



O5 Country report – Contributions to the guidance note with case studies and good practices on implementing local adaptation strategies

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1 Key recommendations (Top tips.)

This section includes a validated list of key recommendations according to partner country stakeholder contributions in the interviews and also to a wider discussion in the context of climate neutrality in Malta with reference to the activity of the Climate Actin Baord – Built Environment Committee which includes several stakeholders and of which the author of this report is a member.

This is relevant since the path to climate neutrality poses a significant series of challenges but also opportunities for the Maltese society and the built environment in Malta. It is acknowledged that the transition to a climate neutral economy requires timely long-term planning to take advantage of the opportunities associated with the transformation of the existing economy and also to establish the basis of trust with the citizens and economic agents that this change is possible, advantageous and timely. (Note that ‘Climate neutrality’, as formally understood in the EU, and as opposed to ‘carbon neutrality’, requires that by 2050, the EU achieves net zero emissions of all GHGs. Climate neutrality is formally understood as meaning net zero carbon emissions). The following recommendations and decarbonisation vectors and action lines for a carbon neutral society are identified:

Key General Recommendations for *Carbon Neutrality*:

1. **Renewable Energy: Decarbonising power generation by shifting the renewable modes of electricity generation.** Reaching 2050 targets means, shifting to renewable generation as much as possible.
2. **Improved energy efficiency in all sectors: Achieving energy transition by significantly increasing energy efficiency in all sectors of the economy, focusing on incorporating endogenous renewable energy sources into final energy consumption.**
3. **Energy efficiency in buildings and regeneration of buildings – retrofit: Promoting decarbonisation in the residential sectors, favouring urban regeneration and increased energy efficiency in buildings.** (fostering progressive electrification of the sector and the use of more efficient equipment).
4. **Circularity in resources - low carbon materials: Shifting the paradigm of resource use, moving away from the linear economic model and moving towards a circular and low carbon economic model.**
5. **Reducing Waste, recycling and waste to energy: Preventing waste generation, increasing recycling rates and reducing waste disposal in landfills.** Having a waste to energy generation plant is a very good measure how to reduce waste disposal in landfills.
6. **Transport Systems and Mobility: Decarbonising mobility by favouring alternative transport mobility systems: strengthening the public transport system and decarbonising fleets, supporting innovative and intelligent solutions for multimodal, active, shared and sustainable mobility, as well as electric and hydrogen mobility and other zero emission technologies.**
7. **Municipality and Local Action: Boosting the participation of cities and local governments in decarbonisation by encouraging an integrated approach to its**

different vectors. Specific efforts should be carried out in the following areas: mobility, buildings, services and waste management, and enhancing the role they have played in mitigating climate change.

8. Financial instruments: Introducing financial instruments for the transition to neutrality, continuing to eliminate environmentally harmful subsidies, possibly introduce the application of carbon tax and promote a greater taxation of resource use, reducing the tax burden on labour, recycling revenues for decarbonisation and a fair transition; Fostering the development of a favourable environment for sustainable financing and incentives applicable to reduced carbon energy buildings.
9. Research and Innovation: Encouraging research, innovation, and the production of knowledge in favour of neutrality in the various sectors of activity.
10. Environmental Education: Promoting a transitional shift towards the adoption of sustainable behaviours and a change in patterns of production and consumption in favour of sustainability, particularly through environmental education and awareness.
11. Training and Skills: Promoting skills development and (re)qualification directed towards the new opportunities for economic development.
12. New Economy and Business opportunities: Encouraging the development of the new economy linked to energy transition and decarbonisation, supporting the development of new industrial clusters and the generation of new business opportunities; Promoting a fair and cohesive transition that enhances the country, creates wealth, promotes employment, and contributes to raising the standards of quality of life of Malta.

Key adaptation measures are summarised in the following key sectors:

1. Climate Change Scenarios and related Coastal Risk

A Research programme was proposed to help define the climate change related risks integrating different research initiatives and data. The objective of the project refers to the definition of hazards for the Maltese islands, definition of scenarios for the Maltese Islands in view of Multi-hazards and associated guidance for responsible entities in devising climate adaptation plans for Malta. Climate change mitigation measures need to be analysed as well as climate adaptation strategies.

2. Development of Climate Adaptation plans for the entire Archipelago.

Development of comprehensive detailed climate change adaptation plans for the Maltese Islands through a phased implementation involving the different entities responsible for associated sectors. The plan is required to include also assessment of implementation and deviations, evaluation tools for the implementation and reviews of results achieved.

3. Marine and Coastal Zones Climate Adaptation Strategy

The climate adaptation strategy is to focus on the Marine offshore assets and coastal assets given Malta is an Archipelagic state with significant sea and coastal territory compared to land mass. There are already key forums which bring together the key government entities involved in the marine spatial planning and coastal planning sector which shall focus on Climate change

adaptation, on development plans and assessment of impacts. The coastal areas present significant complexities and require holistic and integrated management approaches. The stakeholders involved in the sector need to work together towards climate adaptation strategies addressing social, environmental economic and governance issues. The Different stakeholders include tourism operators given the importance of tourism to the GDP in Malta, fisheries and fish farming, navigation routes, industrial, urban residential area. Land use conflicts need to be addressed also in the context of climate adaptation measures, striking the right balance in case of conflicting situations.

4. Data management and Experience

Data management is crucial in order to be able to devise informed plans and strategies for climate adaptation. Data sources need to be identified and data collection organised and managed. Previous action and results of initiatives need to be referenced in order to improve on previous action and exploit and capitalise from past experiences, in the development of new climate adaptation action.

5. Local Councils and Local Communities

Involvement of local communities and local councils is key in the preparation and in the implementation of climate adaptation strategies. This involved different stakeholders from different sectors. Local councils can mobilise communities in the decision making process, reinforcing the "capacity to act" principle. The key agencies involved in different sectors need to be involved in climate adaptation strategies through a horizontal action involving the different entities.

6. Barriers between entities

Different entities need to communicate more at different levels. Communication and collaboration between entities and key actors, ensures there is no duplication of work or overlapping of actions, no conflict in actions taken and better sharing of resources towards common action. This improves efficiency in the strategic action required. Therefore climate change adaptation measures can be devised across sectors with key agencies, benefitting different groups and sectors active in a specific context.

7. Infrastructure in Coastal Area

The life time engineering component of coastal infrastructure including harbours, port facilities and breakwaters presents a key component supporting industry and economy in Malta as an independent sovereign Islands State with limited resources, relying on important and sea communication. Resilience to climate change of coastal infrastructure is key to ensure economic and social wellbeing. Biodiversity and coastal ecology play an important role and are also key in the coastal management.

8. Management of Climate Adaptation Plans

Adaptability and flexibility in the implementation of plans is considered important in the context of the small Island State with intense coastal activity, with respect to the peculiarities

and changing requirements along different coastal areas of relatively extents; A case in point is the Marsaxlokk harbour in Malta, with sensitive ecological areas, next to culturally significant coastal fortifications, industrial areas, free port and power station and an important fishing industry besides the residential urban areas, all within a small geographic extent. Flexible adaptive management helps reduce the uncertainties for climate change scenarios in decision-making and monitoring of the action and its implementation regularly.

9. Water Resources in a Mediterranean Climate

Water is a key resource in the Maltese Islands due to its scarcity and the reliance on the energy intensive production through reverse osmosis, which accounts for c. 50% of the water requirements in the Maltese Islands. Water management practice is key with adequate maintenance and upkeep of the water storage infrastructure (both large main storage and also small reservoirs) and rain water harvesting. Malta relies on the importance of most resources.

10. Resources and Waste

Waste management needs to be adequately addressed through the implementation of the Waste management strategy for Malta 2021-2030, enabling good practice in the exploitation of resources, waste classification and recycling to minimise landfilling. Other actions including design for deconstruction and alternative excavation to minimise excavation waste generation present important opportunities – supporting both climate change mitigation but also adaptation.

11. Research and Innovation

Research in climate change adaptation in the built environment and coastal areas is required to identify the optimum solutions and inform policy and strategic action. This depends on funding mechanisms which include local funding MCST and also European funding mechanisms. Such research is best conducted through collaboration between the national entities and Authorities and the University of Malta.

12. Training and Skills for Climate Change Adaptation

Training in built environment studies and climate adaptation is key for the successful implementation of climate adaptation plans. Such training requires the identification of skills in the industry for the future in the short and long term to define courses and training programmes.

2 Instruments available to support local adaptation to climate change.

2.1 REGULATORY INSTRUMENTS (E.G. LAWS, ACTS...):

List of the most relevant regulatory instruments in Malta for climate change adaptation.
(Climate Action Board Malta – Built Environment Committee Report):

The Policy and Legal Framework

European Green Deal and the Climate Legal Framework

The European Green Deal is an action plan for the green transition and includes a renovation wave: collectively achieving sustainable buildings in Europe.

There is a robust legal framework at the EU and national level, which encompasses climate action across all sectors. The regulation of climate action addressing the building and construction sector is one of its focal areas.

Policy and Legislation for the Building and Construction Sector

Buildings, directly or indirectly, contribute towards emissions that fall within the scope of the EU's effort-sharing regime, which sets targets for each EU member State and which covers, among others, emissions from fossil fuel use in buildings (e.g. cooking/heating gas), emissions of F-gases from air-conditioning/ refrigeration.

Energy in Buildings

EU Directives and Regulations

Directive 2010/31/EU - Energy Performance of Buildings Directive

Directive 2012/27/EU Energy Efficiency Directive

National Legislation and Policy

L.N. 134 of 2020 - Energy Performance of Buildings (Amendment) Regulations, 2020

L.N. 47 of 2018 Building Regulation Act (CAP. 513) Energy Performance of Buildings Regulations, 2018

The near-zero energy building status for public buildings (NZEB) by 2018, and all other buildings by end-2020.

EPC for design and asset ratings and obligation to display certificates.

Road Transportation

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EU Directives and Regulations

Directive 2009/33/EC on promoting clean and energy-efficient road transport vehicles

Regulation (EU) 2017/2400 implementing Regulation (EC) No 595/2009 — determination of the CO₂ emissions and fuel consumption of heavy-duty vehicles

Regulation (EU) 2019/631 — setting CO₂ emission performance standards for new passenger cars and for new light commercial vehicles

National Legislation and Policy

Parking Places Regulations (L.N. 25 of 1961)

Motor Vehicles (Tariff of Fares) Regulations(L.N. 14 of 1982

Quality of Fuels Regulations (L.N. 44 of 2008)

Infrastructure for Spatial Information Regulations (L.N.339 of 2009)

Resource and waste

EU Directives, Regulations & Policies

Directive 2008/98/EC Waste Framework Directive

Directive 2006/21/EC on the Management of Waste from Extractive Industries

EU Construction and Demolition Waste Management Protocol (EC, 2016)

EU Waste Audit Guideline (EC, 2018c)

National Legislation and Policy

Waste Regulations LN 184 of 2011

Deposit of Waste and Rubble (Fees) Regulations LN 128 of 1997

LN 22 of 2009 on Waste Management from Extractive Industries Regulations

Renewable Energy

EU Directive

Directive 2009/28/EC The promotion of the use of energy from renewable sources

National Legislation and Policy

The National Renewable Energy Action Plan 2015 – 2020, Energy and Water Agency

LN 538/2010, Promotion of Energy from Renewable Sources Regulations

Energy and Climate Plan, 2019

Current Practice

- Services Division BRO Malta - Technical Guidance Document F, 2006 ;
- Malta Environment and Planning Authority - Development Control Design Policy, Guidance and Standards, 2015.
- Low Carbon Development Strategy in formulation
- Long Term Renovation Strategy in formulation
- BRO - Nearly Zero Energy Buildings Plan for Malta, Aug 2015.
- Malta's 2030 National Energy and Climate Plan, 2018.
- Malta's Sustainable Development Vision for 2050, 2018.
- Cost Optimality Studies of Building Stock in Malta, 2018.
- BPIE - A Guide to Implement the Energy Performance of Buildings Directive (2018/844), May 2019.
- Kamra tal-Periti - A Modern Building and Construction Regulation Framework for Malta, June 2020.

2.2 FINANCIAL INSTRUMENTS:

List of the most relevant financial instruments in Malta for climate change adaptation.

(Climate Action Board Malta – Built Environment Committee Report):

Financing the transition to a circular, carbon neutral society, in its many aspects, is crucial to the success of the national goal of achieving climate neutrality by 2050. It is necessary to ensure that climate policy is financed in a sustainable manner and that it is implemented efficiently, and in line with the country's long-term objectives, avoiding financing investments that are not in line with this objective and enhancing the creation of new clusters in the country. For this reason, it is essential to foster the development of a favourable environment for sustainable financing and greater involvement of the financial system.

European Financing Instruments

- The 2021-2027 Multiannual Financial Framework
- Action Plan for Financing Sustainable Growth
- LIFE Program
- InvestEU
- The Connecting Europe Facility (CEF)
- The European Regional Development Fund
- Horizon 2020 and the subsequent Horizon Europe, Innovation Fund

National Financing Instruments

The national climate policy also benefits from the allocation of an important group of revenues generated by the climate policies themselves. One would need to identify any possibly

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national financing instruments readily available which embodies decarbonisation of the economy as one of the structuring areas.

One should consider the use of revenue generated from auctioning of EU ETS allowances, also taking into account the list of areas identified in the EU ETS Directive (Article 10(3)) including point *“(h) measures intended to improve energy efficiency, district heating systems and insulation, or to provide financial support in order to address social aspects in lower- and middle-income households”*.

One other element that should be looked into is the need to ensure that low-income households can also participate in the decarbonisation of Malta’s economy and can also benefit from such decarbonisation.

Private Sector Financial Instruments

Financing for decarbonisation and the circular economy has given rise to the development of financial products by the private financial sector, which thus manage to capture investment to be used in business activities that promote decarbonisation and the more efficient use of resources. Some of these would include:

- Corporate green bonds
- Sovereign green bonds
- Green Loans
- Sustainable investment funds
- Blended Finance

2.3 NATIONAL STRATEGIES AND PLANS:

List (in bullets) the most relevant CCA national strategies or plans, if possible, focused on coastal regions and built environment. Include a short description of each strategy/plan (no longer than 2 lines per bullet).

The National Climate Change Adaptation Strategy for Malta

<https://environment.gov.mt/en/Documents/Downloads/maltaClimateChangeAdaptationStrategy/nationalAdaptationStrategy.pdf>

The National Adaptation Strategy seeks to address recommendations in various sectors which are vulnerable to climate change, viz. water, agriculture, human health and tourism. The strategy also addresses the financial impacts as well as any sustainability issues. There is an emphasis on the need for a legal framework which will address the important matter of adaptation adequately.

The Strategy clearly outlines the policy which should be adopted and it indicates which Authority or Government entity is responsible for the implementation. Time-frames within which such policy actions should be implemented are also included

Malta Low Carbon Development Strategy

https://meae.gov.mt/en/Public_Consultations/MSDEC/Documents/MSDEC%20LCDS%20Vision.PDF

In line with this, 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 Low Carbon Development Strategy (LCDS or “Strategy”) out to 2050. Mitigation measures have been researched and possible abatement levels quantified through Marginal Abatement Cost Curve modelling (i.e. ratio of abatement potential against incremental cost of measure), and stakeholder consultation, leading to a list of realistic and cost-effective measures. The measures cover seven different sectors namely:

Energy, Transport, Buildings, Industry, Waste, Water and Agriculture and land-use, land-use change and forestry (LULUCF), aimed to achieve target reductions in greenhouse gas emissions by 2050 and also enabling Malta to reach its targets by 2030. In addition, it includes adaptation measures, proposing initiatives which will help the country be resilient in the face of Climate Change impacts which are already hitting our islands. The adaptation measures aim to address the specific risks and vulnerabilities which Malta faces given its nature as a small island state.

2.4 AVAILABLE DATABASES:

This section includes relevant databases to support CCA, focused on coastal regions and built environment. A short description of each database is included.

MARIA/Eta High Resolution Atmospheric Forecasting System for the Central Mediterranean and Maltese Islands

<http://www.capemalta.net/maria/pages/atmosforecast.html>

The Malta Blue Pages is an internet-based directory system for ocean & marine data and information, targeting to establish a single-point online reference, access and repository for a number of marine data sources and descriptions in the field of marine environmental and oceanographic data in Malta.

MARIA/Wave forecasting system at IOI-Malta

<http://www.capemalta.net/maria/pages/waveforecast.html>

The operational wave forecasting system at the IOI-Malta Operational Centre, University of Malta uses the 3rd generation spectral wave model WAM Cycle 4 (Gunther et al, 1992). Originally developed by Hasselmann, the WAM model has been later extended by the WAMDI group (The WAM Development and Implementation Group).

Malta Shelf Hydrodynamical Model – ROSARIO

<http://www.capemalta.net/MFSTEP/results0.html>

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The operational shelf scale forecasting system for the Malta Shelf Area runs in slave mode, through the daily re-initialization from the Sicily Channel Regional Model (SCRM) daily averaged forecast fields at day J (corresponding to Day 0 of the Malta shelf model) and the forcing at the lateral boundaries by SCRM fields in the subsequent days.

Malta GPS Wave Buoy Interface

<http://ioi.research.um.edu.mt/news-waves/>

The deployment of the GPS directional wave buoy in Gozo forms part of the NEWS (Nearshore hazard monitoring and Early Warning System) project led by the Università degli Studi di Enna “Kore”. The project is partially funded by ERDF funds through the Italia-Mala Interreg V-A Operational Programme (2014-2020). NEWS tackles the coastal erosion risks on the southern coast of Sicily and the Maltese Islands. Coasts are subjected to fast erosion due to natural and anthropic causes which involve the failure of cliffs, the triggering of localized erosions and the possibility of flooding. NEWS deals primarily with the modelling and monitoring of coastal risk processes, including the design of alert components against major risks. The system will make use of an integrated geophysical sensor network on land as well as a networked set of wave buoys installed offshore Sicily and the Maltese Islands.

2.5 AVAILABLE GUIDELINES:

This section includes a list of the most relevant existing CCA guidelines in Malta, focusd on the built environment includign the coastal regions. A short description of each guideline and reference provided is included.

European Green Deal

The EU circular economy action plan as a key building block of the European Green Deal, supports initiatives along the entire life cycle of products. It targets how products are designed, promotes circular economy processes, encourages sustainable consumption, and aims to ensure that waste is prevented and the resources used are kept in the EU economy for as long as possible.

Malta’s Research and Innovation Smart Specialisation Strategy (RIS3) 2021-2027

One of the aims of this strategy is aimed at the sustainable use of resources by turning waste into a resource. This current project aims at both the sustainability of local poultry industry (with the producer as the main stakeholder) and sustainability of the local environment (with the citizen as the main stakeholder) by reducing the polluting impact of poultry industrial waste and by utilizing this waste for nutrient recycling as a fertilizer and for structural purposes as building material.

Malta Low carbon development strategy (2021)

The LCDS presents measures, covering seven different sectors including: Energy, Transport, Buildings, Industry, Waste, Water and Agriculture and land-use, land-use change and forestry. The objective is to achieve reductions in greenhouse gas emissions by 2050 and enabling Malta to reach its targets by 2030. LCDS includes adaptation measures, for increased resilience with respect to Climate Change impacts. The adaptation measures aim to address the specific risks and vulnerabilities which Malta faces as a small island state. The LCDS refers to key elements in construction including: Exploring economic incentives targeting recycled materials in construction.

Energy Performance Certificate in Malta.

<https://bca.org.mt/epcs/>

Energy Performance of Buildings in The Maltese Islands. Energy Performance Certificate Service: provides assessors and members of the general public with information and material relevant to Energy Performance Certificate services and updates.

Construction Products Regulations (305/2011)

The Regulation Basic Requirement No 7 'Sustainable use of natural resources' refers to the following: 'The construction works must be designed, built and demolished in such a way that the use of natural resources is sustainable and in particular ensure the following: (a) reuse or recyclability of the construction works, their materials and parts after demolition; (b) durability of the construction works; (c) use of environmentally compatible raw and secondary materials in the construction works.' The exploitation of waste products to enhance the performance characteristics of mortars contributes towards this requirement.

Waste Framework Directive

Directive 2008/98/EC of the European Parliament and of the Council of 19 November 2008 on waste and repealing certain Directives (Text with EEA relevance)

The Waste Framework Directive protects public health and the environment through the proper management of waste. This is done by applying the EU's waste hierarchy, which promotes waste prevention and re-use over waste recovery and disposal.

Floods Directive

The objective of the Floods Directive (2007/60/EC) is to establish a framework for the assessment and management of flood risks to reduce the negative consequences of flooding on human health, economic activities, the environment and cultural heritage in the European Union.

Regulations

- CAP 623 – Building and Construction Authority Act
- SL 623.01 – Energy Performance of Building RegulationsSL 623.03 – Energy Performance of Building (Fees) Regulations
- SL 623.04 Conservation of Fuel, Energy and Natural Resources (Minimum Requirements on the Energy Performance of Buildings Regulations)
- SL 623.05 – In Building Physical Infrastructure (Access to Electronic Communication Services) Regulations
- SL 623.06 – Avoidance of Damage to Third Party Property Regulations
- SL 623.07 – Energy Efficiency Regulations
- SL 623.08 – Construction Site Management Regulations

Guideline Documents:

- Technical Document F (Part 1)
- Technical Document F (Part 2)
- Code of Police Laws
- Improving your Home to Save Energy and Achieve Better Comfort
- Standardisation of Apertures for Residential Buildings in Malta
- Circular Publishd in relation to Subsidiary Legislation 623.08
- EPC Guide to Additional Changes

Standards:

- SM 810:2022 - Recycling-oriented Deconstruction, Controlled Excavation Works and Classification of Waste
- SM3770:2017 - Green Roofs – Criteria for the planning, construction, control and maintenance of Green Roofs

2.6 SOFTWARE/HARDWARE/SCIENTIFIC FACILITIES:

The following is a List of existing scientific facilities in Malta supporting *directly and indirectly* the study and the implementation of climate change adaptation measures. The following includes a short description of each facility.

Planning Authority

- Planning Authority Malta www.pa.org.mt
- Planning Applications, Malta: <https://eapps.pa.org.mt/>
- Geographic Informaitoin System: Mapserves of the Planngg Authority, Malta: <https://pamapserver.pa.org.mt/>

The Map server of the planning Authpirty includes multiple data sets in a databse and allows for access to planning, environmental, developmentboundaries, scheduling

data, base data, enforcement, schemes and other data in a Geographic information referenced system for the Maltese Islands.

Lands Authority

<https://landregistryplans.gov.mt/>

Lands Authority Plans – Survey Sheets – for the Maltese islands.

CESBA e learning platform – Sustainable Med Cities

<https://cesba-med.research.um.edu.mt/>

The CESBA MED project tested 10 case studies from all over Europe. A common sustainability assessment framework at urban and building scale was selected after the testing phase to support the development of energy efficiency plans for public buildings in the context of their surrounding neighbourhood.

Improving stakeholders skills by offering targeted training courses is an essential component of CESBA MED strategic overview. Two courses are offered according to the identified target groups and the two scales, building and urban. All training material is available in English and in other 5 languages (Italian, Spanish, French, Greek, Croatian).

Research and Training Facility – Water Tower managed by the University of Malta

www.um.edu.mt

Water Tower Research and training station in new innovative durable materials for coastal environment, life time engineering, degradation of materials and structures, Sensor monitoring station.

Research Facilities at the University of Malta

www.um.edu.mt

Various laboratories: Civil Engineering, Materials Engineering, Biology, Chemistry, other

2.7 OTHERS:

- A larger awareness on climate change mitigation and climate change adaptation is necessary among different stakeholders and within the structures. The increased awareness on climate change adaptation strategies can help prioritise action in entities and institutions. For example in the context of the European Green Deal, EU taxonomy for sustainable activities, as a classification system established to clarify which

investments are environmentally sustainable, stakeholders can prioritise in their action whilst being aware of climate change impacts.

- Various resources exist in all different government entities dealing with the following: Energy, Building, Planning, Infrastructure. These include plans or development strategies, which are key pieces of documentation related to climate adaptation plans at the national level. In addition the respective archives of the main entities including historic archives are a useful resource in analysing scenarios.
- Interlinks between entities emerged as a key and important factor in the interviews. Entities tend to work independently from one another and therefore this may give rise to duplication of work. A focus action and further interlinks and collaboration is required between national entities which is likely to reduce bureaucracy and increase collaboration. This can lead to improved use of human resources and facilities and other resources, access to data.
- Knowledge is a key factor which was highlighted together with reliable data and datasets which need to be available and relied upon. The key areas highlighted relate to waste data which is necessary to define policy and strategic action for implementation plans.

3 Selection of country-level most suitable case studies.

Reference is to be made to the excel file with the outcome of the 18 interviews conducted, including the responses of each stakeholder group in a separate sheet. The interviews responses refer to the following key:

UNSUITABLE (0): Not possible to implement because the country is not exposed to the specific climatic hazard, there is no regulatory framework, social acceptance or any other reason that hamper its implementation

MODERATELY ADEQUATE (1): the local framework allows implementation, but some aspects need to be improved.

VERY ADEQUATE (2): the legal and institutional framework promotes the implementation, financial and technical resources are in place, the society accepts this option, etc.

The following summarizes the most adequate categories of CCA measures in Malta -according to the stakeholder views during the interviews together with the main reasons for that.

- **Coastal Engineering**

Coastal Engineering was identified as a key area basically in view of the vulnerability of the Maltese Islands as a small island nation with a sensitive and complex coast, presenting a dynamic landscape with conflicting land uses. Climate adaptation measures in coastal areas were in general deemed more critical for the Maltese Islands. In this context major works have been developed by the Infrastructure Malta responsible for the main infrastructure

works in Malta. Such works include the upgrading of port facilities where interviewees indicated reference to climate change adaptation, sea level rise and durable structures for future scenarios relying on durable reinforced concrete for the required exposure classes).

- **Storm Water Infrastructure**

Storm water infrastructure was also considered as key in the management and harvesting of water. Such infrastructure includes the major flood relief project in Malta with underground tunnels to relieve flooding from low lying flood prone areas in Malta (referenced in one of the Malta TAM's case studies – Output O5).

- **Training and Skills**

Training and skills was identified as a major area for action by different stakeholders. In particular reference was made to the two main educational institutions in Malta and other private institutions. The following activities were highlighted as providing an important contribution:

Decarbonisation of the Construction Industry Course

Continuous Development Course for Engineers, Architects, EPC Auditors, Building Industry Stakeholders

Course organised in multiple sessions, in person and online, during the period 2021 – to date, by the Building Industry Consultative Council.

CESBA e learning platform – Sustainable Med Cities

<https://cesba-med.research.um.edu.mt/>

Two courses are offered according to the identified target groups and the two scales, building and urban. All training material is available in English and in other 5 languages (Italian, Spanish, French, Greek, Croatian).

4 References

The following is a list of sources and literature consulted. In particular reference is made to the Climate Action Board, Built Environment Committee, Government of Malta Report, of which Prof. Ruben Paul Borg is a member and co-author of the report.

This document is in itself a compendium of references including guidelines, national regulations and standards and Directives.

5 Acknowledgements

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A complete list of stakeholder consulted is presented in the table below. The authors of the report acknowledge the support of 18 entities who participated in this exercise and to their contribution in the interviews.

Note on the Interviews conducted: The stakeholders were interviewed and the case studies provided in the Output 5 Questionnaire were used as a first guidance. However due to relevance of such case studies, mostly only to very specific contexts, which most often could not be understood by the participants. Some projects indicated in the original list in O5 would not make sense out of their original context as they would need to be understood in relation to a set of conditions related to that specific case study. Stakeholders therefore could not answer on the adequacy of the measures mentioned only - Therefore additional examples had to be brought up during the discussions mostly associated with the local context of the Maltese Islands. This goes on to show the importance of contextuality among other factors, in the general discourse on climate change adaptation.

Different stakeholders interviewed had different reactions to the questions and reactions where based on personal background knowledge, experiences and understanding and not as a representative comment on behalf of a specific organisation.

The three-level approach was in general understood but the actual meaning of each category differed from one individual to the next. For example, some individuals preferred to consider a moderate approach as a more secure option in case of uncertainty. It must be noted that the excel sheet tables are all filled in by the interviewer following each interview taking into account all information obtained from the interview questions – this is deemed satisfactory considering the 18 interviews conducted providing a relevant snapshot and a good picture of the thrust and main issues addressed in the interviews conducted.

Confidentiality Note: The entities and interviewees do not consent to the name of entity or individual interviewed being divulged outside the BEACON Consortium Network or the names of the entities, nor the names being published in the public domain.

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Stakeholder	Entity Type	Contact	Type of Organisation
Ref. No.			
1	Ministry for Energy	Anonymous	National and Local Authorities
2	Building and Construction entity	Anonymous	National and Local Authorities
3	Building Industry Consultative Council	Mr. Ryan Cilia	National and Local Authorities
4	Environment and Resources entity	Anonymous	National and Local Authorities
5	Infrastructure entity	Anonymous	National and Local Authorities
6	Schools Entity	Anonymous	National and Local Authorities
7	Transport Entity	Anonymous	National and Local Authorities
8	Waste management entity	Anonymous	National and Local Authorities
9	Medical Services entity	Anonymous	National and Local Authorities
10	Water Services entity	Anonymous	National and Local Authorities
11	Heritage entity	Anonymous	National and Local Authorities
12	Construction Managers entity	Mr. Jesmond Chetcuti	Civil and Professional Association
13	University of Malta	Prof. Edward Gatt	Academia
14	Malta Council for Arts, Science and Technology	Ing. Stephen Sammut	Academia
15	eNGO	Environmental NGO: Mr. Vincent Attard, Nature Trust Malta	Community Association
16	Consultancy firm 1	Services Engineers, EPC: Anonymous	Private Sector
17	Consultancy firm 2	Services Installations, Renewable Energy Sources, EPC: Mr. Luis Borg ECOGroup Ltd.	Private Sector
18	Consultancy firm 3	Architecture and Civil Engineering, EPC: Mr. Owen Baldacchino	Private Sector