% in the same period. During the period 2010–2019, the ratio between newly licensed cars and passenger cars scrapped or exported was generally always in favour of newly licensed cars.

The strategic goals which aim to improve transport accessibility and mobility in Malta are:

- Easy access to daily facilities: there is a need to work in parallel with spatial planning strategies in order to make walking the obvious choice for short trips to daily facilities and to increase cycling within urban areas for short trips.
- Convenient and reliable journey times: This concerns travelling to locations which are not normally within walking distance, such as work, hospitals, and occasional leisure. Congestion must be reduced through the increased use of other transportation modes and by exploring whether new forms of transportation are required to achieve this outcome.
- Ensuring equitable and sustainable approach to all transport modes: Malta must move towards facilitating inter-modal travel. Walking and cycling need to form an integral part of urban mobility and infrastructure design. Public Transport needs to be prioritised so that it is not subject to general levels of congestion.
- Management of freight and urban logistics: there is potential to improve urban logistics operations and services.

Measures are being taken to encourage the use of scheduled public transport. These include the launch of a mobile application and an upgraded Journey Planner

As from 1st January 2016, following training, car drivers can drive selected motorcycles without the need of a separate licence. The measure aims to encourage drivers to use smaller and more fuel-efficient modes of transport. Since the introduction of the measure, 1,716 drivers have been certified, 940 of which have registered a motorcycle in this category.

Infrastructure project interventions are currently in process and others have been completed with the aim of addressing traffic congestion by addressing bottlenecks and using tidal traffic systems.

The fatalities caused by road traffic accidents, including drivers and passengers of motorised vehicles and pedal cycles as well as pedestrians increased from a rate of 3.0 per 100,000 population in the period 2008–2010 to 3.7 per 100,000 population in the period 2017–2019. The Road Safety Strategy, published in 2014, sets out a 10-year plan for safer land transport systems with the aim of achieving 50% reduction in fatalities, 30% reduction in grievous injuries, and 20% reduction in slight injuries by 2024. The Road Safety Strategy embraces the basic concepts of Safety through Engineering.

It is important to note that the strategic noise mapping and the population exposure assessment carried out by the Environment and Resources Authority (ERA) indicate that the predominant source of noise exposure across Malta is from road traffic sources and this can also be linked to the steady increase in the number of daily registered vehicles on the roads. The results of the population exposure analysis of major roads noise mapping for Malta carried out in 2016 show that the exposure to noise from major roads has increased since the assessment in 2011.

Apart from noise pollution, urban dwellers are also affected by air pollution. Emissions from the combustion of gasoline, oil, diesel fuel or wood produce much of the PM_{2.5} as well as a significant proportion of PM₁₀ pollution found in the atmosphere. PM₁₀ is also emitted from non-exhaust traffic-related sources such as road abrasion, tyre and break wear, construction sites, landfills, and industrial sources. Furthermore, due to Malta's geographical location, PM₁₀ concentrations also include natural contributions such as Saharan dust and sea salt.

The European Union has developed an extensive body of legislation which establishes health-based standards and objectives for a number of pollutants present in the air, including for PM_{2.5} and PM₁₀. The standards and objectives set for these two pollutants are: a yearly average of 25 µg/m³ for PM_{2.5} and a yearly average of 40 µg/m³ for PM₁₀. Moreover, the World Health Organisation (WHO) guideline values, which are set for the protection of human health, are generally stricter than the comparable politically agreed EU standards. The limits set by WHO are a yearly average of 10 µg/m³ for PM_{2.5} and a yearly average of 20 µg/m³ for PM₁₀.

The population weighted particulate matter annual average refers to the annual mean levels of PM in cities—that is the annual mean concentrations compared to the population within a city exposed to it. Annual mean concentrations considered for the calculation of the population weighted particulate matter annual average were obtained from the Environment and Resources Authority (ERA) urban background monitoring stations in Attard and Żejtun. In 2019, the population weighted PM_{2.5} and PM₁₀ annual averages in Malta were 12.1 µg/m³ and 29.4 µg/m³ respectively. Both levels were slightly lower than the population weighted annual average calculated in 2010. During the period 2010–2019, the highest population weighted annual average level for PM_{2.5} was that of 14.2 µg/m³ measured in 2015, while the lowest was 10.4 µg/m³ in 2012. During the same period, the highest population weighted annual average for PM₁₀ registered was 32.6 µg/m³ in 2010 and the lowest level was 26.2 µg/m³ in 2017.

As urbanisation and population growth will continue, it is expected that municipal solid waste generation will increase. Moreover, the higher the income level, the greater the amount of solid waste produced. In Malta, the municipal waste generated per capita in 2019 amounted to 679 Kg, an increase of 78 Kg per capita from the 601 Kg per capita measured in 2010.

In Malta, 100% of the municipal waste generated is collected by means of various services catering for recyclable waste, organic waste, waste electrical and electronic equipment (WEEE), batteries, bulky waste and residual waste—all this waste is eventually treated. In 2019, 352,018 tonnes of municipal waste were treated; 47.2% more than the waste treated in 2010. From all the waste treated, only a small proportion was recovered through material recycling, composting and digestion and energy recovery. In 2010, recovery amounted to 5.6% of the municipal waste treated while in 2019 the share of recovery stood at 8.9% .

Within the context of resource scarcity, land-use and rapid demographic shifts, the building industry has a key responsibility to provide essential infrastructure and urban solutions that meet basic human needs, support wellbeing, the movement of people and ideas, and deliver critical services, assets and goods

The 'Vision' states that the Government role in sustainable buildings is crucial and central. Beyond providing the enabling regulatory framework and strategic plans for the sector, Government will:

- Further encourage public-private partnerships models focusing on research and experimental developments across the building's lifecycle – from its design to its operations stage.
- Establish rewards and penalties to enable the sector to deliver sustainable infrastructure.
- Provide innovative financing tools, including fiscal incentives and subsidies, that enable sustainable investments.
- Provide regular building audits to measure performance, identify improvement opportunities, and establish implementation priorities.

The 'Vision' outlines the underlying principles of how the targets will be addressed. No specific details on the strategy to reach these targets are provided.

So far the following policies and practices has been introduced: New buildings are to be built in line with minimum energy performance requirements, depending on the type of buildings. Renovated buildings will also follow the stipulated energy efficiency levels. Energy consuming services within buildings will comply to a set of standards, to ensure a minimum level of energy efficiency. A certificate has to be issued for verification. Heating and cooling equipment within buildings shall be periodically inspected to ensure that the equipment operates at optimum efficiency. An Energy Performance Certificate is issued for newly built, sold or rented buildings, and a national database of such certificates is kept.

One of the targets of SDG 11 seeks the strengthening of efforts to protect and safeguard the world's cultural and natural heritage. The financial efforts and actions made by public authorities alone or in partnership with civil society organisations and the private sector, to protect and safeguard Malta's cultural and natural heritage, have a direct impact in making human settlements more sustainable. This is even more so when these heritage assets generate employment and income as tourist attractions. An indicator about the extent of the efforts that are undertaken to protect Malta's cultural and natural heritage is the percentage of government spending on the protection of biodiversity and landscape and on cultural services.

In 2010, Government expenditure on the protection of biodiversity and landscape and on cultural services amounted to around €43 and €87 per capita, respectively. By 2019, expenditure per capita on the protection of biodiversity and landscape increased by 89.8% to around €81 per capita, and expenditure on cultural services increased by 110.2% to €183 per capita.

The strategy to protect and safeguard cultural heritage is carried out by:

- Identifying, designating, and managing areas, buildings, structures, sites, spaces, and species for protection and appreciation;
- Safeguarding protected areas;
- Re-appraising the value of the character, amenity, and distinctiveness of designated areas and site for their built heritage value;

- Restoration Grant Scheme for Grade 1 or Grade 2 Scheduled Buildings within Urban Conservation.

The implementation of this strategy is under the responsibility of the Planning Authority.

Safety is the foundation of any thriving neighbourhood and community. The EU-SILC also shows that in 2019, 13.6% of Malta's population had the perception of living in an area with crime, violence or vandalism; an increase from the percentage registered in 2010. The concept of 'fear of crime' is different from the prevalence of crime and it may even be largely independent from actual experience.

The perception of crime and the resulting fear of it is driven by a number of factors; such as the awareness of crime, public discussion, media exposure and personal circumstances. Yet, albeit the 'fear of crime' is based on perception, it is an important indicator about the health of neighbourhoods. A high level of fear can negatively influence well-being, heighten sensitivity on the ability to protect oneself, and thus lead to diminished trust and reduced contacts with the public and participation in public activities. This indicator is also linked to SDG 16 which deals with peace, justice and strong institutions.

The assessment of SDG 11 is reflected in Table xx below. The targets related to SDG 11, for which statistics are not available, are not listed in the table and therefore a complete picture of Malta's implementation towards the achievement of SDG 11 is not possible. In view of this, rather than assessing the implementations towards SDG 11 as a whole, the statistics in this chapter are being used to assess Malta's progress towards each individual target of SDG 11 for which statistics are available. The assessments are based on the trends identified in the period between the baseline, set in 2010 where possible, and 2019 or to the latest data available before 2019.

Table 4.3

TARGET NO.	TARGET	DATA USED	ASSESSMENT
11.1	By 2030, ensure access for all to adequate, safe and affordable housing and basic services and upgrade slums	Overcrowding rate in Malta	No Change
		Material deprivation - 'housing'	No Change
		Population living in an area with crime, violence or vandalism	Worsening
		Number of people living within dwellings in Malta and Gozo exposed to noise from major roads	Assessment not possible
		Population living in an area with noise pollution	No Change
11.2	By 2030, provide access to safe, affordable, accessible and sustainable transport systems for all, improving road safety, notably by expanding public transport, with special attention to the needs of those in vulnerable situations, women, children, persons with disabilities and older persons	Use of public transport	Improvement
		Number of newly licensed passenger cars (new and used)	Worsening
		Number of scrapped and exported passenger cars per year	Improvement
		People killed in road accidents	Worsening
11.3	By 2030, enhance inclusive and sustainable urbanization and capacity for participatory, integrated and sustainable human settlement planning and management in all countries	Percentage of developed land	Worsening
		Developed land per capita	Assessment not possible
		Vacant land per capita for residential development	Worsening
		Uncommitted footprint by zoning in 2016	Assessment not possible
11.4	Strengthen efforts to protect and safeguard the world's cultural and natural heritage	Government spending per capita on the protection of biodiversity and landscape, and on cultural services	Improvement
11.6	By 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management	Municipal waste generated per capita	Worsening
		Total municipal waste treated, and total municipal waste recovered	No Change
		Population weighted annual average of particulate matter PM _{2.5} and PM ₁₀ in Malta	No Change

4.2.1 Concluding statement on the SDGs

As a small island state, Malta is faced with inherent challenges and limitations. Malta has a population of almost half a million inhabitants ranking in the top 10 countries in terms of population density. Malta has come a long way in its development, and investment in human capital has compensated for the scarcity of natural resources. Malta’s natural resources are limited to limestone, salt, and arable land. Malta has few natural freshwater resources and relies heavily on desalination. Malta’s deep coastal waters and land spatial constraints pose significant challenges to alternative sources of energy such as wind farming, both offshore and on land. Malta is dependent on imported fossil oil for most of its energy needs, and this heavily impacts both the economy as well as the carbon footprint of the island. Malta’s high urban density also poses significant challenges to the transport sector. Embracing sustainable practices does not remain an option for Malta but a lifeline towards prosperity and livelihood¹².

Malta’s overall performance and country ranking in 2021 was of 33/165¹³.

The following tables summarises the state of the performance base indicators for SDG9 and SDG11.

SDG9 – Industry, Innovation and Infrastructure		Value	Year	Rating	Trend
Population using the internet (%)	85.8	2019	●	↑	
Mobile broadband subscriptions (per 100 population)	87.2	2019	●	↑	
Logistics Performance Index: Quality of trade and transport-related infrastructure (worst 1–5 best)	2.9	2018	●	↓	
The Times Higher Education Universities Ranking: Average score of top 3 universities (worst 0–100 best)	33.3	2021	●	●	
Scientific and technical journal articles (per 1,000 population)	1.0	2018	●	↑	
Expenditure on research and development (% of GDP)	0.6	2018	●	↓	
SDG11 – Sustainable Cities and Communities					
Proportion of urban population living in slums (%)	NA	NA	●	●	
Annual mean concentration of particulate matter of less than 2.5 microns in diameter (PM2.5) (µg/m ³)	13.3	2019	●	↑	
Access to improved water source, piped (% of urban population)	100.0	2017	●	↑	
Satisfaction with public transport (%)	64	2020	●	↑	

Figure 4.2

These indicators, are markers/pointers of the changes taking place and need to be considered within the broader context of other SDGs, the historical point in time when such data was collected without ignoring the impact of the pandemic and the geographical setting of the territory taken into consideration

¹² https://sustainabledevelopment.un.org/content/documents/20203Malta_VNR_Final.pdf

¹³ <https://dashboards.sdindex.org/chapters/executive-summary>

This geographical context of a small island state puts more pressure on the coastal zones. Considering the size of the islands, the whole archipelago can be considered as a coastal zone, yet within this limited territory the urban density and related activities including economic sectors as tourism, heavy industry and harbour activity which is the lifeline to mainland Europe are practically on the littoral. The geomorphological setting further pushes the intensive urbanisation to the accessible eastern and southern coastal zones of mainland Malta. Moreover, the Maltese Islands are rich in biodiversity, characterised by different types of habitats along the coast. This scenario solicits the importance of a long-term vision which needs to be complemented by rigorous frameworks that avoid fragmentation and bridges the gaps. The policies and practices put in place to address SDGs 9 and 11 may have not led to an overhaul the progress desired as these seem to aim for a long-term shift in approach and procedures. As the 'Vision' states, the road for sustainable living in Malta require the endorsement of the general public. Introducing new policies and practices within the broader framework of the SDGs as a call for an equitable community and better quality of life would allow the public to translate the SDGs from paper to conscious choices.

The Sendai Framework (2015-2030)

4.3.1 Country statement of commitment to the Sendai Framework

Malta is consistently ranked amongst the countries least exposed to disaster risk.

The Natural Disaster Risk Index of 2021 ranked Malta in the penultimate position describing the islands as a country with very low chances of disaster¹⁴. Malta occupied this rank since at least 2011. In a survey organized by World Economic Forum's Executive Opinion Survey (EOS) between May and September 2021 leaders of countries had to identify five risks that would pose critical threat to the country for the coming 2 years¹⁵. The perceived risks for Malta listed are:

- Human made environmental damage
- Collapse of a systemically important industry
- Proliferation of illicit economic activity
- Failure of Cybersecurity measure
- Asset bubble bursts in large economies

The concern related to the risks from Cyberattacks was stated also in 2018 by the then Minister for the Interior during the 2018 European Forum on Disaster Risk Reduction. The risks of the spread of vector diseases was the other risk referred to by the Malta representative.

The emphasis remains on the economic aspects and related activities. The potential risks posted by natural processes that may be further accentuated by the impact of climate change seems to be sidelined.

This perceived reality may be underpinning Malta's standpoint related to the Sendai framework. No public document published by the Maltese authorities refers specifically to Malta's commitment to the Sendai Framework. This approach is suggested even in the

¹⁴ Aleksandrova, M., Kaltenborn, M., Malerba, D., Mucke, P., Neuschäfer, O., Radtke, K., Strupat, C., Wiebe, N., Prütz, R., Balasko, S., & Weller, D. (2021). *World Risk Report 2021*. (). Bündnis Entwicklung Hilft Ruhr University Bochum – Institute for International Law of Peace and Armed Conflict (IFHV).

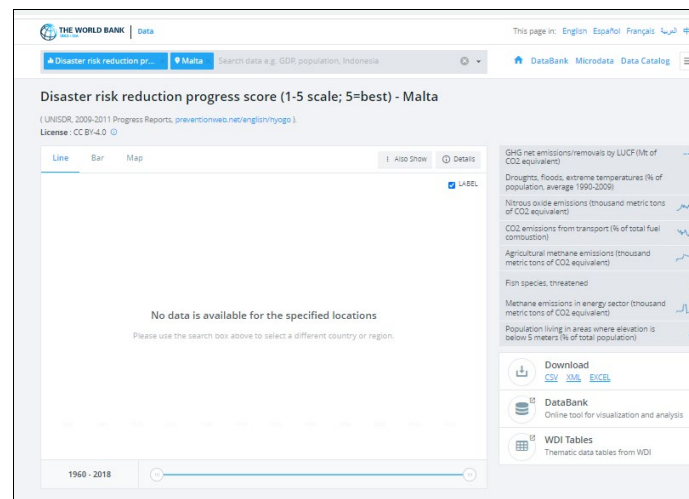
¹⁵ *The Global Risks Report 2022*. (2022). (). World Economic Forum. https://www3.weforum.org/docs/WEF_The_Global_Risks_Report_2022.pdf

following screenshot (accessed 14/2/2022) which indicates that the World Bank is missing the Disaster Risk Reduction Progress Score for Malta¹⁶ [Figure 4.3]

The perception that Malta is the 'safest place to be' is challenged in academic publications. Geoff et al (2018) argues that Malta is considered as a country of low risk only because the criteria adopted are misleading. These calculations fail to take into account significant historic increases in population and its seasonal variation because of tourism; they are based on inadequately researched and incomplete historical catalogues of damaging events; and they do not take the land area of the states concerned into consideration.

Galea¹⁷ (2007) states that notwithstanding the location of the Maltese islands in a seismic prone area a culture of seismic risk awareness has never been developed in the country. She argues that this could be related to the fact that no loss of life has ever been documented as a direct result of earthquake activity, and the last occurrence of serious damage to buildings was almost a century ago. The Maltese islands are 200km from the main Euro-African collision margin, and 100km west to the Malta Escarpment. Galea (2007) explains that the that heavy earthquake damage has not been experienced for almost a century has led to complacency in the construction industry as well as a lack of knowledge about the behaviour of local buildings during ground shaking. Borg et al have reviewed the vulnerability of buildings in Malta with respect to seismic action (Borg, 2008). Moreover, the building footprint is expanding rapidly onto areas of diverse geological typologies and topography whose site response effect is still unknown. The current building practices with unreinforced masonry in the Maltese islands need to be revised in order to include for a certain mandatory minimum level of protection against seismic action. This situation persists to date. The National Annex to the Structural Eurocodes including the National Annex to Eurocode 8 (Eurocode 8: Design of structures for earthquake resistance) is being prepared by the Eurocodes National Committee through the Building Industry Consultative Council.

Figure 4.3



¹⁶ Disaster risk reduction progress score. <https://data.worldbank.org/indicator/EN.CLC.DRSK.XQ?locations=MT%20Seismic%20history%20of%20the%20Maltese%20islands%20and%20considerations%20on%20seismic%20risk%20ANNALS%20OF%20GEOPHYSICS,%20VOL.%2050,%20N.%206,%20December%202007>

¹⁷ Galea, P. (2009). Seismic history of the Maltese islands and considerations on seismic risk. *Annals of Geophysics*, 50(6)10.4401/ag-3053

Academic research and progress that may feed DRR include:

- The establishment of a Seismic Monitoring and Research Group to access, process and communicate information relating to Mediterranean seismic activity to the Civil Protection Department, insurers and urban planners (Anon 2016b), so far this has not been translated into hazard reduction programmes.
- The Physical Oceanography Unit at the University of Malta began to work with a German research group associated with the University of Munich to form part of the European Lightning Network (LINET) to detect thunderstorms and other extreme weather conditions (Anon 2014b).
- In the SIMIT project, 20 scientists and engineers at the University of Malta (Faculty of Science and the Faculty for the Built Environment), have measured and mapped areas associated with greater vulnerability and therefore more pronounced risk associated with the Blue Clay deposits across the islands (Baldassini and Di Stefano 2016; Galea et al. no date; D'Amico et al. no date).
- In the SIMIT Tharsy Project at the University of Malta, the coastal vulnerability with respect to multi-hazard including earthquake and tsunami has been assessed.
- There has been some institutional progress in seismic-related DRR in the form of an earthquake preparedness exercise that was held in September 2015 (Anon 2015). Progress involves plans to respond to volcanic ash from Mount Etna should Malta International Airport and its traffic be adversely affected. This involved detailed modelling of potential ash events (Azzopardi et al. 2013—see Sect. 2.1.2) and greater awareness by the aviation and meteorological authorities of the need for accurate forecasting.
- The development of a Storm Water Action Plan (MRA 2013). Main problem areas were identified and priority was given to: (1) urban rather than rural areas; (2) dense population clusters; (3) commercial and tourist-related land uses; (4) proximity of public services and critical infrastructure (e.g. hospitals, fire and police stations); and (5) water supply issues.
- An INTERREG Project to Nearshore hazard monitoring and Early Warning System¹⁸

Progress in developing policies of DRR for other categories of hazard has been patchy, given also the almost non-existent historical catalogue¹⁹. The fact remains that until more detailed research is undertaken, it is not possible for the authorities to formulate a comprehensive plan to boost the resilience of the islands (Geoff et al, 2018)²⁰.

However, Malta is a member state in EUR-OPA - European and Mediterranean Major Hazards Agreement under the auspices of the Council of Europe. Malta is one of the member states participating in the EUR-OPA intercultural cities programme.

¹⁸ <https://keep.eu/projects/20510/Nearshore-hazard-monitoring-EN/>

¹⁹ https://www.um.edu.mt/library/oar/bitstream/123456789/84278/1/P017_Malta_proc.pdf

²⁰ <https://link.springer.com/content/pdf/10.1007/s11069-018-3227-x.pdf>

The Intercultural cities programme supports local and regional authorities worldwide in reviewing their policies through an intercultural and intersectional lens, and accompany them developing comprehensive intercultural strategies to help them manage diversity positively and realise the diversity advantage²¹. The programme also addresses disaster prevention and management in culturally diverse societies. This complex context raises fundamental questions not only about human life, human rights and human equality, but also about the relationship between public organisations, between different levels of government and between public and collective interest. It questions the very capacity of civil protection bodies to communicate and interact with all the people they are meant to serve.

The engagement of Malta in Intercultural cities reflects the new social realities that the Maltese communities are living due to the increase in immigration. A situation that is tangible and hence calls for an obvious demand for action. This contrasts the gaps in research and updates in the DRR for natural disasters and associated hazards which seem distant from the community and has led to the perception that 'Malta is one of the safest countries to be' as a result of the lack of historical registry. Moreover, results to an internet search with the key words 'Vulnerability Risk Assessment Malta' provides documents related to a national risk assessment carried out in 2018. The report²² refers to Malta's risks related to the financial sector with reference to money laundering and financial terrorism. This once again points at a specific reality that Malta as a small island state is facing, the importance given to financial services in the economic development of the country, reiterating the statement of the Minister of the interior as indicated above. The experience of the past decades are overshadowing the potential risks of natural disasters and associated hazard that have slipped the community collective memory for generations.

4.3.2 Brief statement on the country's meeting of the framework's four priorities

1. Priority 1. Understanding disaster risk

Policies and practices for disaster risk management should be based on an understanding of disaster risk in all its dimensions of vulnerability, capacity, exposure of persons and assets, hazard characteristics and the environment. As explained above Malta does not have a registry of the geophysical disasters that hit the islands.

Every 3 years the baseline studies related to assessing vulnerability, capacity and exposure as a means to assess disaster risks are reviewed. The National Risk Assessment identifies location-based disaster risk information but this is not disseminated. No education campaigns are held.

2. Priority 2. Strengthening disaster risk governance to manage disaster risk

The Civil Protection Act of Malta lays down the structure for the Civil Protection Department, including the task to carry out vulnerability and risk assessment task. The Critical Infrastructure Protection Directorate (CIPD) The Malta Critical Infrastructure Protection (CIP) Directorate (CIPD) operates within the portfolio of the Ministry for Home Affairs and National Security

²¹ <https://www.coe.int/en/web/interculturalcities/about>

²² https://finance.gov.mt/en/library/documents/result_of_the_nra_2018.pdf

(MHAS) in Malta. The CIPD coordinates and supports general emergency preparedness on a national level. The latter role entails the coordination of the emergency services, namely the Civil Protection Department, the Police, the Armed Forces of Malta, emergency, health and other related stakeholders, as may be required by specific national emergencies. This overall CIPD structure also includes designated sectoral forums, the Emergency Management Forum composed of the core emergency services, other specialist forums and the Government Contingency Centre. In addition, the CIPD is the national contact point with the European Commission on related matters. A fundamental role of the Malta CIP Directorate is the coordination and support of general emergency preparedness plans capable of responding to national emergencies. This role entails the coordination of emergency services, namely the Civil Protection Department (CPD), Police Department, Armed Forces of Malta (AFM), Pre-Hospital Health and other related stakeholders as may be required by specific national emergencies.

Malta CIP provides adequate early warnings/alerts and advice via CSIRTMalta concerning Cyber threats and incidents, reaching out to operators of Critical Information Infrastructures (CII) and ultimately to other sectors, businesses, and citizens.

3. Priority 3. Investing in disaster risk reduction for resilience

Mechanisms to promote disaster risk transfer and risk sharing with both public and private investments as a means to reduce financial impact disaster on governments are being set in place. Programmes to promote and support collaboration among public and private stakeholders to enhance the resilience of business to disasters are also being set-up.

The Planning Authority is responsible for disaster risk assessment, mapping and management into rural development planning. The mainstreaming of disaster risk assessments into land-use policy development and implementation, including urban planning, land degradation assessments related to anticipated demographic and environmental changes is being put in order.

Malta has programmes that strengthen the design and implementation of inclusive policies and social safety-net mechanisms, through community involvement and access to basic health care services.

However, the capacity of these programmes and mechanisms to protect the livelihoods and assets, including the supply chain after a disaster is not established.

4. Priority 4. Enhancing disaster preparedness for effective response and to “Build Back Better” in recovery, rehabilitation and reconstruction

The National Risk Assessment and Contingency Planning is periodically reviewed and updated. Other relevant institutional arrangements and documentation linked to risk assessment and to climate adaptation include:

- The Strategic Plan for Environment and Development (SPED).

- The National Policy Framework for Alternative Fuels Infrastructure for Transport in Malta 2018-2030²³
- The Malta National Electromobility Action Plan (MNEAP)
- The process to develop a Coastal-Climate Overall Vulnerability and Exposure Risk (Coastal-COVER) Protection Strategy for the Maltese Islands has been initiated by the MTIP.
- Malta 's Storm Water Master Plan (SWMP) by 2008, 2nd Water Catchment Management Plan

The Civil Protection Department carries out a number of disaster preparedness, response and recovery exercises, including evacuation drills, training and the establishment of area-based support systems throughout the year and national exercises every two years.

Considering the size of the Island State and the related constraints it is difficult to relocate public facilities and infrastructures to areas not considered at risk.

Malta does not have an effective, nationally-compatible, regional multi-hazard early warning mechanisms, in line with the Global Framework for Climate Services that facilitates the sharing and exchange of information across all countries. However, Malta enhances international mechanisms, such as the International Recovery Platform, for the sharing of experience and learning among countries and all relevant stakeholders. Malta supports regional cooperation to deal with disaster preparedness, including participation in common exercise and drills in collaboration with Italy and promote regional protocols to facilitate sharing of response capacities and disasters resources with European counterparts.

4.3.3 Brief statement on the country's meeting of the framework's seven targets

1. Reduce disaster mortality
2. Reduce the number of people affected
3. Reduce direct economic loss in relation to GDP
4. Reduce disaster damage to critical infrastructure
5. Increase national and local disaster risk reduction strategies
6. Enhance international cooperation on risk reduction
7. Increase availability and access to multi-hazard early warning systems

Specific reference to the Framework's seven targets is not available on the public domain. National strategies and programmes related to DRR, including reference to international cooperation have been outlined in the previous section. The only hazard early warning system adopted on a regional scale is the high-water alert in low-lying areas due to the occurrence of

²³ https://ec.europa.eu/energy/sites/default/files/documents/2020.01.14-emergency_plan_final_draft.pdf

floods. As indicated above an INTERREG project is exploring a nearshore hazard monitoring and Early Warning System. A specific entity, the CIP has been established to manage critical infrastructure within the DRR broader framework.

4.3.4 Implications of implementing the Sendai Framework on risk reduction in coastal zones

The mechanisms and programmes related to Risk Assessment as outlined above are applicable for the whole country which, considering its size is considered entirely as a coastal zone. Nevertheless, the risks related to coastal areas are more pronounced than further inland due to the dynamic coastal processes and the extensive urbanization and high population density. Coastal zones in Malta are characterized by land-use conflicts as these areas accommodates critical infrastructures, housing, and tourism related infrastructure apart from areas of ecological, geological, and historical conservation value.

4.3.5 Summary of opportunities and constraints

The fact that Malta is perceived as one of the safest places, puts constraints on plans and progress related to DRR. Information in this respect on the public domain is very scarce, reinforcing further this idea. Training of the existing workforce and volunteers in disaster response is very limited, hence the public perception related to disaster risk is not challenged. The development of guidance for preparedness for disaster reconstruction, such as on land use planning are basically non-existent. Whilst acknowledging issues related to confidentiality of documents due to National Security which were not available to the research team for disclosure, this context raises several questions about the preparedness of an island state that is isolated in the middle of the volatile Mediterranean region. Is the level of preparedness disclosed to the public domain determined by the lack of disaster registry and the missing collective memory or by the need to preserve the perception that Malta, which relies heavily on tourism and foreign investment, is one of the safest places to be? As evident from the documents available, the mechanisms to reduce disaster risks that involve the social aspect are in place however further research is required to establish the risks related to the geophysical-environmentally related potential disasters. Relevant research is taking place. This shall be the baseline for further progress in DRR and for challenging the general perceptions.

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