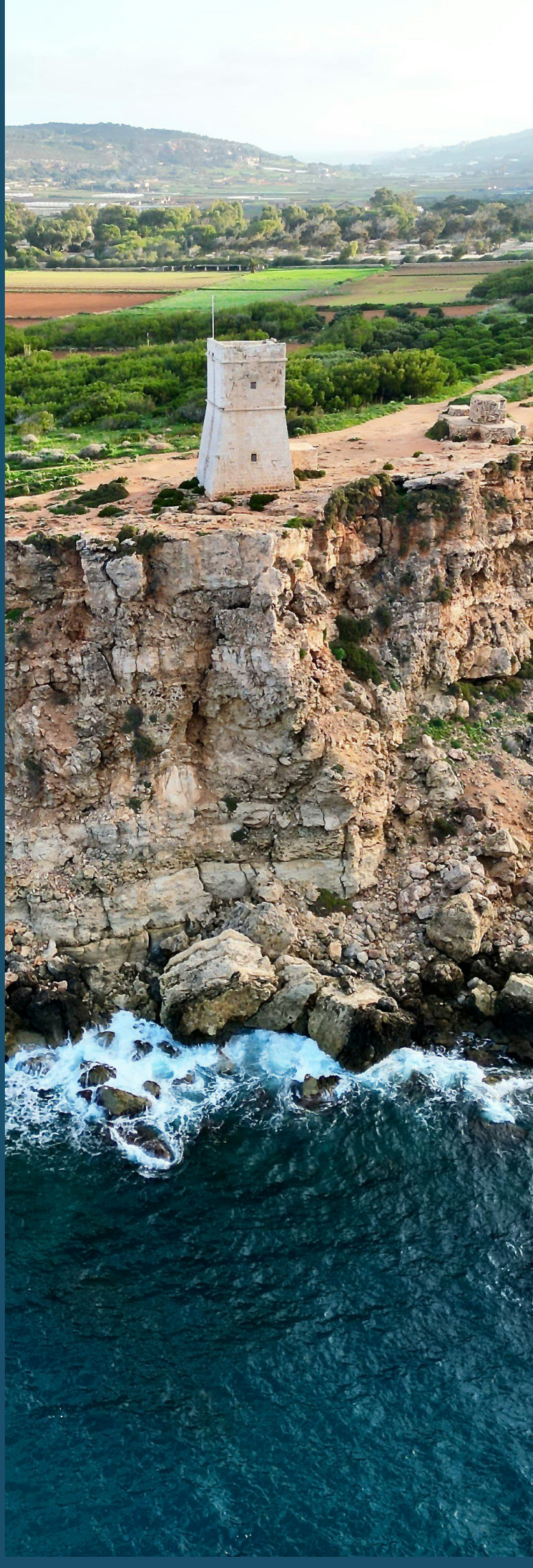
Malta
Tourism
Observatory

CLIMATE FRIENDLY TRAVEL

Edited by
Professor Geoffrey Lipman



CFT eco-badges show:

Commitment to Climate Friendly Travel

Commitment + Filing of a CFT Action Plan on Registry.

Tourism Insights 2025

Climate Friendly Travel

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AND TOURISM

Malta
Tourism Authority

Table of Contents

Foreword

I commend the Malta Tourism Observatory for this latest Insight publication – one that underpins an important element of our 2030 Tourism Strategy – "To make our country a Global Centre for Climate Friendly Travel"

This vision of clean and green tourism is detailed here by world experts in tourism's vital intersect with climate, sustainability and nature.

It also demonstrates the excellent progress that is being made in delivery of the strategic goal – particularly in the countries of the global south – underscoring our role in helping them grow their tourism in a climate resilient and sustainable way that respects the planet and its human and animal inhabitants.

Climate change is an existential threat that is bound to have an effect on all life on planet Earth, and it universally acknowledged that regions such as the Mediterranean Sea in which we live and operate are especially vulnerable to its ravages. We are also aware that the phenomenon is expected to impact tourism in a disproportionately high manner which makes it even more pertinent for us to take actions both to mitigate and adapt to it.

This publication and its chosen subject matter of Climate Friendly Travel is not an attempt to discuss the phenomenon in terms of its wider implications. We believe that the responsibility, knowledge and expertise for this lie elsewhere. In Malta's case the recent establishment of the Climate Action Authority, an innovative and timely action, is Malta's response to Planetary Climate Change and Global Warming. What we are seeking here is a focused input with regard to Tourism and Climate Change, particularly through addressing the issue in practical and thoughtful way via the championing of Climate Friendly Travel.

Malta has always grown beyond its relatively small physical dimensions on the world stage to bring to the fore issues of deep international relevance and raise them to international attention and action. In the case of the Climate Crisis, Malta was the country which first proposed action on this issue at UN General Assembly level by requesting its recognition as a threat to humanity. Through these additional steps in spearheading and championing initiatives in the realm of Climate Friendly Travel, Malta is building further on this important base by taking a leading role emanating from its active membership of the international community, its Euro-Mediterranean vocation and its realities as a small island state featuring an important tourism industry.

I am especially proud to see the incorporation of the engaging Dodo4Kids book on Malta, which carries this excellent work down to the earliest learners, building a clear pointer to a brighter future for generations to come.

Hon Ian Borg
Deputy Prime Minister and
Minister for Foreign Affairs and Tourism

Message

It is indeed with pleasure that the Malta Tourism Observatory continues to widen the number and scope of thematic publications under the Tourism Insights series: a series which is addressing a broad cross-section of topics and issues of relevance to tourism in Malta and beyond our shores.

The Observatory is showcasing its proactive role as a medium for discussing a wide range of Tourism related topics. This arises from the fact that the Tourism Industry overlaps on such a span of disciplines and areas affecting our day to day living, that a thorough understanding of the phenomenon requires that we seek the broadest possible understanding of anything related to it.

This particular publication focuses on a contemporary critical element facing humanity and its activities. Climate change is universally recognised as a priority challenge which, if left unchecked, poses one of the greatest existential threats to the Planet including our Tourism sector.

It exposes the dual risk not only through its impact on life in Malta but also in our various source markets where travel behaviours are under scrutiny in anticipation of a worsening situation. In our strategic approach to Climate Friendly Travel, we strive for a better future based on our national adaptability and carbon-reduction efforts.

Malta's Tourism Strategy to 2030 recognises the importance of taking the lead in raising global consciousness on the shift towards Climate Friendly Travel and this publication is a timely status report on our progress in this regard.

Carlo Micallef
Chairman,
Malta Tourism Observatory

Introduction

When drafting Malta's 2030 Tourism Strategy, we faced the massive threat of the COVID Pandemic and needed a guiding light for a brighter future. It was abundantly clear that when we emerged on the other side of the Pandemic's economic meltdown, we would face an even greater existential challenge of the Climate Crisis and unpredictable weather shifts that it brings.

On the positive side we had already begun to work on this issue in 2019 when we created SUNx Malta, with the SUNx Institute in Brussels and already launched a well received, postgraduate Diploma with ITS for students in Developing and Small Island States, as well as a Gozo based Registry for companies who share our commitment to Climate Friendly Travel - Paris 1.5: SDG: Nature +ve. So, we had lots of food for thought.

Our final Strategy contains several articles on Climate Resilience – most notably encompassing the concept of Climate Friendly Travel – responding, coherently, to the interlocking Paris Climate Accord: the Sustainable Development Goals and the Montreal-Kunming Biodiversity Convention. At their core is the commitment to make Malta a Global Centre of Climate Friendly Travel (CFT).

Our Malta Tourism Observatory and this 'Tourism Insights' contributes to achieving that goal. The Observatory keeps our eye firmly on implementation of the Strategy and this edition of 'Insights' strongly complements that. Against the background of the November 2024 Baku Tourism Declaration, which called for accelerated Climate action by the sector worldwide, it shows how and where Malta is answering the call.

Leslie Vella
Managing Director,
Malta Tourism Observatory
and Series Editor

Overview

Professor Geoffrey Lipman
President SUNˣ Malta

Our World faces a universally recognized, existential Climate Crisis and is responding in a UN led framework crafted by SUNˣ co-founder the late Maurice Strong – climate activist 75 years ago.

At SUNˣ Malta we have developed

- A framework for Climate Friendly Travel (Paris 1.5; SDG; Nature +ve)
- A Program of Education 2 Action – with more than 100 Diploma Graduates, from ITS (Institute of Tourism Studies), a UNFCCC linked, Registry, with close to 1000 companies based in Gozo, to help develop Climate Action Plans, and local Chapters in 60+ LDC and SIDS around the world.
- We have recently added 'Dodo4kids' to bring the CFT culture to primary level learners, through fun tourism stories about a revived dodo bird warning children about climate led extinction.
- Our goal is 100.000 Strong Climate Champions around the world by 2030.

It is our contribution to Malta as a Global Centre of Climate Friendly Travel (2030 Malta Tourism Strategy 10.1)

This '*Insight*' encapsulates the spirit of Climate Friendly Travel and contains articles on key aspects from sector experts as set out here:-

1. CFT Paris 1.5	Profs. Daniel Scott and Susanne Becken
2. CFT SDG	Profs. Felix Dodds and Chris Spence
3. CFT Nature +ve	Dr Hans Friederich
4. Malta Climate Realities	Dr Tarek Habib
5. Malta CFT Action Scan	SUNˣ Malta
6. Dodo4Kids – Malta.	SUNˣ Malta
7. Afterthoughts	Prof. Geoffrey Lipman

01

Climate Friendly Travel

CFT Paris 1.5

Climate and Tourism

TPCC Stocktake 2023

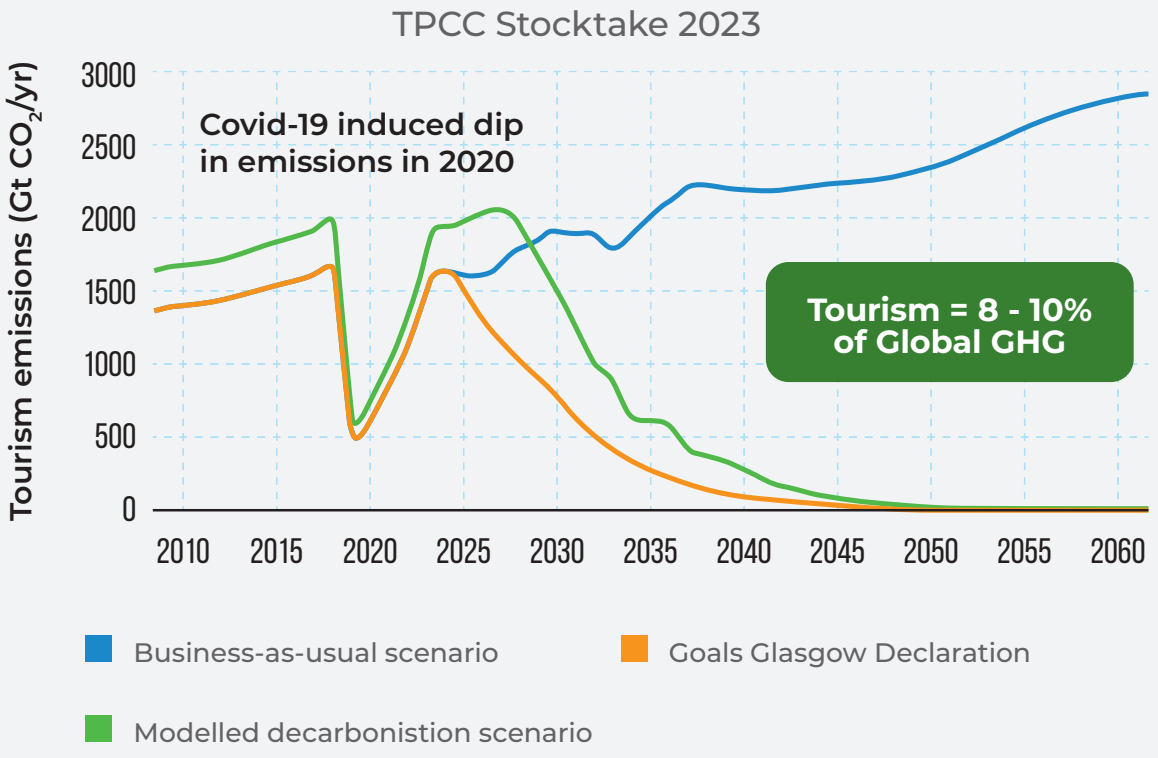
Daniel Scott and Susanne Becken

The first IPCC led climate action Stocktake cycle under the Paris Agreement was completed in 2023 to assess global progress on mitigation, adaptation and climate finance goals. The first Tourism Stocktake was undertaken in parallel, by the TPCC - Tourism Panel on Climate Change an IPCC inspired expert group, that examined climate action in the tourism sector.

Based on extensive exchanges between 60 top global, science based, tourism experts, the consensus recommendations were:-

- IPCC call for GHG emissions to peak by 2025, halve by 2030, and reach net-zero by 2050 won't be met by the Tourism sector.
- Glasgow Declaration 2030 tourism emission reduction targets won't be achieved by the Tourism Sector.
- Current Tourism policy and investment are inconsistent with climate ambitions, and adaptation is insufficient for projected climate change, so future impacts will restrict tourism development in some destinations.
- Tourism is growing faster than the rest of the economy, putting greater pressure on the need to decouple growth from emissions. Continued capital investments and trends toward longer average travel distances and more air travel are hindering emission reduction efforts.
- Approximately 10% of global emissions are from tourism. Data show that tourism emissions have increased annually over the last decade and tourism is not on track to achieve its sector interim target of reducing emissions by 50% by 2030.

Tourism emission trajectories



- Tourist transport emissions increased by 65% from 1995 to 2019. Air travel was a key driver of this growth, now contributing 26% of all tourist trips (domestic and international), but 75% of tourist transport emissions.

- Existing aviation technologies are unlikely to fully mitigate aviation's climate impact by 2050. Sustainable aviation fuels (SAF) can contribute to mitigating aviation's climate impact, but their net GHG improvement, broader sustainability, scalability, and justice implications will constrain production. Emerging technologies may play a larger role after 2050.

- Rail travel shows high growth rates in some countries, has recovered faster from the COVID-19 crisis, and can potentially gain a substantial share of short-haul tourism transport at low emissions in some countries. Decarbonisation of rail relies on sufficient availability of low carbon electricity, which remains lacking in many countries.

- Personal light duty vehicles (LDV) remain a key transport mode in tourism (32% of all tourist trips in 2019 and 15% of tourist transport emissions). Continuing improvement in global fuel efficiency and standards, as well as the increasing shift to low-emission electric vehicles is critical to reduce emissions from related tourism mobility. Important challenges remain in telectrification of LDV for tourism, including under-developed intercity, destination and accommodation charging networks, as well as availability of low carbon electricity in many jurisdictions.

- The GHG intensity of hotel operations is gradually improving among top operators in some regional markets. But the sector will fall short of reducing emissions by 50% by 2030. Energy demand per room remained steady, indicating that emission reductions are the result of decarbonisation of electricity rather than lower energy consumption.

- Current evidence points to a significant mitigation gap in the tourism sector. The reputational risk for tourism remains uncertain. Much more ambitious and urgent action is required to achieve sector emission reduction targets. This can't rely on carbon offsetting or low maturity technology solutions that may not be realised in timeframes required and will need demand management and shifts in consumer behaviour.

- Only a minority of the global population participates in international tourism. Global tourism emissions are heavily concentrated in a few high-income outbound markets and destinations. The unequal distribution of tourism emissions and potential mitigation strategies have important climate justice implications.

- Current forms of tourism, such as ski tourism at low elevations, beach tourism in highly erodible coastlines, and some nature-based tourism will not be viable at some destinations because of accelerating climate hazards and limits to adaptation measures.

- The unequal distribution of tourism emissions and potential impacts of climate hazards have important climate justice implications.

- In low-income countries, climate and tourism risks overlay with many other factors, such as poverty and public sector debt, requiring climate resilient policy making and climate finance.

- Tourism policy is not yet integrated with global or national climate change frameworks, despite an increase in sectoral climate pledges. Most tourism policies give little consideration to climate change.

- Governments and international development assistance continue to invest in tourism infrastructure that is climate vulnerable and linked to high GHG emission intensity.

- Research and scientific capacity to inform evidence-based climate action in tourism has increased substantially, but training in industry and tourism education programs remains very limited.

02

CFT SDG
Climate and Sustainability

SDGs in Peril: Getting Back on Track for 2030

Professor Felix Dodds and Chris Spence

Introduction

The United Nations Sustainable Development Goals (SDGs) were established in 2015 as a global call to action to end poverty, protect the planet, and ensure prosperity for all by 2030. Comprising 17 inter-connected goals, the SDGs are a compelling framework to tackle global challenges, including those faced by the travel and tourism sector.

However, as we move toward the 2030 deadline, less than 20% percent of the SDGs are on track. Alarmingly, almost one-third of the goals have seen no progress or have regressed since their inception in 2015. The confluence of climate, health, financial, and military crises has plunged millions more into poverty, while the international community appears increasingly fragmented. Can we still steer the course back to achieving these goals?

This article delves into the origins of the SDGs and explores why progress has faltered thus far. It assesses the outcomes of the 2023 SDG Summit in New York and its initiatives aimed at revitalizing efforts at this midpoint. Finally, it examines the travel and tourism sector to understand how it connects with and can help achieve the SDGs.

How We Got The SDGs

The Sustainable Development Goals (SDGs) are the successors to an earlier set of commitments known as the Millennium Development Goals (MDGs). The MDGs were largely based on objectives proposed by the Organization for Economic Cooperation and Development in their 1990s report, "Shaping the 21st Century." This influential document laid the groundwork for the UN Millennium Declaration, which the international community adopted in 2000. The Declaration echoed much of the OECD's vision. However, the specific "Goals" emerged a year later through then UN Secretary-General Kofi Annan's "Road Map towards the Implementation of the UN Millennium Declaration," which outlined what would become known as the Millennium Development Goals.

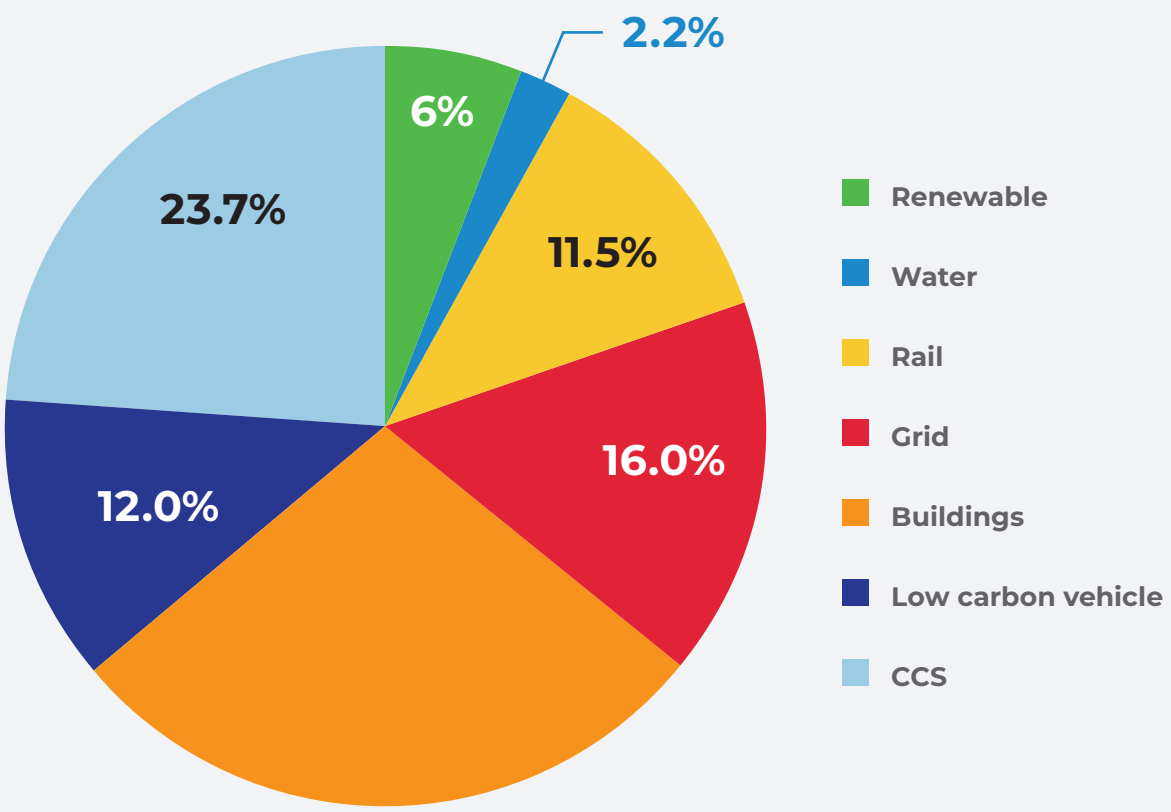
The development of the MDGs did not involve a highly inclusive process. Many stakeholders, especially non-government organizations, criticized them for addressing the symptoms of poverty rather than tackling underlying causes. Critics also noted significant oversights, such as inadequate attention to critical issues like human rights and agriculture and argued that the indicators selected by the UN were insufficient.

Despite shortcomings, the MDGs marked a significant beginning in shaping a global vision for human development. Their 8 goals, 21 targets, and 48 indicators addressed critical issues such as eradicating poverty and hunger, achieving universal primary education, promoting gender equality, reducing child mortality, improving maternal health, combating HIV/AIDS and other diseases, ensuring environmental sustainability, and fostering a global partnership for development. Not all targets were initially agreed upon; it took the 2002 World Summit on Sustainable Development (WSSD) to complete the agenda.

Nevertheless, the subsequent years posed significant challenges for advancing sustainable development. By September 2006, South African President Thabo Mbeki, in a speech to the UN General Assembly, lamented, "We have not implemented the Monterrey Consensus on Financing for Development, making it difficult for most developing countries, especially those in Africa, to achieve the MDGs and have reduced the Johannesburg Plan of Implementation to an insignificant, perhaps forgotten piece of paper."

The situation further deteriorated with the onset of the global financial crisis in 2008. The IMF reported this pushed an additional 53 million into poverty and threatened the stability of the entire international order.

Paradoxically, the financial crisis also provided an opportunity to advance the sustainable development agenda. Stimulus packages from most developed countries included significant investment in greening their economies. South Korea led the way, directing over 80% of its stimulus spending to green industries. This approach was reminiscent of the "New Deal" of the 1930s under U.S. President Franklin D. Roosevelt, but this time focused on stimulating green growth. The European Union was the second-largest investor, allocating 59% of its recovery budget to green industries, while China invested 38% as part of an effort to phase out some of its most polluting factories. These investments have become instrumental in expanding cheaper renewable energy sources, electric transport and overall green growth.



Source: HSBC

According to Achim Steiner, then UNEP Executive Director: *"Investments in clean-tech and renewable energy; infrastructure such as railways and cycle tracks and nature-based services like river systems and forests, can not only counter recession and unemployment but can also set the stage for more sustainable economic recovery and growth in the 21st century."*

President Lula da Silva of Brazil called for a new Sustainability event in 2012 - to help refocus / revamp politically. The UN General Assembly agreed to host 'Rio+20' - a 2012 event for the 20th anniversary of the 1992 Rio Earth Summit.

It had three objectives. Renew political commitment for sustainable development. Assess progress and implementation gaps in meeting commitments. Address new and emerging challenges.

And three main themes. Build a green economy for sustainable development: Lift people out of poverty and support developing countries green growth. Improve world sustainability cooperation and institutional frameworks.

The SDGs Take Shape

The SDG proposal was based on an awareness that the MDGs had significantly focused the efforts of the international community. But it was widely agreed that SDGs should be more inclusive.

"An inclusive and transparent intergovernmental process on sustainable development goals that is open to all stakeholders, with global SDGs agreed by the full UN General Assembly." .

There was also a general sense that the SDGs should be: Action oriented, concise, and easy to communicate /Limited in number, aspirational, and global in nature / Universally applicable to all

And different in several respects.....

- MDGs applied to the Global South, SDGs apply to all states.
- MDGs covered development - SDGs *sustainable* development.
- MDGs covered symptoms: SDGs focus on root causes.
- MDGs were sector focused. SDGs deal with sectors and Links.

The Rio+20 Summit was an opportunity to bring the environment and development communities together on these terms and with a joint, forward looking, agenda.

In addition to the SDG framework, Rio+20 created a new Institutional Platform

1. A High-Level Political Forum for the SDGs.
2. SDG Open Intergovernmental Working Group.
3. Intergovernmental Expert Committee on Sustainabler Development Finance.
4. A Technology Facilitation Mechanism for transfer to the Global South.

This created a solid UN SDG process, to which the Secretary General added

5. An Eminent Persons Panel on the Post-2015 Development Agenda.
6. A Sustainable Development Solutions Network.
7. National and Thematic consultations.

A new creative Negotiating Approach also emerged. The number of countries wanting to participate in key negotiations vastly exceeded the number of seats allocated. So it was agreed to share seats among several countries – eliminating much of the block based negotiations. The traditional North-South divide was less evident, New coalitions of common interest emerged.

By mid-2014, a draft outcome document had been developed with 17 Sustainable Development Goals and 169 targets. This document *'Transforming the World: 2030 Agenda for Sustainable Development'*, was formally agreed on 27 September 2015 by the UN Assembly and then adopted at a summit of Heads of State and Government.

The SDGs also created a landmark role for non-government stakeholders, from the beginning. Over 2000 gathered in Bonn, Germany, adding their own ideas to the 17 SDGs. As time passed all stakeholders began to engage and play critical roles in developing the SDGs, including the idea that we must 'leave no one behind'.

Losing Momentum at the Halfway Mark

Unlike the MDG indicators—which the UN Statistical Division developed itself—the indicators used to monitor progress on the SDGs involved an open, multi-stakeholder process providing input to the Statistical Commission of the UN. This was a new and inclusive way to gather data and information. To oversee the indicators, a new mechanism was set up under an inter-agency and expert group on SDG Indicators. Their work is far-reaching - total indicators are 230.

Unfortunately, as we passed the halfway mark to 2030 and the deadline for achieving the SDGs, the indicators were not so positive. The world was finally recovering from COVID-19, while dealing with the acceleration of the impacts of climate change across the globe. Furthermore, an increase in regional conflicts such as Ukraine and M.East, a rise in global pollution, and continuing poverty are all having dramatic impacts on delivering the SDGs. UNDP's Achim Steiner, calls it a global "polycrisis" that threatens to derail efforts to improve our world. *Steiner is right. We are currently poised to deliver less than 20 percent of the SDGs.*

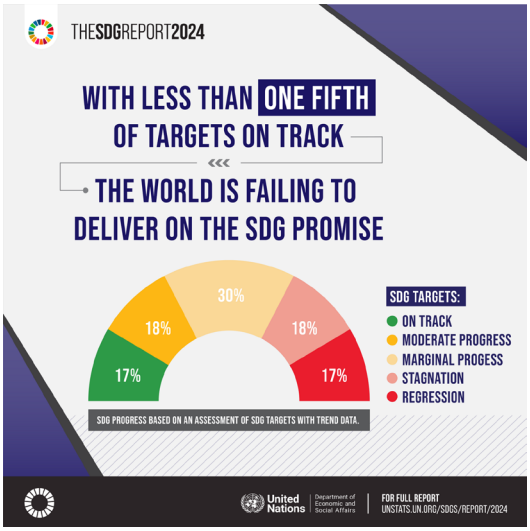
2023 UN Summit The UN Summit of 2023 provided an opportunity to get back on track. Two major reports helped shape the discussion.

First 'Global Sustainable Development Report' looked at levers of change to deliver the 2030 Agenda. It identified several "levers" -Governance; Economy; Individual and Collective Action; Science and Technology. Plus, issues around well-being; food, nutrition; energy, universal access and urban development.

Second - the SG's. 'Progress towards the SDGs: Towards a Rescue Plan for People and Planet' is a stark, assessment of halfway performance on the 2015-SDGs It bluntly stated "*Unless we act now, the 2030 Agenda will be an epitaph for a world that might have been*".

Across most of the SDGs, progress is insufficient. There was also a huge SDG funding gap, then estimated at over $4 trillion.

The UN noted "*Years of sustainable development gains are being reversed. Millions have fallen into poverty, hunger, malnutrition and climate impacts are more serious. The result is increased inequality, weaker world solidarity and a shortfall of trust to jointly overcome these crises.*"



New Push for Action.

The 2023 UN High-Level Political Heads of State Forum called for:-Debt for SDGs swaps, including climate nature, education and food; Urging Development Bank action for SDGs; Scaling up key transitions to accelerate SDG progress; Building resilience and leaving no one behind; Applying science, technology, innovation and data; Integrating policies and public institutions for achieving the SDGs; Strengthening multilateralism. Mobilizing finance/investment for SDG achievement.

There were also a number of top level amplifying actions, including - Meeting on Universal Health Coverage: Financing for Development: Summit of the Future: UN SG's Common Agenda Policy Briefs and Global Futures Conference – the impact was mixed. Important ideas, many world leaders but insufficient urgency and buy-in. It is clear a huge global effort is still needed to meet our collective goals by 2030.

The SDG Summit inspired action in many areas. From climate change to pollution, poverty to peace, including *integrating SDGs into national policies and international solidarity.* In a time when the world feels more fractured than ever, it is this last step - finding common ground and trust among nations - that may be the most important. and most elusive.

SDG's and Tourism.

Travel and tourism is a significant contributor to the global economy and social wellbeing. It accounts for approximately 10% of global GDP and provides jobs for millions of people worldwide. It also contributes some 8-10% of carbon emissions As such, aligning travel and tourism practices with the SDGs is essential for ensuring an economically and socially sustainable future. UNTO has identified key linkages between the SDG's and Tourism reflected below

GOAL 1: **NO POVERTY**

Tourism can play a significant role in poverty reduction both directly and indirectly. It generates employment opportunities, not only in tourism businesses but also through development of micro, small and community -based enterprises that cater to tourists. These opportunities allow local communities to supply goods and services, fostering economic inclusion. Revenue from tourism-related taxes and fees can be reinvested in poverty alleviation initiatives and infrastructure development. Such investments benefit the entire community, including those living in poverty, by improving access to basic services and facilities.

GOAL 2: **ZERO HUNGER**

Tourism can contribute to zero hunger by supporting sustainable agriculture and integrating it into the tourism value chain: By promoting the local sourcing of food and beverages, tourism can support sustainable farming practices. This creates stable demand for local products and encourages farmers to adopt more sustainable methods.

Agritourism offers additional income opportunities for local farmers while enhancing tourists' experiences through immersive agricultural activities. This fosters an appreciation for local food systems and bolsters local farmers' capacities.

Tourism infrastructure improvement can enhance food supply stability by facilitating better transport and logistics networks. This supports local consumption, tourism sector needs and overall food security.

Goal 3: **GOOD HEALTH AND WELL BEING.**

The interconnectedness of tourism, health, and well-being became especially evident during the COVID-19 pandemic, as the industry relies on services requiring direct human interaction. Ensuring clean and hygienic conditions, implementing prevention plans, and following health guidelines are critical for destinations to rebuild consumer confidence, which is essential for the tourism sector's economic recovery during and after health crises.

Moreover, revenue generated from tourism can be reinvested into enhancing healthcare services and infrastructure within local communities, contributing to overall public health and well-being.

Goal 4: **QUALITY EDUCATION**

This ensures that all girls and boys complete free primary and secondary schooling by 2030. The tourism industry requires a substantial workforce, presenting a significant opportunity for fostering sustainable and inclusive socioeconomic development. Skilled workers are essential for the thriving of a sustainable tourism sector. By providing educational programs specifically tailored to the needs of tourism businesses and their employees, we can enhance career growth and development. These programs equip individuals with the necessary knowledge and skills to succeed in the industry.

Goal 5: **GENDER EQUALITY.**

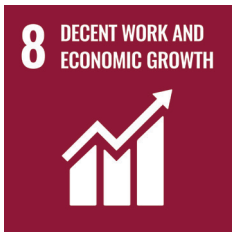
Tourism is a sector with a high proportion of women as employees and entrepreneurs. However, many women in tourism are often found in low-skilled or informal positions. By harnessing the potential of tourism, we can empower women to become fully engaged and take on leadership roles in all areas of society. Tourism can serve as a powerful tool for women's empowerment by providing job opportunities and enabling income generation through both small and large-scale tourism and hospitality-related enterprises.

Goal 6: **CLEAN WATER AND SANITATION**

Investing in utilities within the tourism sector can improve access to safe water, hygiene, and sanitation in tourism destinations and their surrounding communities. Efficient water use in tourism, alongside effective safety measures, wastewater management, pollution control, and technological advancements, we can protect and sustain our most precious resource.

Goal 7: **AFFORDABLE CLEAN ENERGY**

Tourism, as an energy-intensive sector, has the potential to lead and accelerate the transition towards a greater share of renewable energy in the global energy mix and to enhance energy efficiency in its operations. The sector can act as a catalyst for implementing renewable energy solutions within local communities. By promoting investments in clean energy sources and advancing innovative solutions, tourism can help reduce greenhouse gas emissions, mitigate climate change, and contribute to broader access to sustainable energy.



Goal 8: **DECENT WORK AND ECONOMIC GROWTH**

The travel and tourism sector is a significant source of employment, particularly in developing countries. Sustainable tourism practices can promote decent work by ensuring fair wages, safe working conditions, and opportunities for skill development. Additionally, by fostering local entrepreneurship and supporting small businesses, tourism can contribute to economic growth and resilience.

Goal 9: **INDUSTRY, INNOVATION AND INFRASTRUCTURE**

Sustained investment in infrastructure and innovation is essential for driving economic growth and development. Tourism development heavily depends on robust public and private infrastructure. The tourism sector can significantly influence public policy by advocating for infrastructure upgrades and retrofits that are more sustainable, innovative, and resource-efficient. By moving towards low carbon growth, tourism can attract more tourists and other sources of foreign investment.

Goal 10: **REDUCED INEQUALITIES**

Tourism can be a powerful tool for reducing inequalities when it actively involves local populations and all key stakeholders in its development. It serves as an effective means for economic integration, diversification, and poverty reduction. Tourism positively impacts earned income and livelihoods, supports the development of local and rural economies, and influences both the natural and cultural environment. Additionally, it can contribute to urban renewal and rural development by providing opportunities for individuals to thrive in their place of origin.

Goal 11: **SUSTAINABLE CITIES AND COMMUNITIES**

Urban tourism can enhance city sustainability by promoting cultural heritage, improving public spaces, and boosting local economies. However, challenges like over-tourism can strain infrastructure and resources. To address this, sustainable urban tourism planning is crucial to balance the needs of tourists and local communities while preserving cultural and natural assets.

A city must first be beneficial for its residents to be attractive to visitors. Tourism can drive advancements in urban infrastructure and accessibility, as well as support regeneration efforts. Investments in green infrastructure, such as efficient transport and reduced air pollution, contribute to creating smarter and greener cities for both residents and tourists.

Goal 12: **RESPONSIBLE PRODUCTION AND CONSUMPTION**

The travel and tourism industry has a notable environmental footprint due to energy consumption, waste generation, and resource depletion. Implementing responsible consumption and production practices is vital to minimize this impact. Sustainable practices, such as reducing waste, conserving water, and promoting eco-friendly transport options, are key to achieving this goal.

The tourism sector must embrace sustainable consumption and production modes to advance sustainability. Identifying critical intervention points within the tourism value chain is essential to optimize resource use and mitigate environmental damage. Tools to monitor the sustainable development impacts of tourism, particularly regarding energy, water, waste, biodiversity, and job creation, are crucial. Such measures will lead to improved economic, social, and environmental outcomes

Goal **13: CLIMATE ACTION**

Climate change presents a significant threat to the travel and tourism sector, affecting natural landscapes, wildlife, and cultural heritage sites. The industry must actively mitigate its impact by adopting sustainable practices, cutting carbon emissions, and promoting eco-friendly travel options. Additionally, tourism can aid climate adaptation by supporting conservation initiatives and raising awareness about climate issues.

Tourism is both a contributor to and a victim of climate change. As such, stakeholders should engage actively in the global response by implementing adaptation and mitigation measures. By reducing its carbon footprint, particularly in transport and accommodation, the tourism industry can benefit from low-carbon growth while addressing one of our time's most pressing challenges.

Goal 14: **LIFE BELOW WATER**

Coastal and maritime tourism depend on healthy marine ecosystems, making their preservation crucial. Tourism development should be integrated into the management of these environments to help conserve fragile ecosystems and promote a blue economy, ensuring the sustainable use of marine resources. In many destinations, marine resources serve as the primary income source, underscoring the importance of their protection. The economic value of tourism concerning life below water is highlighted in Target 14.7.

While coastal and marine tourism can impact marine ecosystems both positively and negatively, sustainable tourism practices, such as responsible diving and snorkelling, can support conservation efforts. These practices provide economic benefits to local communities while safeguarding marine biodiversity, which is essential for the long-term viability of coastal tourism destinations.

Goal 15: **LIFE ON LAND**

Travel and tourism can significantly aid in conserving terrestrial ecosystems by promoting eco-tourism and supporting conservation initiatives. Sustainable tourism practices protect biodiversity, support wildlife conservation, and encourage responsible land use. By fostering a connection between tourists and nature, the industry can raise awareness about the importance of preserving natural habitats.

Since rich biodiversity and natural heritage often attract tourists, the sector is strategically positioned to enhance appreciation of local biodiversity knowledge. It can link biodiversity conservation with community health and welfare and encourage active measures by tourism stakeholders to protect and restore natural environments. When sustainably managed, tourism can not only conserve and preserve biodiversity in fragile zones but also generate alternative revenue streams for local communities.

Goal 16: **PEACE**

With tourism encompassing billions of interactions among people from diverse cultural backgrounds, the sector has the potential to promote multicultural and interfaith tolerance and understanding, serving as a foundation for more peaceful societies. It can advance human rights and improve access to justice by supporting local communities and businesses that operate ethically and sustainably, fostering a culture of respect for the rule of law and human rights. To minimize any negative impact on the safety and security of a destination, careful planning and coordinated efforts are essential.

Goal 17: **PARTNERSHIPS FOR THE GOALS**

Achieving the SDGs requires close collaboration among governments, businesses, and civil society. The travel and tourism sector can play a crucial role in fostering partnerships that support sustainable development. By collaborating, stakeholders can share best practices, leverage resources, and innovate in sustainable tourism.

Tourism's inherently cross-sectoral nature enables it to strengthen public-private-community partnerships and engage stakeholders at international, national, regional, and local levels to collectively pursue the SDGs and other shared goals. Public policy and innovative financing are essential to advancing the 2030 Agenda. By driving development in the tourism sector, these collaborative efforts produce a wide range of positive effects, extending beyond the sector itself.

Challenges in Implementing SDGs in Tourism

Despite the potential benefits of aligning travel and tourism with the SDGs, several challenges exist. These include:

1. **Awareness:** Many travelers and tourism operators lack awareness of CFT practices and the importance of the SDGs.

2. **Inequality:** While tourism can create jobs, the benefits are not always equitably distributed, leading to economic disparities within communities.

3. **Over-tourism:** Popular destinations often face over-crowding, which can degrade environments, strain local resources and anger residents

4. **Policy:** Inconsistent policies and regulations can obstruct Climate Friendly Travel practices**.**

5. **Climate:** tourism is vulnerable to climate change impacts, which can disrupt travel patterns and damage natural attractions.

Opportunities for Climate Friendly Travel and Tourism

Despite the challenges, there are numerous opportunities for promoting CFT aligned with the SDGs:

1. **Eco-Tourism:** Growing demand for eco-friendly travel options is an opportunity for tourism operators to develop CFT offerings.

2. **Technology Integration:** Advancements in technology, such as mobile apps and online platforms, can facilitate Climate Friendly Travel choices and enhance visitor experiences.

3. **Education and Awareness:** Raising awareness about sustainable tourism practices among travelers can encourage responsible behavior and support local communities.

4. **Public-Private Partnerships:** Collaboration between governments, businesses, and NGOs can drive CFT initiatives and promote best practices.

5. **Local Community Involvement:** Engaging local communities in tourism planning and decision-making can ensure that their needs and aspirations are prioritized.

Conclusion

The SDGs provide a comprehensive framework for addressing the challenges and opportunities within the travel and tourism sector. By aligning practices with the SDGs, stakeholders can promote sustainable tourism that benefits local communities, protects the environment, and fosters economic growth. As the industry continues to evolve, it is essential to prioritize sustainability, collaboration, and responsible practices to ensure a thriving future for travel and tourism that contributes to global development goals.

03

CFT NATURE +ve

By Dr Hans Friederich
Registrar, SUNˣ Malta CFT Registry

Tourism and Nature

Sunx Malta has created a global Climate Friendly Travel (CFT) framework to support climate resilience and sustainability in tourism companies, travelers and local communities. It operates all over the world – and is most active in small island and developing states. Our CFT slogan is *Paris 1.5; SDG-linked and Nature+* - tourism that is low carbon, linked to the UN Sustainable Development Goals and nature-positive, to keep us within the 1.5 degree warming as stated in the global Paris Agreement. This article aims to dig a little deeper in the nature+ side of Climate Friendly Travel.

What is Nature Positive Tourism?

More than half of the world's GDP is moderately or highly dependent on nature and its services. With the ongoing loss of healthy natural resources, there is an urgent need to rethink our relationship with the natural environment.

This may be particularly true for the travel and tourism sector. Nature-based tourism, which accounts for over 50% of the market, generates more than 600 billion USD annually, with wildlife tourism alone contributing 343 billion USD and supporting 21.8 million jobs globally. In many cases, protected areas continue to exist thanks to tourism. If poorly managed, then tourism imposes additional pressure on already stressed ecosystems.

To create a more sustainable and resilient sector, the travel industry must embrace a "Nature Positive" approach. This involves halting and reversing the damage to ecosystems, minimizing current negative impacts, and actively working to restore nature. By doing so, the tourism sector can generate a net positive impact on biodiversity, which is critical to achieving global conservation targets, particularly Target 3 of the Kunming-Montreal Global Biodiversity Framework, which seeks to protect 30% of Earth's habitats by 2030.

THE BIODIVERSITY PLAN
For Life on Earth

Key Principles of Nature-positive Tourism include:

Conservation: Supporting initiatives that protect wildlife and natural habitats.

Sustainable Practices: Promoting low-impact outdoor activities, such as hiking, cycling, birdwatching, rock climbing.

Community Involvement: Engaging local communities, especially indigenous people, in tourism, so they benefit economically, socially and culturally.

Education and Awareness: Providing travellers with information about nature conservation and promoting responsible behaviour while outdoors.

Nature-positive tourism aims to create a balance between enjoying the natural environment and ensuring its preservation for future generations. A good example is Gozo Adventures, Malta, which promotes activities like rock climbing, canoeing, archery, cycling and village walks.

At the 15th meeting of the Conference of the Parties to the UN Convention on Biological Diversity (CBD COP 15) in Montreal, the Travel and Tourism sector was singled out as a potential “Guardian of Nature” for its ability to lead a wider transition to a nature positive world. The Kunming- Montreal Global Biodiversity Framework, adopted at COP 15 by all the governments belonging to the Convention, contains four long-term Goals and 23 Targets for 2030 which include the protection and restoration of natural areas, the integration of biodiversity into public and private activities, and provisions for businesses to regularly monitor, assess and report on their risks, dependencies, and impacts on biodiversity.

Like many sectors, Travel and Tourism depends on nature in many ways, direct and indirect. In particular, the sector relies heavily on:

Healthy Ecosystems

To attract visitors, Tourism demands healthy, protected ecosystems such as mountains, savannahs, forests, coastal areas, coral reefs, and countless other natural areas. This includes thriving wildlife in these areas, on land and in the sea;

Functioning Ecosystem Services

Such as provision of fresh water and clean air, but also flood control and soil stability as well as the basis for a welcoming environment for tourists;

Availability of Natural Resources:

Like any other business sector, travel and tourism relies on many natural materials, ranging from the paper used in brochures and fuel for heating, cooling, lighting and cooking to the building materials vital for construction. This includes the fuel for air, road, rail and marine travel, currently mainly provided through fossil fuels.

Climate change is posing a growing risk to biodiversity, and as a result to the attractiveness of some nature-based tourism destinations. The IPCC has reported that all biodiversity hotspots are already being impacted and the damage will increase under all future climate scenarios. The risk of species extinction increases with warming in all climate change projections.

Climate change also has a direct impact on the tourism industry, with the risk that extreme temperatures will disrupt visitor patterns and the increased chance of calamities due to intense weather events, like hurricanes, typhoons, deluges or heatwaves will deter tourists to visit a certain destination.

The World Travel and Tourism Council, the World Tourism Organization and the Sustainable Hospitality Alliance have published a report setting out their joint plan to help halt and reverse biodiversity loss. Launched on Earth Day 2024, “Nature Positive Travel and Tourism in Action” is their pledge to support the implementation of the Kunming-Montreal Global Biodiversity Framework. The report includes case studies from around the world.

How can hotels include nature in sustainability efforts?

The Nature Positive Travel and Tourism in Action report has a roadmap, comprising an assessment phase, followed by reduction of negative actions and restoration of damage and degradation. The road map stresses the benefits of collaboration and communication and the need to monitor and report.

The assessment is arguably the most important aspect, and there is an ongoing debate about the interface of tourism development and nature protection. Questions focus on aspects like:

- Understanding of nature conservation by tourism managers and tourism business knowledge of protected area managers.
- Involvement of tourism in different protected areas.
- Involvement of local and indigenous groups in tourism developments in and around natural areas

Hotel managers and staff are not nature conservation specialists and there is urgent need to provide training and capacity building. At the same time, conservation managers and rangers must understand tourism is an economic activity, and hotels need to be profitable to survive.

While this may be an issue for concern, especially for the larger hotel chains, there are great examples of lodges or resorts that play a key role in these aspects, often helping to co-manage natural resources in the protected areas, like Borana Lodge in Kenya, or Pugdundee Safaris in India. Often these are family-owned businesses, and typically they have a personal stake in the conservation of natural resources in the area and well-being of local communities.

One area of concern is the zoning of protected areas into exclusive core zones that prohibit tourism, lower protection zone where some form of access may be permitted and buffer zones where all tourists will be welcome. The IUCN World Commission on Protected Areas has clear guidance on different levels of protected area, and the kind of developments that are allowed in different zones.

A Strict Nature Reserve

Is an area which is protected from all but light human use in order to protect its biodiversity and also possibly its geological and/or geomorphological features.

A Wilderness Area

Is similar to a strict nature reserve, but usually larger and protected in a slightly less stringent manner. Tourism is not advised in these zones.

National Parks

Are managed in a way that may contribute to local economies through promoting education and recreation on a scale that will not reduce the effectiveness of conservation efforts. The surrounding areas of a category II site (often called buffer zones) may be for consumptive or non-consumptive use but should nevertheless act as a barrier for the defence of the protected area's native species and communities to enable them to sustain themselves in the long term. Often, accommodation is located in buffer zones.

Natural Monument or Natural Feature

These often play a smaller but key ecological role in the operations of broader conservation objectives. They have a high cultural or spiritual value that can be utilised to gain support of conservation challenges by allowing higher visitation or recreational rights, therefore offering an incentive for the preservation of the site.

Habitat / Species Management Areas

Are similar to a natural monument, but focus on more specific conservation areas, like an identifiable species or habitat requiring continuous protection. These areas will be sufficiently controlled to ensure maintenance, conservation and restoration of particular species and habitats. Public education is widely encouraged. Tourism is not a preferred activity, but can occur in surrounding buffer zones

Protected Landscapes and Seascapes

A protected landscape or protected seascape covers a body of land or ocean with an explicit natural conservation plan, but usually also accommodates a range of for-profit activities, including tourism.

Managed Resource Protected Area

This level of protection may be particularly suitable to vast areas that already have a low level of human occupation or in which local communities and their traditional practices have had little permanent impact on the environmental health of the region. Tourism can be part of the activities permitted in these areas.

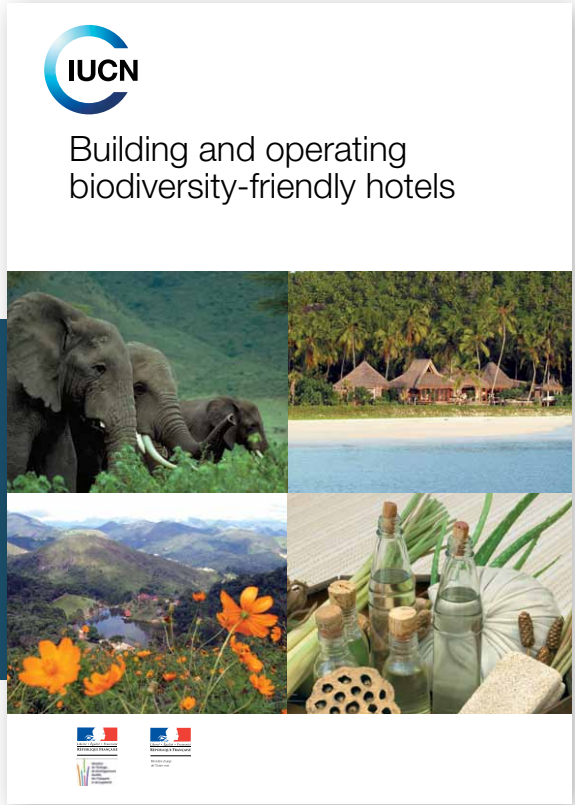
One of the outcomes of the CBD COP 16 is the creation of the subsidiary body for indigenous peoples and local communities to ensure their participation in future global nature conservation discussions. How this will impact on future tourism developments is not yet clear, but it allows for greater involvement of local people in planning for new hotels and resorts.

However, not all tourism enterprises are operating in or around conservation areas, and the assessment should also include other impacts, like the use of local water resources, access rights of local communities, waste management and potential pollution of air, water and soil. For example:

- **Carnivore Restaurant** in Nairobi has created a constructed wetland to filter its wastewater before it is discharged in the nearby river.
- **Chumbe Island Lodge** in Tanzania has installed rainwater catchment systems for water to be used in its bathrooms.
- **Jaya House Hotels** in Cambodia have eradicated single use plastics, both in the hotel and in the supply chain.
- **Hotel Luise** in Germany has developed a "Wall of Change", with 230 sustainability actions, and some of these are specifically related to nature.

Can hotels use nature +ve solution for climate response?

While the impact of tourism and travel on the environment around them can be significant, nature-based solutions can also play a major role in building resilience against, and better adapting to, the effects of climate change.



During construction or renovation, the choice of building materials is critical, and the use of bio-based building materials like bamboo, grass bales, FSC wood or natural stone can help to reduce the visual impact, as well as the carbon footprint.

Operational measures include:

- Ensuring adequate drainage around the property to avoid flooding during unexpected high rainfall.
- Creating efficient fire breaks around the premises, to avoid damage during possible wildfires.
- Protecting against landslides both above and below the property by helping to protect slopes with trees and other vegetation.
- Installing rainwater harvesting to create a source of water for services and irrigation during times of water scarcity.
- Generating independent green energy from windfarms, solar panels or heat pumps.
- Managing vegetable gardens and private farms to create a source of local, healthy vegetables and fruit.
- Increasing biodiversity around the premises, by planting indigenous vegetation, and creating green roofs and walls where appropriate. Incorporating flowing plants can also help to generate a local supply of honey by attracting bees.
- When located near the shoreline, helping to grow and protect mangrove forests, seagrass beds and coral reefs to shield against damage from high waves.

Some of these solutions are applied in individual cases but are not yet adopted as key measures for all hospitality enterprises. Further training and capacity building is required, such as the Climate Friendly Travel diploma course provided by the Malta Institute of Tourism Studies in partnership with SUNx Malta. In future, there may also be prescriptive measures by local or national governments, as a reflection of their national Biodiversity Strategy and Action Plans and their Nationally Determined Contributions for climate action.

04

Malta Climate Realities

By Dr Tarek Habib
Founder Murmuration

Introduction

This report aims to provide a comprehensive understanding of how climate change affects Malta's tourism, focusing on short- term environmental risks.

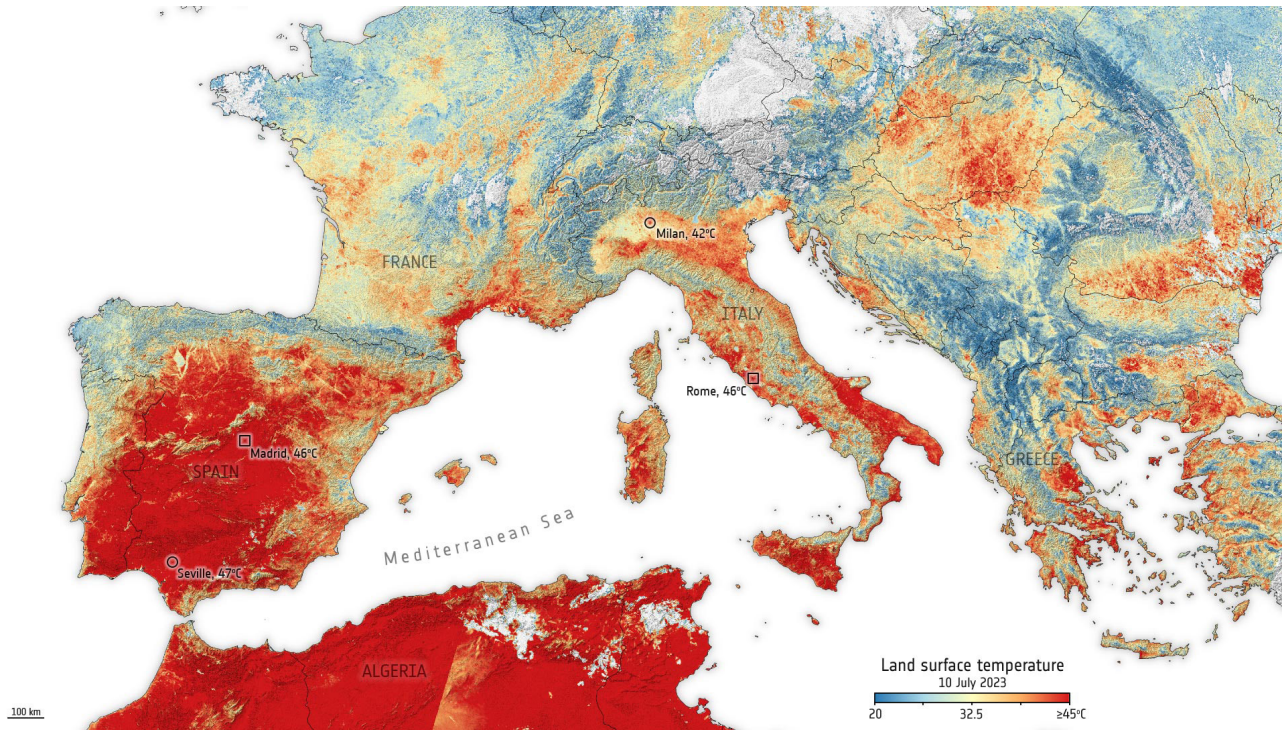
It begins with mapping the identified risks from the European Environment Agency's (EEA) reference report and their urgency levels relative to Malta's primary tourism activities. Tourists from the United Kingdom, Italy, France, Germany, and Poland are the primary visitors to Malta. Understanding the climate change risks in these countries' tourism activities helps consider marketing and capacity management

For instance, the UK faces increasing risks of extreme floods and heat stress, which could alter travel behaviour. Italy contends with droughts and extreme heat, impacting food production and health. France is similarly affected, with risks to infrastructure and food safety due to excessive rainfall and heat waves. These factors collectively influence tourists' decisions, potentially driving them towards or away from Malta.

The report then explores cascading local risks to illustrate the broader impact of climate on the tourism sector. It notes that *Urban Tree Cover* is one of the lowest in Europe: *Water Scarcity* is a major issue and *Heat Mortality* will become increasingly more critical. Specifically, it quantifies temperature rise and precipitation anomalies. Finally, the report presents the geographical distribution of climate risks in Malta, pinpointing vulnerable areas.

Heat

The mapping between Health risk clusters and activities distinguishes between the heat-stress caused to the general population (including tourists) and the heat-stress applied to outdoor workers in the tourism sector, both direct (tour guides, diving instructors, etc.) and indirect (construction and maintenance workers, etc.) and remain the main risk.



European-level estimations show that Cyprus, Greece, Malta and Spain could see a 40-fold increase in mortality from heat waves if no adaptation and mitigation actions are taken.

Tourism could be impacted by extreme heat that affects the comfort experience and represents risks for health. Projections on future tourism demand show a new pattern where the demand for Southern Europe Destinations faces significant reductions, while the demand for Northern Europe Destinations benefits from milder conditions.

Rainfall

In Malta, pluvial flooding occurs primarily as a result of heavy rains since there are no rivers on the island. Rainfall is scarce during the summer months. Consequently, we have estimated the risk of pluvial flooding to be relatively low during this season.

Energy

Urgent action is needed for the energy disruption due to heat / drought. On one hand, energy demand is likely to increase during the summer due to rising temperatures and heat waves, leading to greater use of air conditioning and desalination. Disruptions to energy supply would have a simultaneous impact on both of these, exacerbated by intensification of these two phenomena

Infrastructure

European property and insurance markets face significant risks from climate change. Intensifying climate impacts can lead to higher insurance premiums, widen the existing protection gap, increase economic losses, and exacerbate vulnerability among low-income households and other disadvantaged groups.

This issue is particularly critical given that much of the tourism infrastructure is situated in vulnerable areas like coastal regions, which are susceptible to floods, erosion, and other hazards. Heat waves can also weaken built infrastructure, causing structural damage such as cracking.

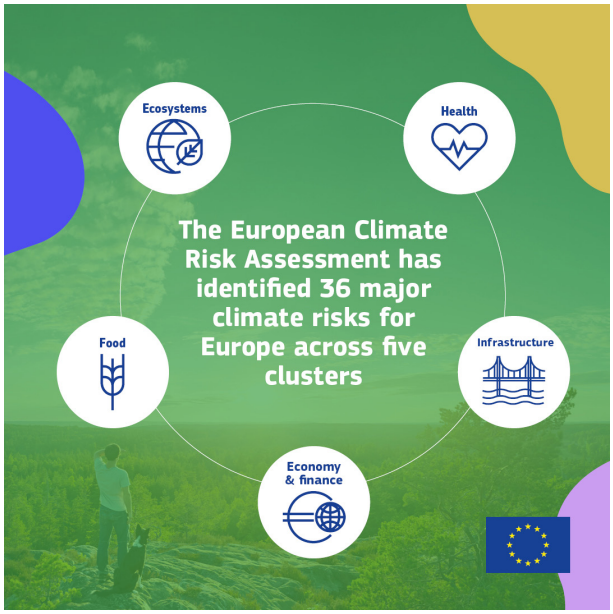
Finally, the escalating climate risks to property and insurance markets in certain European regions and countries could lead to a potential increase in unaffordability and the withdrawal of private insurance coverage that could also affect the tourism sector.

The analysis of impact chains induced by climate hazards and non-climatic risks drivers, shows convergence towards short term infrastructure risks, a first risk related to energy disruption and second to building and road damage. Increased pressure on energy and associated utilities comes from two factors,

1. The expected increased demand due to heat waves (i.e. need for cooling) and lack of precipitation, or capacity to store water in underground reservoirs due to soil artificialization putting more pressure on desalination that, consequently, puts more demands on energy supply.

2. Extreme events such as flash floods and extreme punctual precipitation that could damage the energy transport infrastructure (i.e. power lines) and lead to increased power outages and energy disruption.

The damage to buildings and roads is related to the amplified urban heat island effect, again related to the increased artificialization, that can damage buildings, including health, education and recreational facilities which has a direct impact on the ensemble of the identified tourism activities in Malta



Beyond the major risks discussed above and to facilitate a strategic discussion of climate risks and policy priorities in Europe, the 36 major climate risks for Europe are grouped into five broad clusters of interrelated risks that affect similar human or natural systems. The five identified clusters of systems subject to climate risks are: Ecosystems, Food, Health, Infrastructure and Economy and Finance. In a similar way, we have clustered the tourism activities in Malta into five activities clusters: History and Cultural Heritage, Sea related activities, Youth destination, Luxury and Health tourism and Malta as an inclusive destination. In the following paragraphs, we refer to the climate risks clusters by “clusters” and the ones related to tourism activities as “activities”.

For each cluster, we have used the risks identified by the EEA, as well as the urgency to act legend, that we adapted to the Maltese context and to each tourism cluster. 0.01% Permanent water bodies 1.95% Bare / sparse vegetation 1.6% Built-up

For example, the 2024 EEA report recommended an urgent action for the risk of ‘biodiversity / carbon sinks due to wildfires (hotspot region: Southern Europe)’. However, forest cover counts only for 9,2% of Malta’s territory. We have therefore decided not to consider this risk. This mapping also allows to see that the Youth Destination is the most resilient tourism activity cluster, as it does not directly depend on nature and outdoor activities.

We have chosen to apply food-related risks to all clusters. This was done on the assumption that all tourists consume food during their stay in Malta. Additionally, the risks presented for this cluster are barely similar to those at the European level, considering the country’s dependence on food imports.

According to Times of Malta ‘Malta imports some 70% of its food products and is particularly susceptible to developments in international food prices and other commodity prices that affect food production as well as transport costs’.

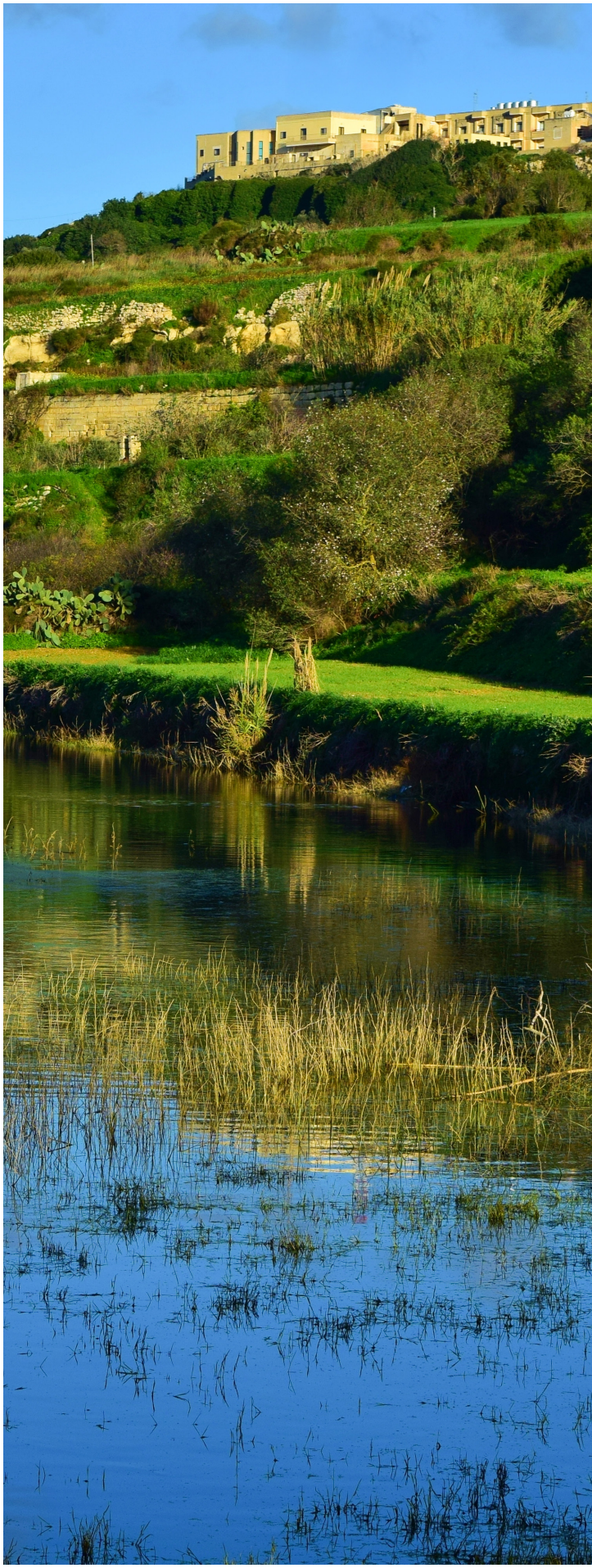
For example, Malta relies mainly on Italy for food, which can have both production and safety issues because of droughts and extreme heat. Furthermore, the dependency exacerbates the vulnerability, especially in Southern Europe where such interdependence heightens the significance of these risks. This dynamic could potentially lead to greater competition on available resources among major countries. Additionally, the impact on coastal and marine ecosystems, can have cascading effects. Potentially disrupting fisheries and aquaculture, as well as possible availability of seafood.

Mapping between Health risk clusters and tourism activities distinguishes heat-stress caused to the general population (including tourists) from heat-stress applied to outdoor workers in the tourism sector,- direct (tour guides, diving instructors, etc.) and indirect (construction maintenance workers, etc.).

According to the EAA 'Cyprus, Greece, Malta and Spain could see a 40-fold increase in mortality from heat waves if no adaptation and mitigation action is taken.' Tourism could be impacted by extreme heat that affects the comfort experience and represents risks for health. Projections on future tourism demand show a new pattern where Southern Europe Destinations face significant reductions and Northern Europe Destinations enjoy milder conditions.

In Malta, pluvial flooding occurs primarily as a result of heavy rains since there are no rivers on the island. Rain is scarce during the summer months in Malta. Consequently, we have estimated the risk of pluvial flooding to be relatively low during this season. Moreover, we assume the operational water evacuation system in Malta shall withhold this potential risk in 2024.

Urgent action appears needed for the energy disruption due to heat and drought. Energy demand is likely to increase in summer due to rising temperatures and heat waves, leading to greater use of air conditioning and desalination. Disruption to energy supply would have a simultaneous impact on both these factors, exacerbated by intensification of these phenomena.

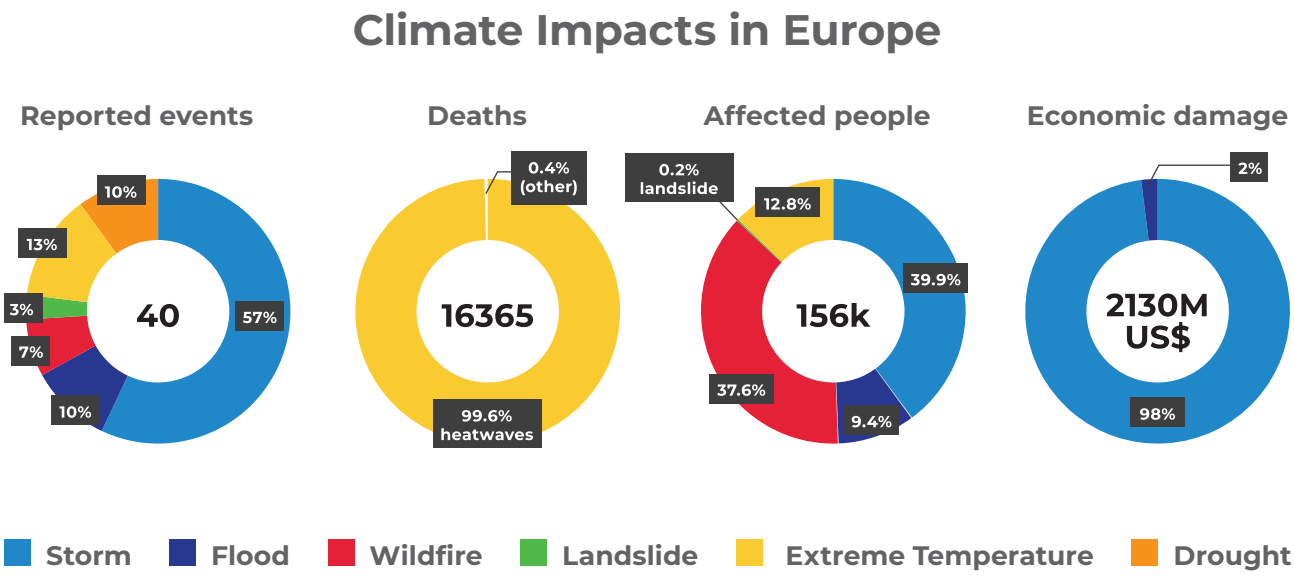


Economy and Finance Cluster

According to the 2024 EEA report: 'European property and insurance markets are facing significant risks from climate change. Intensifying climate impacts can lead to higher insurance premiums, widen the existing protection gap, increase economic losses, and exacerbate vulnerability among low-income households and other disadvantaged groups.'

This issue is particularly critical given that much of the tourism infrastructure is situated in vulnerable areas like coastal regions, which are susceptible to floods, erosion, and other hazards. Heat waves can also weaken built infrastructure, causing structural damage such as cracking.

Finally, escalating climate risks to property and insurance markets in certain European regions and countries could lead to a potential increase in unaffordability and the withdrawal of private insurance cover that could also affect the tourism sector.



Source: Copernicus

Europe is the fastest warming continent, Southern Europe is a hotspot region for multiple climate risks: 'Extreme heat, drought, wildfires, and floods, as seen in recent years, will worsen in Europe even under optimistic global warming scenarios and affect living conditions throughout the continent.

Malta is particularly vulnerable to heat waves and droughts

- Urban tree cover is one of the lowest of Europe
- In 2019, water scarcity affected over 50% of the area of Malta
- Malta could see a 40-fold increase in mortality from heat waves if no adaptation and mitigation actions are taken

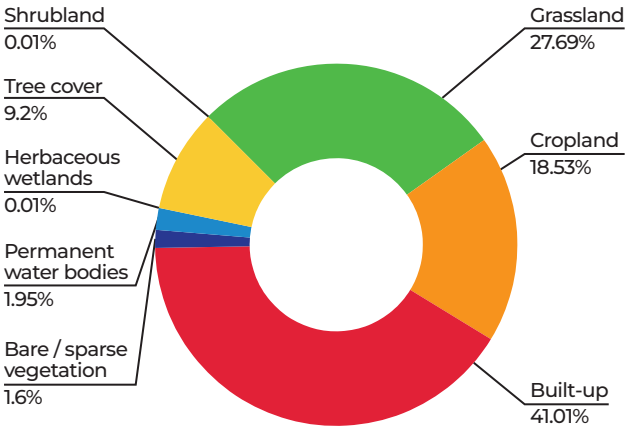


Figure 3 - Land-cover % in Malta, 2021-2022 - (Esa WorkdCover[7]) - ©Murmuration

[7]*Source: https://esa-worldcover.org/en*

To create this mapping, and subsequent mappings **we were inspired by the work of the EEA** in its 2024 report. For each cluster, we have used the risks identified by the EEA, as well as the urgency to act legend, that we adapted to the Maltese context and to each tourism cluster.

For example, in the case of the Ecosystem cluster below, the EEA report recommeded an urgent action for the risk of «biodiversity/carbon sinks due to wildfires (hotspot region: Southern Europe)».

However, **forest cover counts only 9.2% of Malta's territory** (cf. figure3). We have therefore decided not to consider this risk. This mapping also allows to see that the Youth Destination cluster is the most reilient cluster, as it does not directly depend on nature and outdoor activities.

The analysis of the impact chains induced by climate hazards and non-climatic risks drivers, shows convergence towards short term infrastructure risks, a first risk related to energy disruption and a second to the damage of buildings and roads.

Increased pressure on energy associated utilities comes from two factors -First is the expected increased demand due to heat waves and lack of precipitation, or the capacity to store water in underground reservoirs due to soil artificialization which puts more pressure on desalination and that consequently puts more demands on energy supply. Second is related to extreme events such as flash floods and extreme punctual precipitation that could damage the energy transportation infrastructure (i.e. power lines) and lead to increased power outages and energy disruption.

Damage to buildings and roads is related to the amplified urban heat island effect, that can damage buildings, including health, education and recreational facilities. This directly impacts on the ensemble of identified tourism activities in Malta.

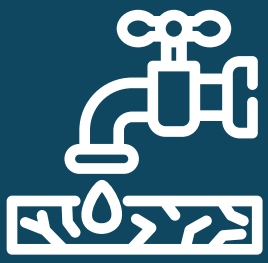
Copernicus provides seasonal forecasts of air temperature at 2 meters, at a monthly resolution. Seasonal forecasts provide a long-range outlook of changes in the Earth system over periods of a few weeks or months, as a result of predictable changes in some of the slow-varying components of the system

Beyond a few days, the chaotic nature of the atmosphere limits the possibility to predict precise changes at local scales. Here, we took the mean of reliable simulations, but we considered different models that are internationally recognized and produced by leading meteorological institutions.

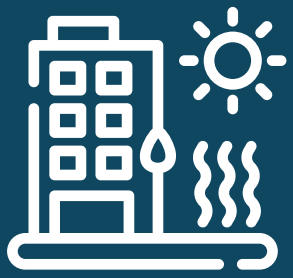
Zooming on Malta, the temperature is measured at the Luqa weather station in summer 2023, as well as the moving average on 30 days. The monthly average of daily maximum temperature reached 35 °C in July 2023, which is more than 4 °C above the upper bound given by the seasonal forecast.

In the specific case of Malta, the country is particularly vulnerable to heat waves and droughts. Indeed, according to EEA's report, **Malta combines the following elements**:

Urban tree coverage is one of the lowest of Europe



In 2019. water scarcity affected over 50% of the area of Malta



Malta could see a 40-fold increase in mortality from heat waves if no adaptation and mitigation actions are taken

The proximity of the weather station to the airport may also induce a bias because of the heat accumulated by the airstrip, which we can clearly see on the land surface temperature map of July-August 2023. These trends suggest that heat waves may continue. The 6th IPCC report highlights the global consequences of a 1.5-degree Celsius warming[11]:

- A 2.4 times higher frequency of extreme drought events.
- A 1.5 times higher frequency of extreme precipitation events.
- 5% reduction in global snow cover extent.
- A 10% increase in intense tropical cyclones.

According to the EAA rising temperatures are causing significant concerns regarding heat stress, including for tourism in Malta. Given the country's reliance on outdoor activities, heat stress poses a threat to visitor comfort and safety. This could deter tourists from choosing Malta as a destination, as they may prefer cooler weather.

Outdoor workers in the tourism industry - guides, beach attendants, and diving instructors, are also particularly vulnerable to heat-related risks. Moreover, heat waves can damage tourism infrastructure and buildings, leading to financial losses for property owners and insurers.

The increasing frequency and intensity of heat waves may prompt insurers to become more selective, potentially affecting property cover availability. Furthermore, heat waves can disrupt energy supply, impacting tourism operations that rely on energy for cooling, heating, lighting, laundry services, transportation, and more. This disruption can further exacerbate the challenges faced by the tourism sector in maintaining service quality and meeting visitor demands. Rising temperatures contribute to emergence of tropical diseases from mosquitoes, posing health risks to both tourists and locals.

The impact of rising temperatures extends beyond human health to threaten marine, coastal, terrestrial, and freshwater ecosystems, affecting the overall tourism experience and ecological balance.

On the energy consumption front, the scientific literature suggests that one degree of additional warming increases electricity use, for cooling systems, by 1% to 8% - this means that while increase in temperature for 2024 will have a noticeable yet manageable energy consumption increase, the accumulated effect over 2 or 3 seasons will certainly require mitigation measures to cater for the increased energy demand.

Precipitation Anomalies

The Mediterranean climate is a temperate climate characterized by a great sunshine, hot and dry summers and dry and mild winters. Thus, it's a climate where rain is mostly concentrated during shoulder seasons. It generally rains less than 100 days a year.

The Mediterranean Basin, densely populated, is identified as one of the main hotspots for climate change, particularly affected by heat waves and prolonged droughts. Usually, in Malta, precipitation is low in summer. It already poses a problem as summer months are both rainless and months of greatest water use and high tourism season.

A small negative anomaly of precipitation is forecast for Summer 2024. Since summer months are usually dry in Malta and because the country is adapted to this summer drought, the impact should be limited, even if the anomaly is nearer towards the forecast for Tunisia.

Localities and Risks

Based on the discussion in the present report we converge towards a potential negative effect on tourism related to increased thermal discomfort. While the heat phenomena come from the natural increase in air temperature, it can be amplified due to soil imperviousness. Moreover, an increased heat on coastal areas can have a negative impact on the water quality since it creates a favorable environment for algae developments and potential microbial contamination.

Water Quality in Malta: turbidity

Turbidity is concentration of suspended matters in water affecting its transparency. It can indicate the presence of impurities, sediment, or pollutants, affecting overall quality of the water and its attractiveness to beach and diving tourism activities. Sediments and suspended matters can come from various sources.

Activities such as fishing, boating, shipping, or as sediment runoff from agriculture or discharge from wastewater treatment facilities can contribute. Also, heavy rainfall can move sediment from land to coastal areas, making a clear link between heavy rainfall and water turbidity.

Water turbidity is higher in key touristic and densely populated areas, the main ports and more generally, bays and creeks. The higher turbidity in bays and coves can be explained by several factors: less water circulation than in open waters, greater human activity (tourism, fishing, pleasure boating).

Conclusions

The trend to higher temperatures poses risks of heat stress for both tourists and tourism workers. The potential for increased heat waves could deter visitors, impacting Malta's attractiveness as a summer destination.

While Malta's summer climate is typically dry, forecast precipitation anomalies suggest a minor reduction in rainfall. Although the immediate impact on tourism may be limited due to low summer rain, the trend of increasing dryness could exacerbate water scarcity issues, impacting both local communities and tourism activities reliant on water resources.

Heat

Rising temperatures and drought could strain infrastructure, particularly energy and water. Increased demand for cooling and desalination, coupled with potential disruptions to energy supply, highlights the need for resilient infrastructure to support both residents and tourists.

Water Quality

Elevated temperatures can lead to deteriorating water quality, including increased algal blooms and microbial contamination risks. These factors directly affect the attractiveness of Malta's coastal areas. Ensuring high water quality is crucial to maintain the island's reputation as a prime destination for sea related activities.

Economic and Social

The potential for higher insurance premiums and reduced cover due to climate risks could have far-reaching economic implications. The social aspects of tourism demand may shift, with tourists from similarly affected regions (e.g. France and Italy) possibly preferring cooler destinations. This shift necessitates a strategic approach to maintaining and diversifying Malta's tourist base.

Recommendations

- Enhancing water management systems
- Improving energy efficiency
- Developing emergency response plans for extreme weather particularly intense heat
- Promoting sustainable tourism practices
- Diversifying the tourism offer

Addressing the short-term environmental risks identified in this report is critical for Malta to preserve its status as a leading tourist destination. By proactively managing these challenges, Malta can continue to thrive in the face of evolving climate conditions, ensuring a safe, attractive, sustainable environment for both visitors and residents.

05

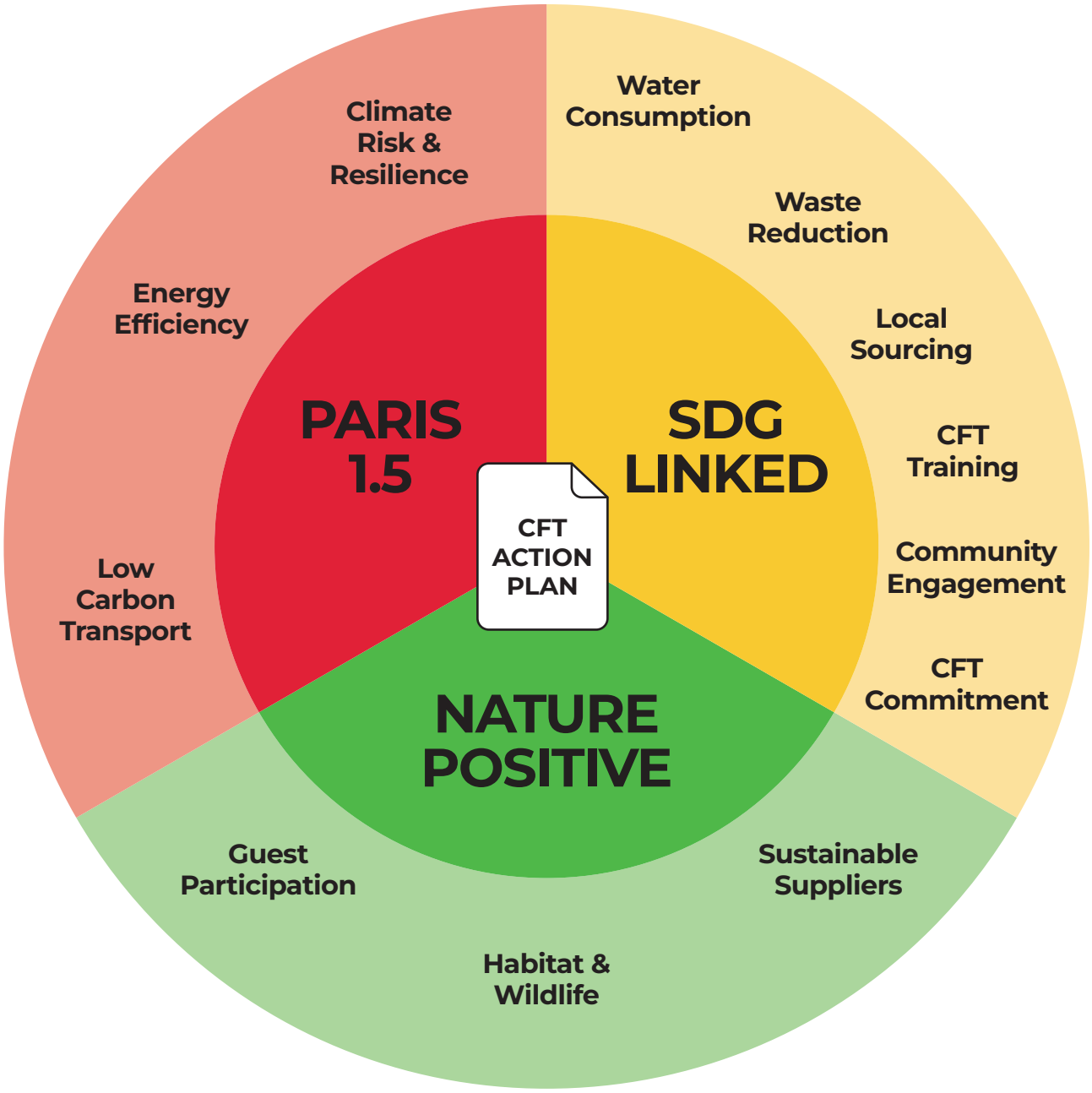
The Climate Friendly Travel Framework

By the SUNˣ Malta Team

Malta's Tourism Strategy 2021-2030 seeks to transform the sector towards long-term sustainable and responsible development, A key focus is climate resilience, with specific goals not only to establish Malta as a Climate Friendly Travel (CFT) Destination, but as a Global Centre For CFT.

This SUN^{x} Malta report, complementing the Strategy, is organized around the CFT framework of Paris 1.5 (Climate action), SDG Linked (Sustainable Development), and Nature Positive (Biodiversity Conservation).

The CFT Framework



Paris 1.5

Climate Risk and Resilience

As an archipelago with 271 kilometres of coastline and 316 square kilometres of total land area, the country faces intensified exposure to climate impacts. Malta's sedimentary rock composition and west-to-east shelving topography create particular susceptibility to erosion and flooding. The east coast, which bears the brunt of storm surges, houses the majority of tourism infrastructure.

Most concerning is potential disruption to Malta's traditional tourism season. Climate projections suggest loss of 4-8 weeks of peak season tourism due to extreme heat conditions, threatening a destination that has historically offered year-round access. This could alter Malta's tourism market and product offer.

Malta's response to these challenges is framed by broad EU-wide initiatives and international agreements. The country's climate-related legislation and policies align with UNFCCC, Kyoto Protocol and Paris Agreement frameworks. The European Green Deal has established targets of EU climate neutrality by 2050 and a 55% emission reduction by 2030. These goals have catalysed major revisions to key legislation, and spawned a new Climate Authority. Gozo is proposed as a Climate Zero village under EU policies.

Sea Level Rise

Global sea level rise is an increasing threat to Malta's tourism infrastructure. Under worst-case scenarios Malta could lose 12% of its total surface area – the highest relative land loss projected for any EU nation. Almost 200 buildings are threatened by storm-surge.

Temperature Increase

Malta has already experienced dramatic shifts in climate patterns that top global averages. Since 1952, there has been a 1.5°C heat increase

Rainfall Shortage

Rainfall dropped by 10.3 mm per decade since 1952. Recent years have set records at 387mm in 2020. Current natural freshwater availability stands at just 70 m^3 per capita annually - well below the UN threshold of 500 m^3 for chronic water scarcity. This is exacerbated by limited efficiency of natural systems, with only 35% of mean annual precipitation contributing to aquifer recharge, Extended droughts are increasingly common, This not only impacts direct water availability for tourism, but also threatens agricultural products that form part of Malta's tourism appeal

Infrastructure Threats

Some 35% of Malta's and 19% of Gozo's key tourism coastal zones are at risk. Water desalination and electricity plants situated near the coast and historic walled towns around Grand Harbour and Marsamxett Harbour are also exposed, With increased tourism numbers, extra hotel beds and added air conditioning, pressure on the energy system will continue to grow.

Energy Overload

Malta's energy landscape reflects complex challenges at the intersect of E.U. climate obligations, national infrastructure constraints, and growing tourism sector demands. Current energy generation relies heavily on imported fuels, with only 10% derived from renewable sources, mostly solar photovoltaic systems Tourism's influence on energy demand is substantial with hospitality accounting for 27% of services energy use.

Connectivity

Malta's position as an island nation makes aviation crucial. Excellent airline connectivity has led to remarkable tourism growth. However, this success has come with intensifying environmental impact. Malta must respond in line with evolving EU environment and air transport regulations - most specifically those for mandatory SAF (Sustainable Aviation Fuel) levels - starting at 2% in 2025 and reaching 70% by 2050.

As airlines seek to increase flights in the next years, there will be a need for even closer coordination of Tourism, Transport, Environment and Climate.

In recent years Malta has emerged as an important Cruise hub – with close to 1 million cruise ship arrivals in 2024. Also Malta-to-Malta cruises are increasing, with tourists flying in from abroad, getting on the ship in Malta and returning to Malta, before flying back home.

In response to environmental concerns, Malta initiated the Grand Harbour Clean Air Project. providing shore-to-ship electricity for up to five cruise liners simultaneously. The 2nd phase, will extend coverage to southern harbour areas, including Ras Ħanzir and the Mediterranean Maritime Hub.

One specific aspect of sea travel is the ferry service between Malta and Gozo,(with planned expansion to Burgibba) – this currently contributes 15% of Gozo's carbon emissions. The ferries use traditional diesel fuel, but there are plans to replace them with ships using cleaner fuels.

Internal Tourism transport suffers from intensifying congestion and buses are still mainly running on diesel fuels. This presents a challenge to tourist enjoyment of Malta's diverse products around the islands.

SDG Linked

Carrying Capacity

Malta's tourism sector has had record yearly growth, placing strains on infrastructure and resident satisfaction Current trends project accommodation capacity to double within a decade to 100,000 beds with a rapidly growing unlicensed sector. This coincides with concerning trends in visitor satisfaction. To address this, Malta is developing higher-value market segments, strengthening sustainability criteria and improving visitor quality experiences.

A cornerstone of this response is adoption of smart tourism management approaches. Moving beyond retrospective monitoring, the strategy details real-time management of tourism flows to reduce visitor impacts and enhance satisfaction. This, combined with strategic management of accommodation capacity, quality enhancement and smart destination development, aims to ensure competitiveness while addressing sustainability challenges.

Waste

Tourism's impact on waste continues to grow significantly, with record annual visitor numbers For the tourism sector specifically, the Waste Management Plan includes mandatory recycling information through licensing agreements, standardized waste prevention messaging and integration of waste management into tourism accommodation permits. Supporting initiatives include the "Green Champions" program for hotel staff training and eco-labels for companies. These, align with EU targets for 40% reduction in GHG emissions by 2030, including waste.

Water

Malta faces challenges in water resource management. It is the most water-stressed country in Europe and among the top 10 globally. It receives only some 550mm of rainfall annually, most between October and February and lacks surface waters as water sources (Some 70% of Malta has water stress due to scarcity / deteriorating groundwater quality). Climate change projections suggest this situation is likely to worsen, with decreases in precipitation and increases in heat.

Tourism places significant additional pressure on Malta's water infrastructure, Tourism demand peaks during summer months when water resources are most scarce, creating a critical timing mismatch between peak demand and water availability The disparity between tourist and local water consumption is substantial, with tourists using approximately three times more water than local residents

Heritage

Malta's Tourism Strategy emphasizes that "tourism will champion the cause for the preservation of the wide range of natural and man-made tangible and intangible heritage extant in Malta and Gozo" This also acknowledges that successful heritage preservation requires engaging younger generations in traditional crafts and creativity, while maintaining a careful balance between economic requirements and socio-environmental impacts.

Malta's history is a vital attraction for tourists with the oldest temples in Europe, construction of massive fortifications during the Maltese Knights era and the key role that Malta played during the second World War. These attractions provide major opportunities for tourism outside the hot summer months, and take tourist away from the main beaches.

Tourism development transformed much of Malta's coastal environments, with traditional shorelines changed by resorts and high-rise buildings. Some inland villages are threatened by modern high-rise building development, There are pressures of cultural commodification with social discomfort in high tourist-density localities, negative environmental effects and claims of development limiting available land. Increasingly amplified by public protest.

Nature Positive

Malta demonstrates commitment to protection covering 29% of its land area, including 34 sites in the E.U. Natura 2000 network of protected areas. The Malta Environment and Planning Authority recognizes that biodiversity conservation improves living standards, tourism commercial activity and jobs. This approach is reinforced through Malta's National Biodiversity Strategy and Action Plan, Malta is committed to making tourism nature-positive to build ecosystem resilience, protect biodiversity and strengthen species conservation, aligning with EU Directives and the Global Biodiversity Framework.

Coastal Zones

Marine protection in Malta currently covers 35.5% of Maltese waters, an area larger than the Maltese Islands, showing significant commitment to conservation But most of the Marine Protected Areas do not have full-time management staff, and enforcement of conservation measures is limited.

Tourism development created substantial pressure on the coast, with beaches near hotels and restaurants showing higher contamination. This affects critical marine species - loggerhead turtle nesting is threatened by beach tourism, with nests on popular beaches particularly vulnerable.

Coastal water quality presents additional concerns. Despite good ecological status, chemical quality remains poor to moderate in most water bodies, Vermetid reefs, unique biogenic formations along Malta's coast, face threats from tourism, particularly trampling at easily accessible sites popular for bathing During the past years, pollution has increased from the growing aquaculture farms that are not far off-shore. Although these fish farms are not a result of tourism, increasing tourism is a stimulus.

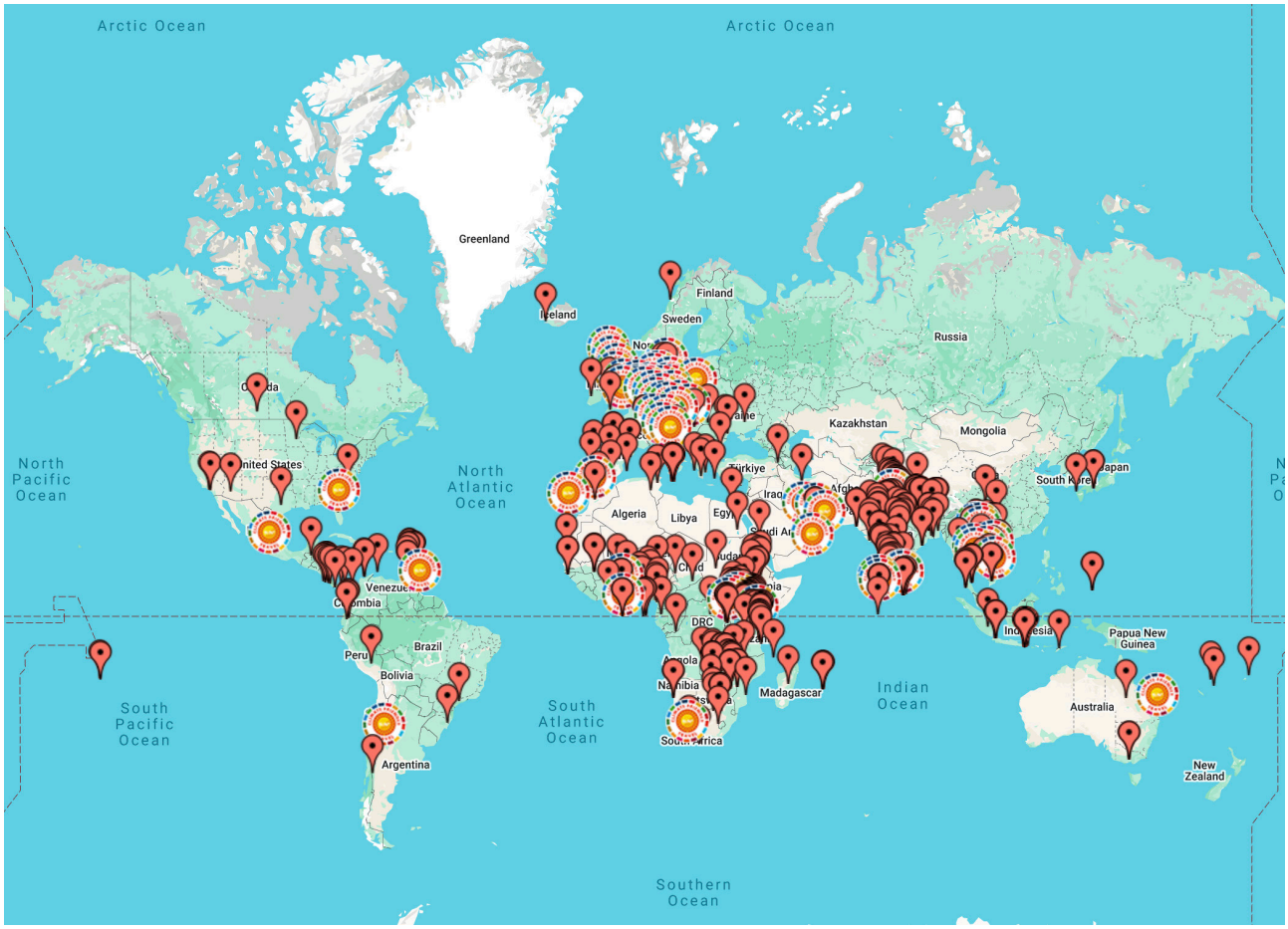
Tourism pressure on protected areas remains a concern - including overflowing sewerage and emissions from yacht marinas. Management strategies have been implemented to address these challenges. Environmental Regulations control construction management practices Additionally, management plans are being developed for Marine Protected Areas, with conservation objectives seeking to maintain or restore favourable conservation status for protected habitats.

Wetlands

There are 91, wetlands in Malta and Gozo. Many are challenged by development pressure, sewage contamination, polluted runoff, seasonal nutrient enrichment, litter accumulation, and limited water circulation.

Forests

Malta's forest coverage is a dramatic transformation from its historical landscape. While once covered in Mediterranean forests dominated by Holm Oak and Aleppo Pine, today woodland covers less than 1% of land area, with only four significant copses remaining. Buskett, Malta's largest Special Area of Conservation (SAC), is the most significant remaining woodland and supports some of the richest biodiversity. It contains many habitat types including arborescent matorral (tree-dominated scrubland), white willow and poplar galleries, olive and carob forests, Holm oak forests, and Mediterranean pine forests. Actively managed by the Government, Buskett shows the challenge of forest management in Malta - it needs strict protection for biodiversity, while also serving as a historical recreational area dating back to the Knights of St. John period. There are reforestation activities around the island, but mostly dispersed and not connected. Government has reforested some former dumps and quarries, and NGOs are carrying out tree planting. Tourists could be encouraged to support the conservation work.



CFT Registry Members 2025

The Next Generation

Through the 2030 Strategy, Malta has identified pathways for a cleaner and greener future, which its tourism sector and visitors are implementing under the guidance of the Malta Tourism Observatory. At SUNx Malta we are spreading this around the world and importantly to the next generations, through Climate Friendly Travel.

Our Education2Action programme, with its ITS linked CFT Diploma has now enrolled more than 150 Students and spawned CFT Chapters in some 60 Small Island and Developing States - thanks to generous Scholarships from the Minister of Tourism. Our CFT Registry is integrating tourism companies into the process, with 900 from around the world already participating.

We have also extended this work, under the banner of “Lessons from Dodo” , adding ‘Dodo Connect” and “Dodo4Kids” , using fun images of a resurected Dodo bird to reach out to travellers generally and families specifically, to underscore the *existential* nature of the Climate threat and fulfil our mission of a “Plan For Our Kids”

And we are amplifying this work with free Climate Resilience Support to Tourism Companies on the CFT Registry and their guests, as well as helping visitors to better engage with local community CFT activity.

Last but not least we are integgrating the Earth Charter into all our work. This landmark document was launched by our inspiration Maurice Strong with Mikhael Gorbachev at the turn of the century, as a lifestyle guide for people and our relationship with the planet. It promotes, peace, consideration and decency.

Conclusions

Malta, like many small islands, is at a critical juncture. Facing the complex task of balancing economic growth, environmental sustainability, cultural heritage and resident lifestyles. And responding to changing, climate driven, extreme weather.

This analysis, reflecting the CFT framework of Paris 1.5, SDG Linked and Nature Positive, reveals challenges and opportunities for Malta tourism.

Malta Tourism Observatory has already initiated preparatory analysis of the climate threat in its work with Murmuration and within the development of its OECD led Sustainability indicators. The creation of the new Climate Authority will materially strengthen Malta's response capability.

Working with SUNx Malta, together we have created a unique CFT network, that goes from education to action and has planted seeds in developing and small island states around the world, as well as in our EU home. We have extended the programme from graduates to early learners with our Dodo4Kids We are planning 100,000 trained Strong Climate Champions, globally, by 2030 as a living system for our outreach.

The bottom line is that Malta must become more resilient and responsive to tomorrow's increasingly extreme weather – and there are some final, key Climate Friendly Travel based issues which might usefully be taken into consideration.

Recommendations

Paris 1.5

- *Develop a CFT Action Plan with responsible Agencies*
- *Continue developing the Climate Change Tourism Risk Index with more monitoring of extreme weather impacts on tourism assets.*
- *Consider tourism-specific climate response guidelines for accommodation and operators for changes in peak season patterns.*
- *Expand the Grand Harbour Clean Air Project to all ports, with shore-to-ship electricity and more cultural activity for cruise visitors.*
- *Support tourism establishment energy-saving measures through licensing / guidelines to meet EU targets, focusing on solar power*

SDG

- *Consider increased tourism quality monitoring with real-time data collection to ensure Visitor and Resident satisfaction as supply grows.*
- *Support tourism heritage and sustainability through integrated GSTC, Green Key, and EU Eco-label training programs and CFT principles.*
- *Help tourism water-saving through industry guidelines / good practice*
- *Strenghthen waste management and Green Champions program.*

Nature Positive

- *Strengthen tourism development planning around Natura 2000 sites with focus on balancing visitor access and conservation needs.*
- *Consider guidelines for beach tourism for coastal conservation and lower marine pollution. Protect sensitive marine habitats in peak tourist seasons.*
- *Enhance collaboration between accommodation and conservation stakeholders, to create authentic eco-tourism experiences.*

As a tourism icon and home of Climate Friendly Travel, Malta has the chance to demonstrate how a small island state can transform its tourism sector to adapt to the Climate Crisis, meet local sustainability challenges while strengthening the economy and conserving biodiversity.

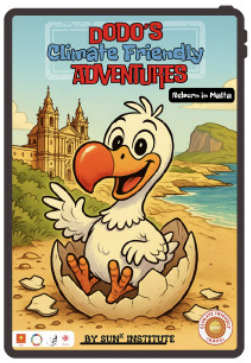
The path forward requires a delicate balance between maintaining Malta's position as a leading Mediterranean destination and ensuring the long-term sustainability of its natural and cultural resources. Success will depend on continued collaboration between public and private stakeholders, innovative approaches to resource and visitor management, and an increasing emphasis on quality in tourism development.

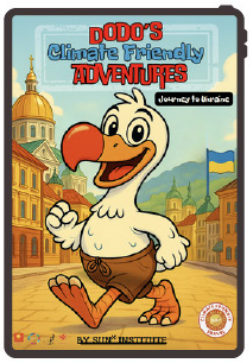
The 2030 Strategy remains a beacon.

06

DODO4Kids - Malta

By the SUNˣ Malta Team





DODO 4KIDS

Our flagship program is **Dodo4Kids** - for families and school age children it offers eBooks, cartoons, comics and activities to enjoy while travelling or at home.

Here a Dodo returns from extinction, re-incarnated, by an eccentric scientist in a research lab in Malta. The Dodo then travels to iconic tourism spots in countries around the world, accompanied by two local children in each of the places visited, who learn about amazing places and the challenges they face from climate, sustainability and nature depletion.

All guests of CFT Registered Companies will receive free lifetime access to Dodo Connect and Dodo4Kids

Access www.amazon.com for published **eBooks** for Malta, Uganda and Ukraine with more to come.

Click this link to find the MALTA Ebook

Click this link to find the UKRAINE Ebook

Click this link to find the UGANDA Ebook

SUNx Malta developed **Dodo4Kids** as an innovative educational initiative designed to spark climate awareness and sustainable travel habits in children aged 5–12 and their families. It.provides interactive stories, maps, games**,** colouring and eBooks to bring Climate Friendly Travel to life for early learners on holiday and at home.

Through the adventures of a friendly dodo, exploring real-world destinations together with climate, sustainability and nature threats in a fun, engaging format. Through storytelling, playful challenges, and immersive exploration, children learn about climate change, biodiversity, low-carbon tourism, and the importance of conservation—all while nurturing curiosity and empathy.

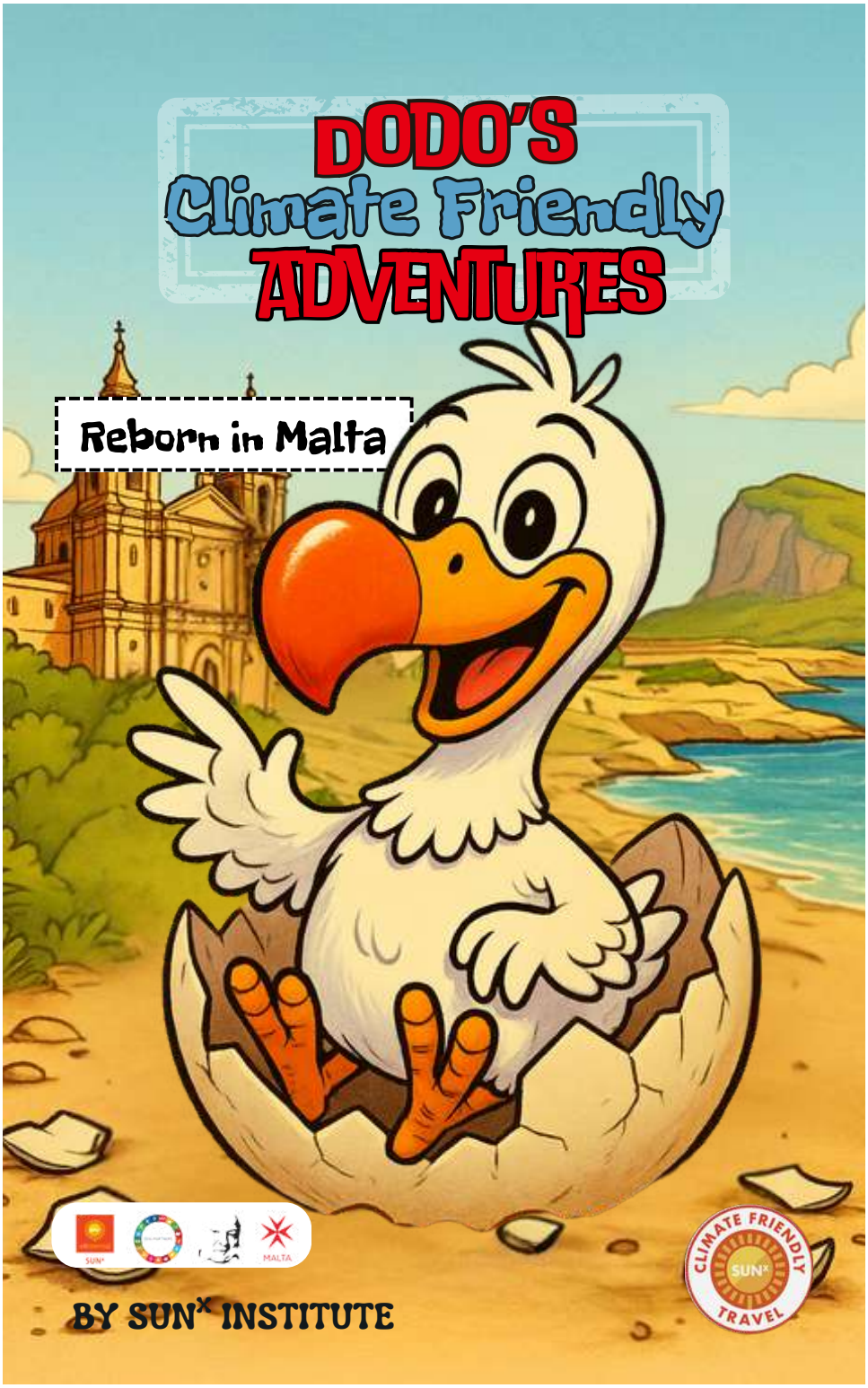
Our kids and grandkids are the ones who will be at increasing risk, as the existential climate crisis worsens and they will also be in decision-making positions in 2050. **And they will have the new transformational tool of AI embedded in their learning patterns. This is our hope for a positive outcome to today's existential Climate threat.**

We want to start their preparations NOW.

To encourage all tourism stakeholders to join us, as partners, in advancing this program we issued a formal invite on World Tourism Day, 27 September 2025**,**

The initiative is a cornerstone of SUNx Malta's broader **Education 2 Action** strategy and reflects our commitment to developing the next generation of Climate Friendly Travellers

eBooks for Malta, Mauritius, Bali, Uganda and Ukraine are already available online, with St. Vincent & The Grenadines in the pipeline. The Malta book is produced here.


DODO'S
Climate Friendly
ADVENTURES
Reborn in Malta
BY SUNX INSTITUTE
CLIMATE FRIENDLY
SUNX
TRAVEL

Malta
Tourism Authority

Foreword

I am genuinely pleased, both as a citizen of Malta and as a parent, to recognise Dodo4Kids as our gift to children around the world. It is intended to help teach them, in an appealing way, about the joys of travel but also to help them prepare for the big threats we all face as a global community.

Malta, as a Signatory to the UN Pact for the Future has committed to accelerate progress on the 2030 Sustainable Development Goals and to deliver on the 2050 Net Zero Paris Target - to turn climate and environmental challenges into opportunities for a cleaner, greener world.

At the UN Summit for the Future in September 2024, I affirmed that *"the importance of investing in young persons, providing them with ample opportunities and quality education to reach their full potential, empowering them, and ensuring their engagement and participation. They are the innovators, entrepreneurs, dreamers and creators who shape this world".*

I also acknowledged that, *"children are very much our present, we are committed to their protection from armed conflict and violence, to work towards the eradication of poverty and hunger, and to put more children in schools and invest in their education".*

I am also proud that through the Malta Tourism Authority, its Tourism Observatory and SUN[x] Malta, we are working with partners around the world - especially in Small Island and Developing States, as well as, importantly, in Ukraine - to deliver this entertaining series of books, cartoons and games to help prepare our young future global leaders - our children and their children - for that better future, where Climate Friendly Travel is the new norm.

And to welcome them one day, as visitors, to our beautiful Mediterranean island home.

Dr. Ian Borg
Deputy Prime Minister,
Minister of Foreign Affairs and Tourism.


FOR GROWN UPS
We want to invite you to join us on an exciting new journey to engage with tomorrow's travellers – early learners at home, at school and with their families on holiday.
At SUNX we want our Dodo4Kids program (www.dodo4kids.com) to be available to all kids around the world and we want to offer it to industry organizations and to companies, who share our vision for a cleaner, greener, future for our world, to deliver it with us.
Our Dodo is 'revived' from DNA in Malta, returns to his home in Mauritius and travels around the world to meet children to explore the beauties of their homelands and understand the challenges of Climate, Sustainability, and Nature.
We have cartoons, games and a growing list of exciting destinations to cover.
If you have any questions, email us at dodo@sunprogram.com
THANK YOU TO OUR PARTNERS!
Malta Tourism Authority
PATA Pacific Asia Travel Association
World Sustainable Hospitality Alliance
Malta Tourism Observatory
WAOSD
NTM FEE
ECO tourism KENYA
t-FORUM
Tripian
IIPT
LOW SEASON TRAVELLER
POP PROTECT OUR PLANET
Earth Charter
NTB
MURMURATION
LE RETOUR DODO

Plan For Our Kids

MAURICE
STRONG
1929-2015

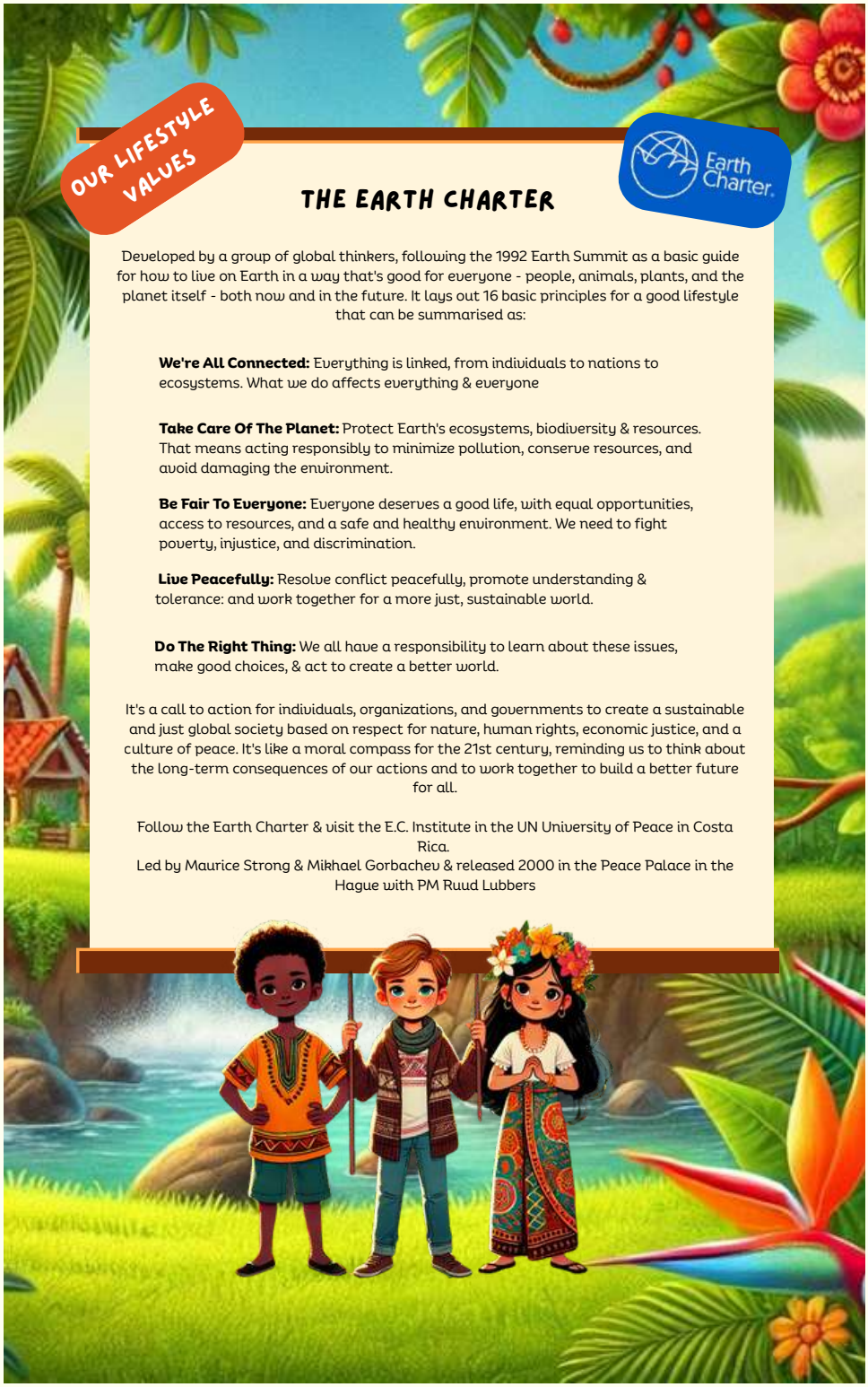
Dodo 4 Kids Publishing is a division of the SUNx Institute.

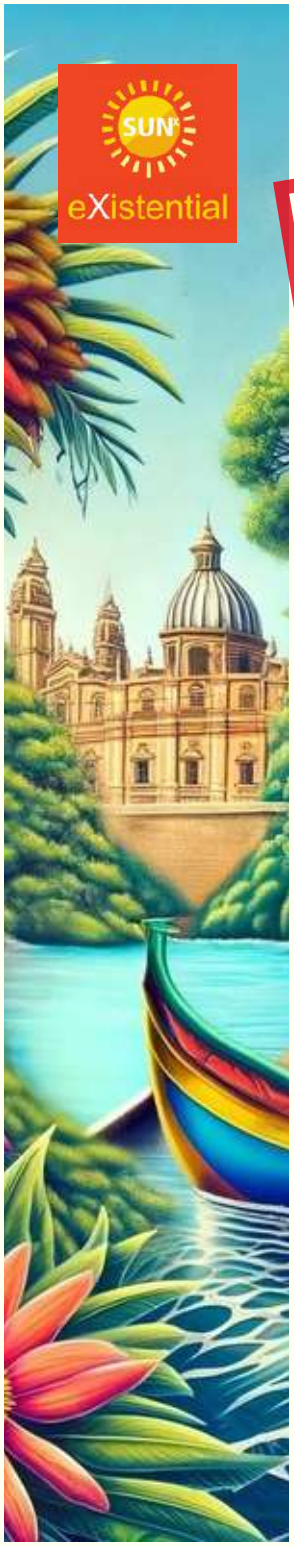
This is our first book developed from an original idea by Christian Joller and inspired by the late Maurice Strong Climate & Sustainability Activist, 1929-2015.

The final story and design are by Maya Newell, the original work by Christabel Andile Chisbo.

Overall production by the SUNx Malta Team of Maya Newell and Professor Geoffrey Lipman.

MAURICE AND OTHER DELAGATES ARE RIDING BICYCLES DURING RIO EARTH SUMMIT!


OUR LIFESTYLE VALUES
THE EARTH CHARTER
Earth Charter
Developed by a group of global thinkers, following the 1992 Earth Summit as a basic guide for how to live on Earth in a way that's good for everyone - people, animals, plants, and the planet itself - both now and in the future. It lays out 16 basic principles for a good lifestyle that can be summarised as:
We're All Connected: Everything is linked, from individuals to nations to ecosystems. What we do affects everything & everyone
Take Care Of The Planet: Protect Earth's ecosystems, biodiversity & resources. That means acting responsibly to minimize pollution, conserve resources, and avoid damaging the environment.
Be Fair To Everyone: Everyone deserves a good life, with equal opportunities, access to resources, and a safe and healthy environment. We need to fight poverty, injustice, and discrimination.
Live Peacefully: Resolve conflict peacefully, promote understanding & tolerance: and work together for a more just, sustainable world.
Do The Right Thing: We all have a responsibility to learn about these issues, make good choices, & act to create a better world.
It's a call to action for individuals, organizations, and governments to create a sustainable and just global society based on respect for nature, human rights, economic justice, and a culture of peace. It's like a moral compass for the 21st century, reminding us to think about the long-term consequences of our actions and to work together to build a better future for all.
Follow the Earth Charter & visit the E.C. Institute in the UN University of Peace in Costa Rica.
Led by Maurice Strong & Mikhael Gorbachev & released 2000 in the Peace Palace in the Hague with PM Ruud Lubbers



Dodo's Malta Mission: Operation DODO is back

MALTA

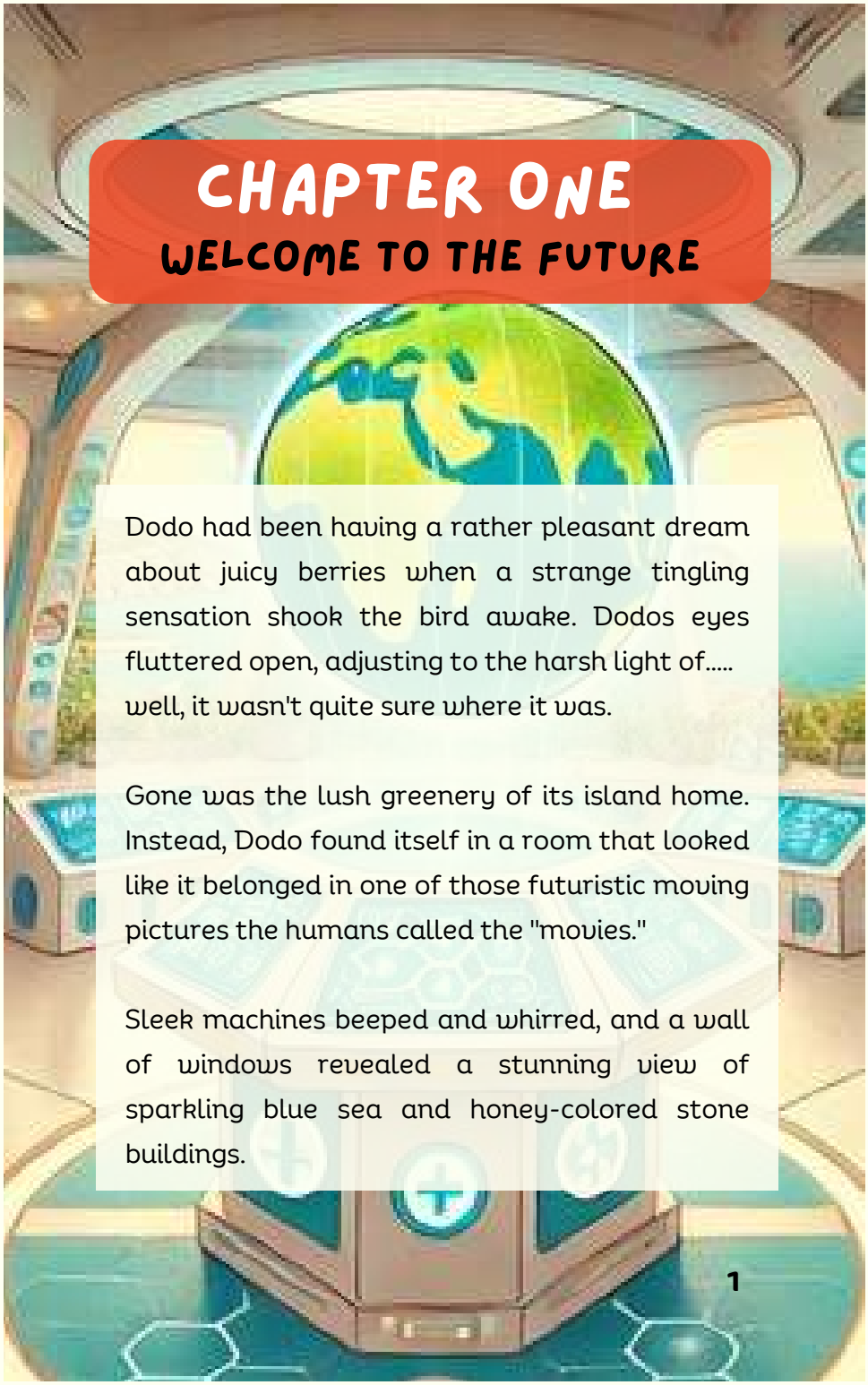
CHAPTER ONE:
WELCOME TO THE FUTURE

CHAPTER TWO:
CITY OF KNIGHTS

CHAPTER THREE:
MDINA'S MELTING MYSTERY

CHAPTER FOUR:
A BEACH IN PERIL

CHAPTER FIVE:
GHADIRA WINGS OF CHANGE

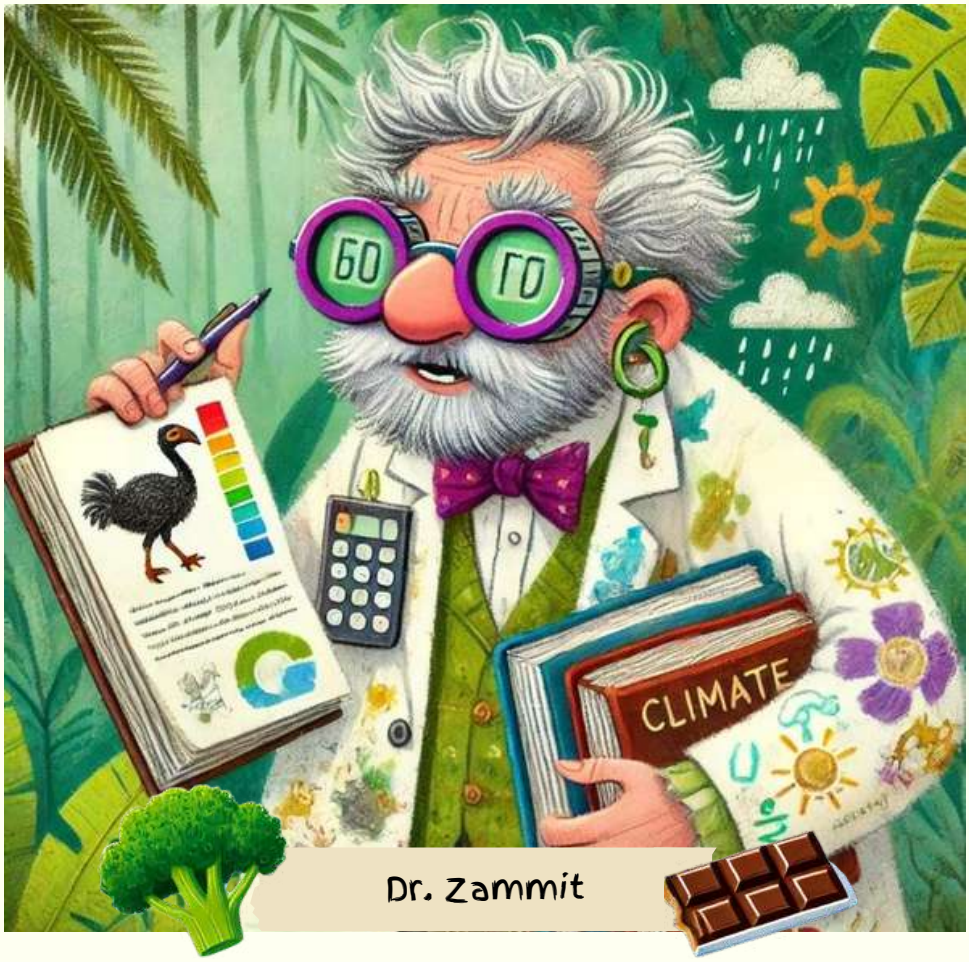


CHAPTER ONE
WELCOME TO THE FUTURE

Dodo had been having a rather pleasant dream about juicy berries when a strange tingling sensation shook the bird awake. Dodos eyes fluttered open, adjusting to the harsh light of..... well, it wasn't quite sure where it was.

Gone was the lush greenery of its island home. Instead, Dodo found itself in a room that looked like it belonged in one of those futuristic moving pictures the humans called the "movies."

Sleek machines beeped and whirred, and a wall of windows revealed a stunning view of sparkling blue sea and honey-colored stone buildings.



"Welcome to the Global Centre for Climate Friendly Travel!" boomed a voice that made Dodo jump.

Dodo turned to see a man with wild white hair and glasses placed dangerously on his nose. The man's lab coat was covered in colorful stains, and he had a wide grin like he had just discovered how to turn broccoli into chocolate.

"I'm Dr. Zammit," the man announced, "and you, my feathered friend, are about to embark on the adventure of a lifetime!"

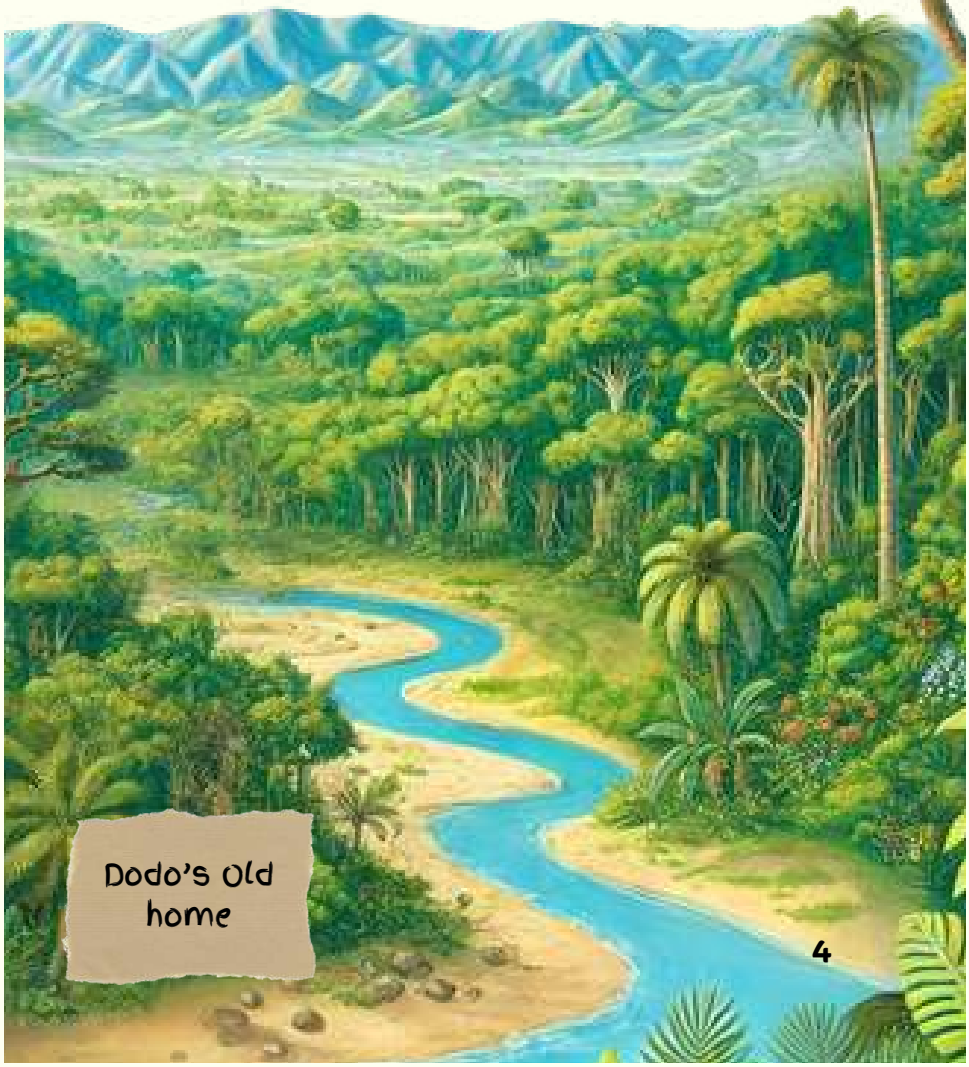
Dodo blinked, its head spinning.

"Global Centre for what now?
Where am I? And why do I feel like I've been asleep for a very, very long time?

"That's because you have been," came a new voice, calm and powerful. A woman stepped into view, her suit a big contrast to Dr. Zammit's chaotic appearance.

"I'm Mireille Attard, Mission Coordinator here at the Centre. And you're in Malta, in the year 2025."

Dodo's beak dropped open.
"2025? But that's...
that's hundreds of years in the future! How is this possible?"




Is it true? Is the Dodo really here?" the girl asked, bouncing on her toes.
"I told you my calculations were correct!" the boy said, with a confident smile.
"Dodo, meet Elena and Mateo," Mireille said. "They've been instrumental in Project Dodo Resurrection."
"Project what now?" Dodo squawked.
Dodo Resurrection
5

Mireille chuckled. "I know it's a lot to take in. Let me explain. This is the Global Centre for Climate Friendly Travel in Malta.

We're dedicated to understanding the impacts of climate change on tourism places around the world."

She gestured to a large display that sprang to life in the centre of the room, showing a rotating globe with various points highlighted.

"We brought you back because we need your help. Your view from the past could be helpful in our mission."

Dodo's head was spinning.

Climate change?

Global Centre?

Mission?

It was all too much.

"I think I need to sit down," Dodo mumbled looking for a place to rest.

Mireille raised an eyebrow.
"Dr. Zammit, we can't just—"

But before she could finish, Dr. Zammit had whisked Dodo, Elena, and Mateo out of the lab and into the bright Maltese sunshine.

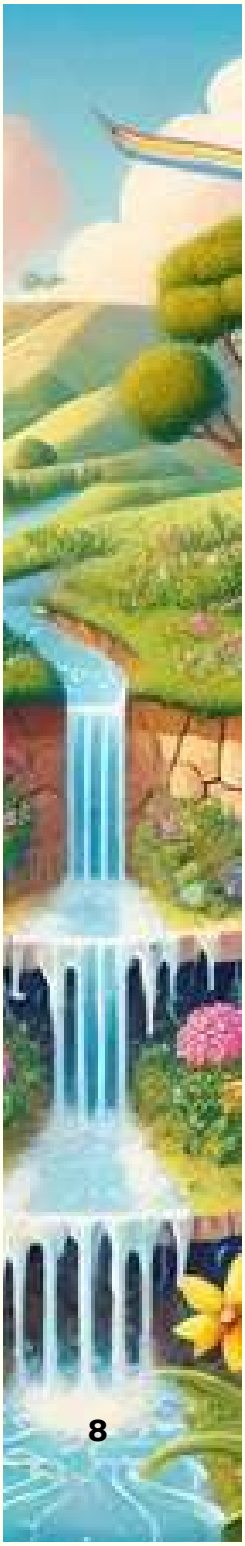
Dodo could feel its waddling was getting easier and easier.

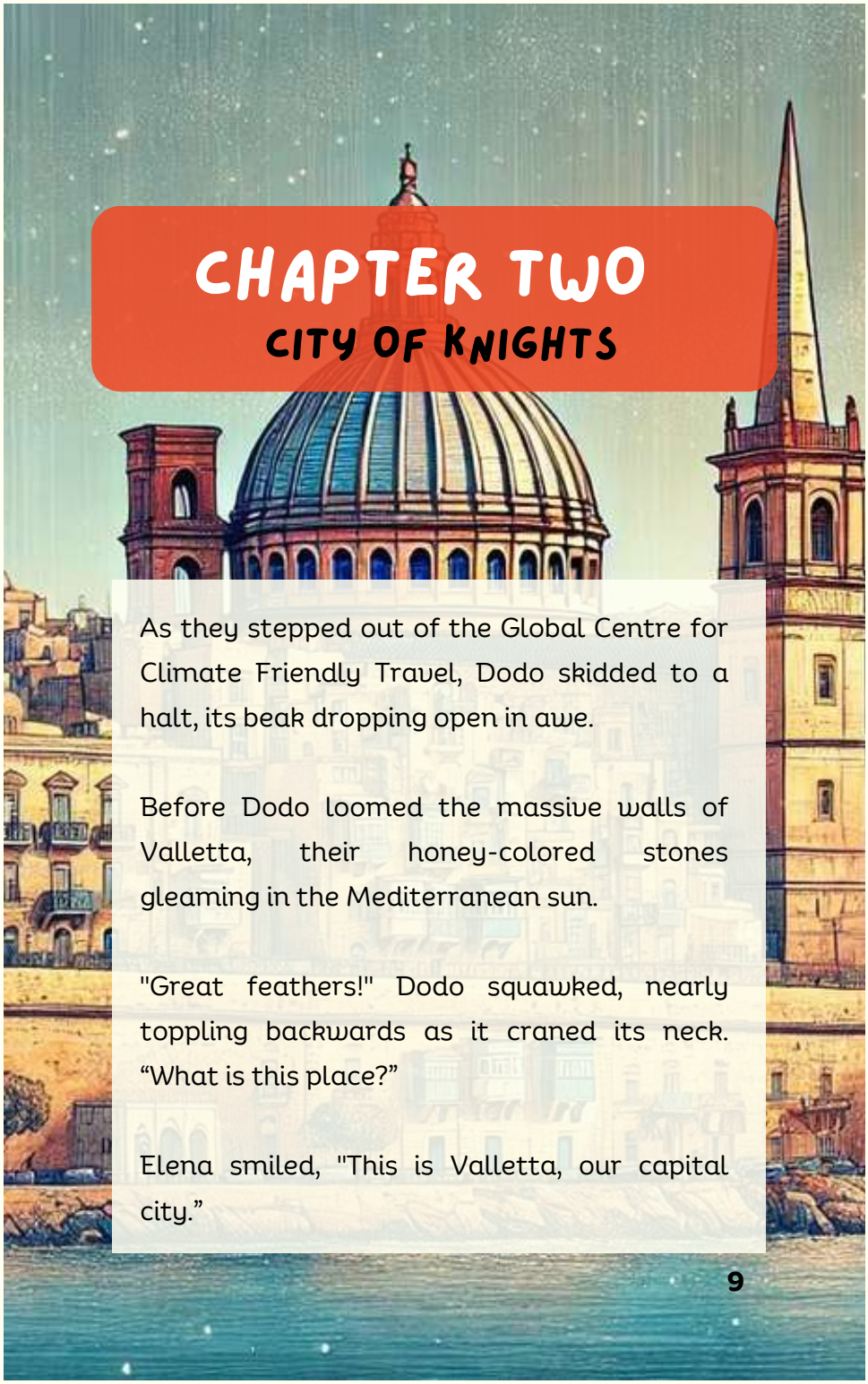
7

Dodo looked at its new group of friends and asked “You’re telling me the whole world needs my help, and it starts right here in Malta?”

Elena grinned.

“You got it, bird. Welcome to the future.”





CHAPTER TWO
CITY OF KNIGHTS

As they stepped out of the Global Centre for Climate Friendly Travel, Dodo skidded to a halt, its beak dropping open in awe.

Before Dodo loomed the massive walls of Valletta, their honey-colored stones gleaming in the Mediterranean sun.

"Great feathers!" Dodo squawked, nearly toppling backwards as it craned its neck. “What is this place?”

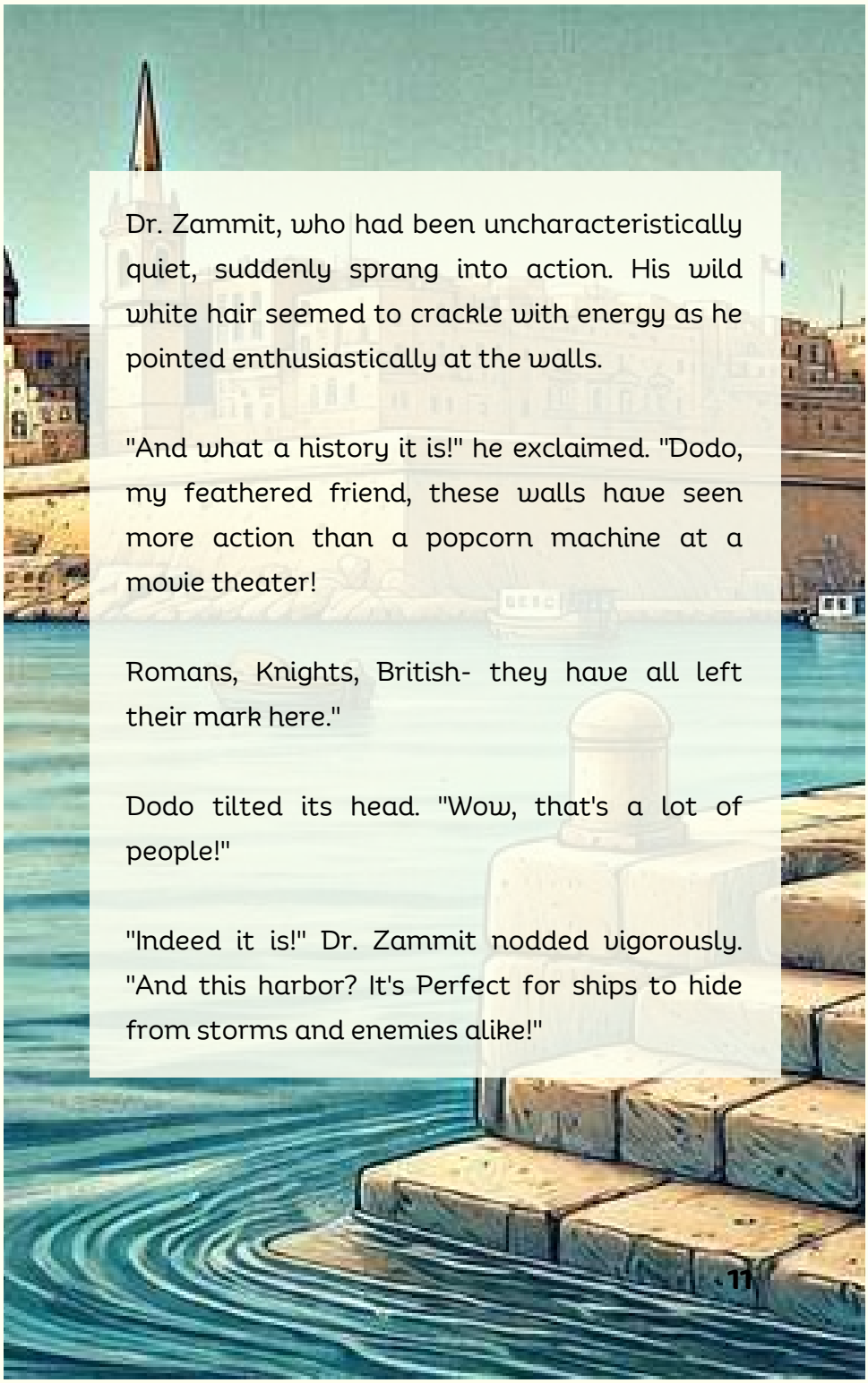
Elena smiled, "This is Valletta, our capital city.”

“Oh! I forgot to mention that Malta is the smallest state in the European Union!" Elena added.

Smallest?" Dodo looked skeptical, eyeing the towering fortifications.

"Oh yes," Mateo chimed in, his eyes sparkling with excitement. "But don't let the size fool you. This place has been at the centre of history for centuries!"

FORTIFICATION OF VALLETA


Dr. Zammit, who had been uncharacteristically quiet, suddenly sprang into action. His wild white hair seemed to crackle with energy as he pointed enthusiastically at the walls.
"And what a history it is!" he exclaimed. "Dodo, my feathered friend, these walls have seen more action than a popcorn machine at a movie theater!
Romans, Knights, British- they have all left their mark here."
Dodo tilted its head. "Wow, that's a lot of people!"
"Indeed it is!" Dr. Zammit nodded vigorously. "And this harbor? It's Perfect for ships to hide from storms and enemies alike!"
11

Elena beamed. "Exactly! And these massive walls were built to protect the people.

The Knights of St. John, a famous group of Christian warriors, ruled Malta for a long time and built many of these fortifications."

"Knights?" Dodo perked up.

Mateo laughed. "Yes, they built grand churches and monuments all over the island. In fact, there's a church for every day of the year in Malta!"

Wow!" Dodo exclaimed. "That's a lot of... wait, how many days are in a year again?"

"365!" Dr. Zammit interjected, his eyes twinkling.

"Sometimes 366! It's like having a birthday every day, but instead of cake, you get a church!"

"Speaking of big numbers," Mateo added, "guess how many people live here now?
Over half a million! And we get more than 3 and a half million visitors every year!"

Dodo's head spun.

"Half a million? Three million? But... but... where do you put them all? How much water do they need? How do you feed everyone?"

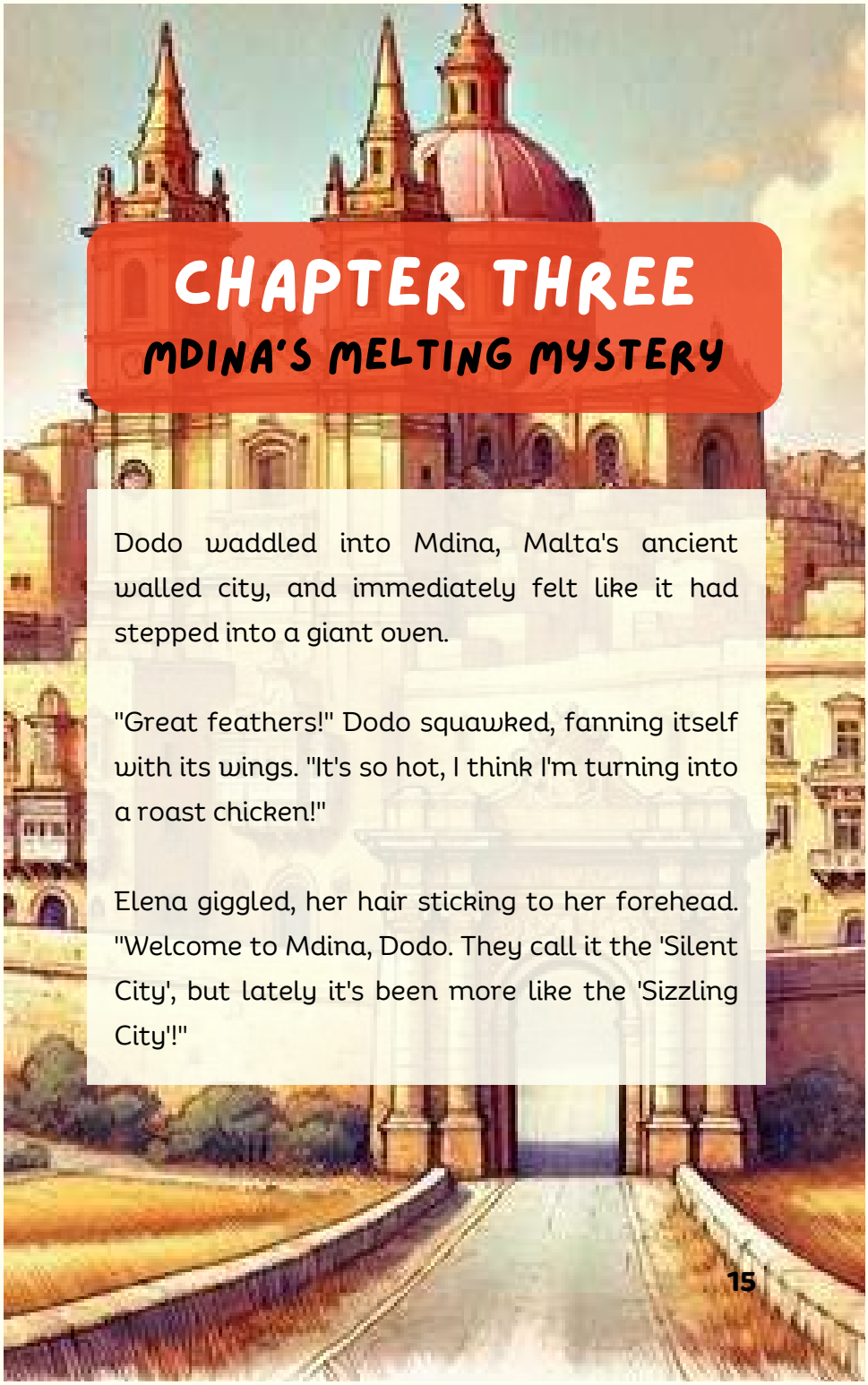
Dr. Zammit nodded excitedly. "Excellent questions! Those are exactly the kind of challenges we're here to explore."

As they set off into the winding streets of Valletta, Dodo's head swiveled left and right, trying to take it all in.

The history, the people, the sheer improbability of it all. It was almost too much for its little Dodo brain to process.

But one thing was clear:
this tiny island had a big story to tell, and an even bigger challenge ahead.

Dodo realised that Climate change wouldn't just affect a place or a building here - it would touch centuries of history and the lives of millions.



CHAPTER THREE
MDINA'S MELTING MYSTERY

Dodo waddled into Mdina, Malta's ancient walled city, and immediately felt like it had stepped into a giant oven.

"Great feathers!" Dodo squawked, fanning itself with its wings. "It's so hot, I think I'm turning into a roast chicken!"

Elena giggled, her hair sticking to her forehead. "Welcome to Mdina, Dodo. They call it the 'Silent City', but lately it's been more like the 'Sizzling City'!"

As they ventured deeper into the maze-like streets, Dodo noticed strange boxes hanging from many windows, humming quietly and dripping water.

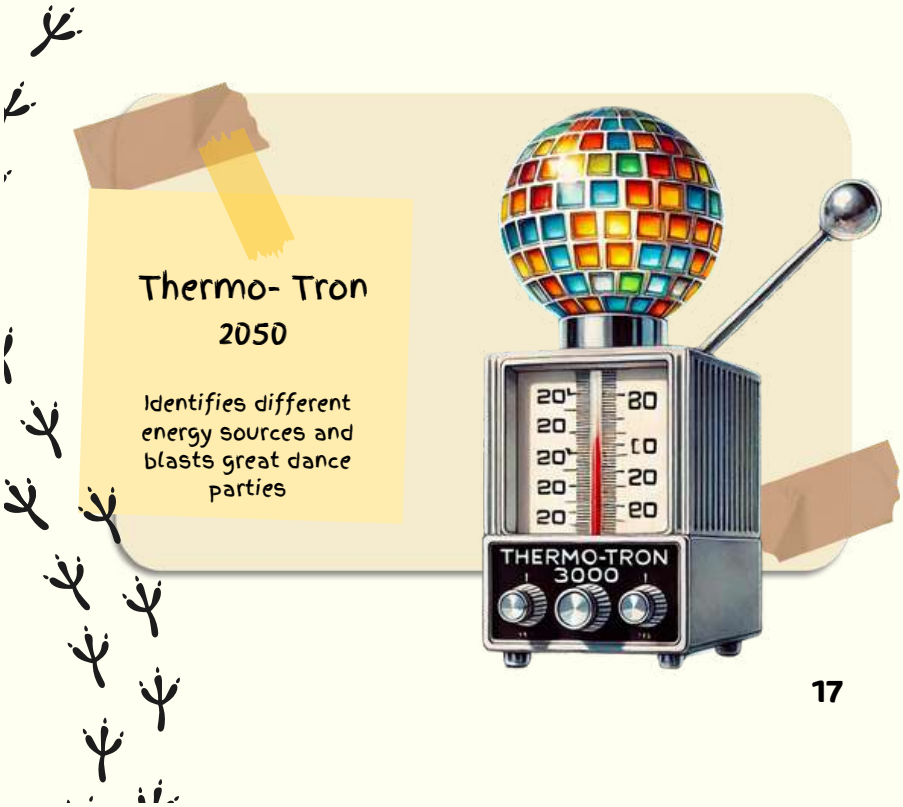
"What are those?" Dodo asked, tilting its head curiously.

"Strange, crying machines?"

Dr. Zammit, who had been suspiciously quiet, suddenly sprang into action. He whipped out a gadget that looked like a thermometer crossed with a disco ball.

"Aha!" he exclaimed. "My Thermo-Tron 2050 confirms it! Those are air conditioners, keeping the buildings cool!"

Just then, a blast of icy air from a nearby air conditioner sent Dodo spinning like a feathered top down the narrow street.



17

"Whoaaa!" Dodo shouted as it twirled, startling a group of napping cats and scattering a flock of pigeons.

When Dodo finally stopped, it found itself in a tangled heap of fur and feathers.

"Well," Dodo said, its voice muffled by cat fur, "I guess that's one way to cool off!"

"Speaking of cooling off," Elena wiped her forehead in the summer heat,
"Did you know some things we use actually make the whole Earth warmer?"

“They're things like coal and oil. Burning them for electricity releases gases that make the Earth hotter."

Dodo's eyes widened.
"So they're trying to cool down, but they're actually making everything hotter?
That's crazier than a penguin in a sauna!"

Just then, they came across a group of children huddled around a small model of Mdina.

The kids were placing tiny objects on the rooftops of the model buildings.

"What's going on here?" Dodo asked, peering at the miniature city.

"Are they building tiny air conditioners for tiny people?"

A young girl looked up, grinning. "No, silly bird! We're playing 'Power Planners'!

"Like the sun is tickling the roofs, and they laugh out electricity?" Dodo asked, trying to understand.

The children giggled, but Dr. Zammit nodded enthusiastically. "That's not a bad thought, Dodo!"


An elderly Maltese woman smiled from her seat nearby.
Oh dearie me," she chuckled, shaking her head, "when I was a tiny thing, we never bothered about where our power came from!
But now we need better ways to make electricity for our wonderful island. Especially with all these tourists coming to see our lovely old buildings.
Bless these children," she smiled fondly at the group, "they're already thinking up ways to make it work. To keep our beautiful Malta just as special!"
21

As they left Mdina, Dodo felt a mix of worry and hope.

The Silent City had a hot problem, but its people - especially its children - were working hard to find cool solutions.

"You know," Dodo said as they passed through the city gates, still picking cat hair off its feathers,

"I think Mdina taught me something important. Even small places can make a big difference when it comes to fighting climate change."

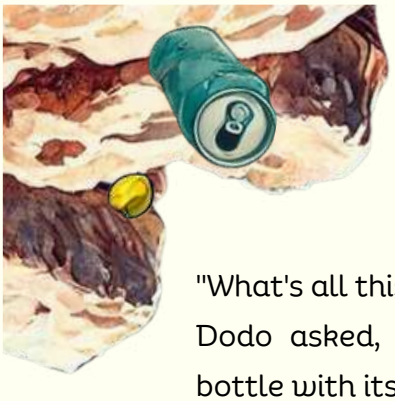

Mateo grinned. "That's right, Dodo. Every little bit helps. And who knows? Maybe Malta could become a leader in showing other small countries how to tackle big energy challenges!"
As they walked away from the ancient city, Dodo couldn't help but feel excited.
Solving Malta's energy puzzle wouldn't be easy, but with creative thinking, anything was possible.
Dodo just hoped the next stop on their journey would be somewhere a little cooler - and with fewer spinning surprises!
23

CHAPTER FOUR
A BEACH IN PERIL

Being out in Malta made Dodo remember how the warmth on its feathers felt nice, but everything else was overwhelming.

Their next stop was a place called Kalanka Bay. As they approached, Dodo's was shocked. The natural swimming pool, carved into limestone cliffs, was breathtakingly beautiful.

Turquoise water sparkled, and jagged rocks framed the scene like nature's own picture frame.



"What's all this stuff?"
Dodo asked, poking at a discarded bottle with its beak.

Elena sighed. "It's trash. People come here to enjoy the beauty, but they leave their garbage behind.

And with the sea levels rising because of climate change, a lot of it gets washed into the ocean."

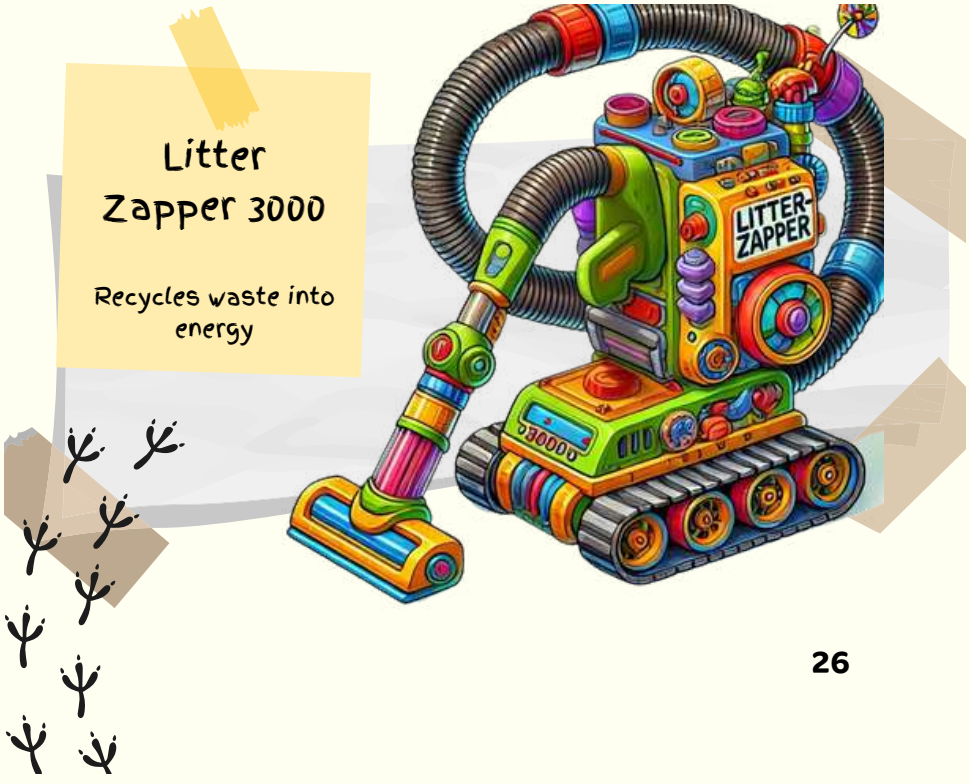
Mateo nodded.
"It's not just unsightly. It's dangerous for the animals that live in the sea."

Dodo felt a pang in its chest. Dodo might be from the past, but even Dodo could see this wasn't right.

"Can't we do something about it?"

Dr. Zammit's eyes lit up. "I thought you'd never ask!" He pulled out a strange contraption from his bag. It looked like a miniature vacuum cleaner attached to a backpack.

"Behold, the Litter-Zapper 3000!" Dr. Zammit said, holding his latest invention.



What followed was a whirlwind of activity. Dr. Zammit zoomed around the beach, his invention scooping up trash left and right.

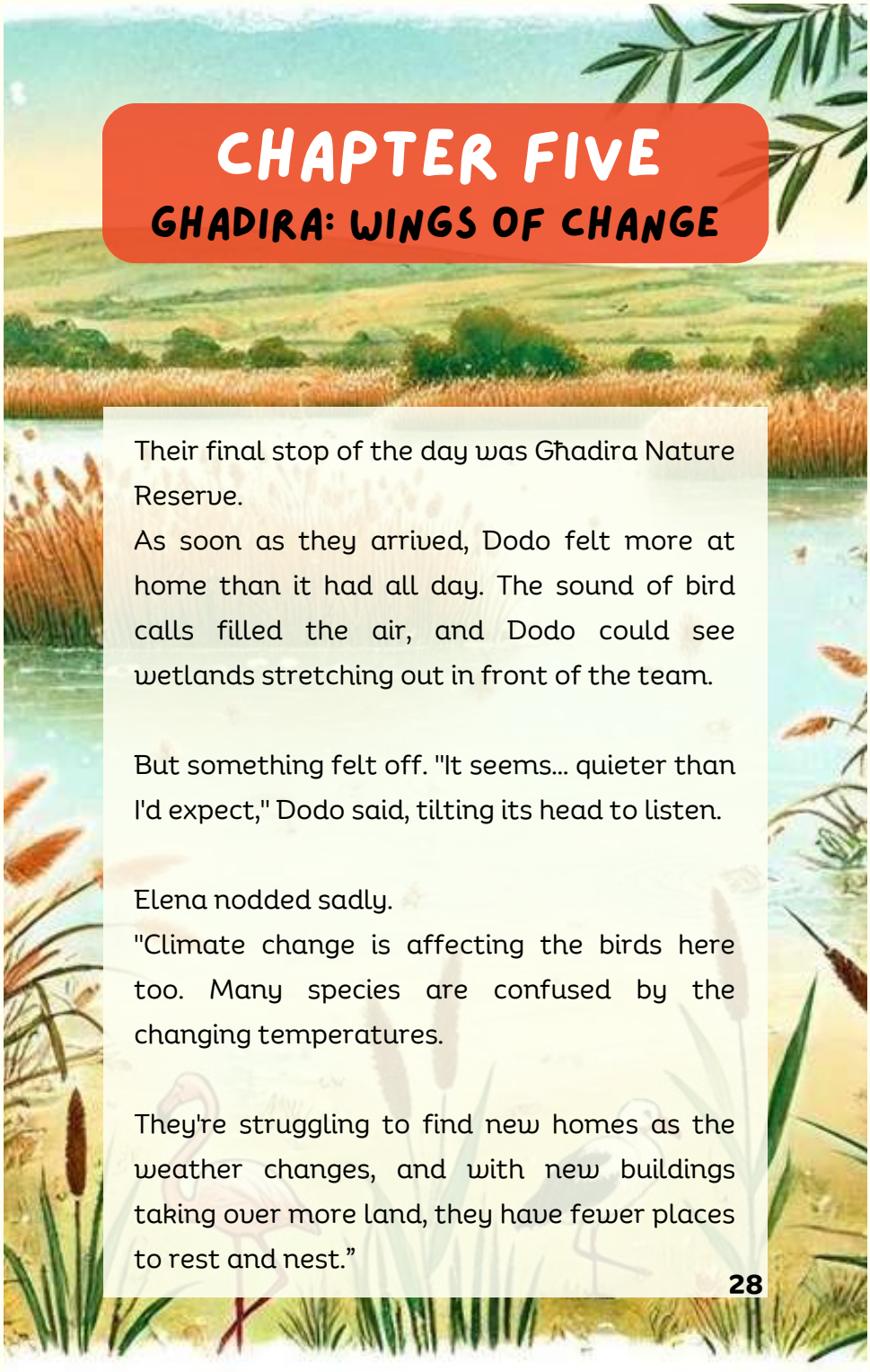
Elena and Mateo joined in, picking up larger pieces by hand.

By the time they finished, the beach was spotless, and Dodo felt a warm glow of accomplishment.

But there was one more place to visit in Malta.

KALANKA BAY

27



CHAPTER FIVE
GHADIRA: WINGS OF CHANGE

Their final stop of the day was Għadira Nature Reserve.
As soon as they arrived, Dodo felt more at home than it had all day. The sound of bird calls filled the air, and Dodo could see wetlands stretching out in front of the team.

But something felt off. "It seems... quieter than I'd expect," Dodo said, tilting its head to listen.

Elena nodded sadly.
"Climate change is affecting the birds here too. Many species are confused by the changing temperatures.

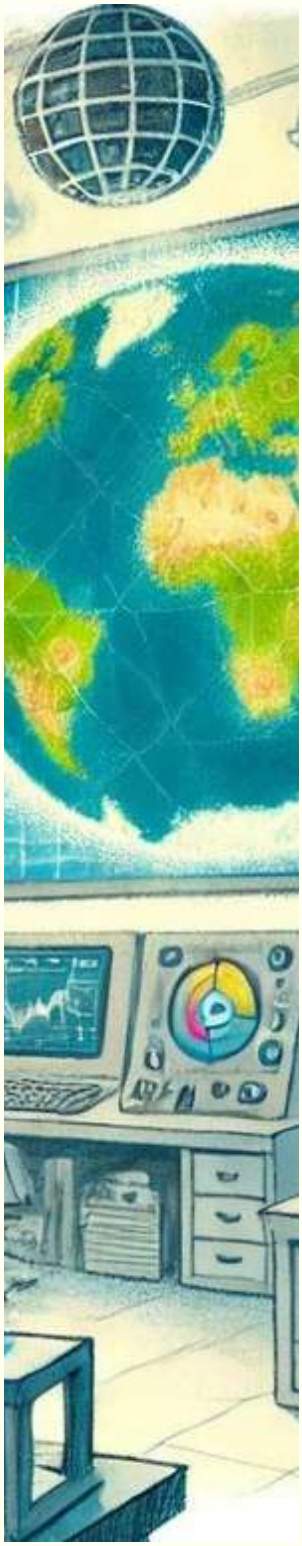
They're struggling to find new homes as the weather changes, and with new buildings taking over more land, they have fewer places to rest and nest."

Dodo's Friends

Dodo's heart sank. It might be the last of it kind, but Dodo felt a kinship with these struggling birds. Dodo looked down at its talons remembering how all its friends were now gone too.

"This is terrible! Is there anything we can do to help them?"

"Just then, Mireille's voice crackled through a device on Dr. Zammit's wrist.



I hope you've all had a good tour, but it's time to come back to the Centre. We have a lot to discuss."

Back at the Global Centre, Mireille was waiting for them, surrounded by floating displays showing data from their field trip.

"I see you've had quite the adventure," she said, her eyes twinkling. "What did you think, Dodo?"

Dodo looked at the displays, then back at Mireille.

"I think... I think I understand why you brought me back now.

The world has changed so much, and not all of it for the better.

But you're trying to fix it, aren't you?"

Mireille nodded, her expression serious.
"That's right. And we believe you can help us. Your view from the past, combined with our technology and knowledge, could be the key to finding solutions."

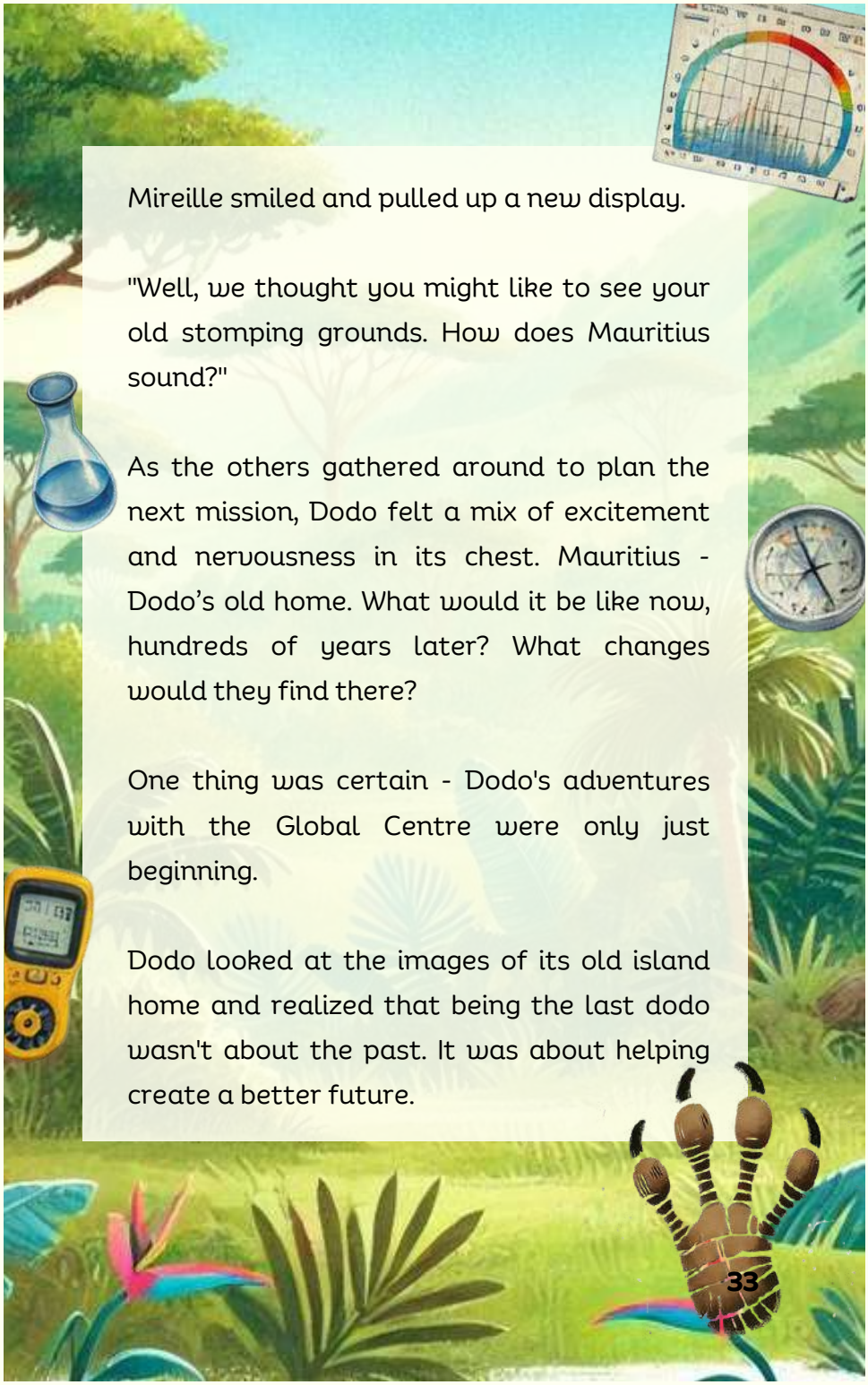
Dr. Zammit grinned, that manic glint back in his eye. "So, what do you say, Dodo? Ready to become a Climate Friendly Travel detective?"

Dodo looked around. Dr. Zammit's eyes twinkled with excitement. Mireille stood strong and ready. Elena and Nikola gave big, hopeful smiles.

Dodo thought about the beautiful places they had seen today, and all the challenges they faced.

Dodo thought about the birds at Għadira, struggling to adapt to a changing world.

Finally, Dodo nodded.
"You know what? I think I am ready. Where are we going next?"



Mireille smiled and pulled up a new display.

"Well, we thought you might like to see your old stomping grounds. How does Mauritius sound?"

As the others gathered around to plan the next mission, Dodo felt a mix of excitement and nervousness in its chest. Mauritius - Dodo's old home. What would it be like now, hundreds of years later? What changes would they find there?

One thing was certain - Dodo's adventures with the Global Centre were only just beginning.

Dodo looked at the images of its old island home and realized that being the last dodo wasn't about the past. It was about helping create a better future.

Dodo's Climate Friendly Adventures: Malta

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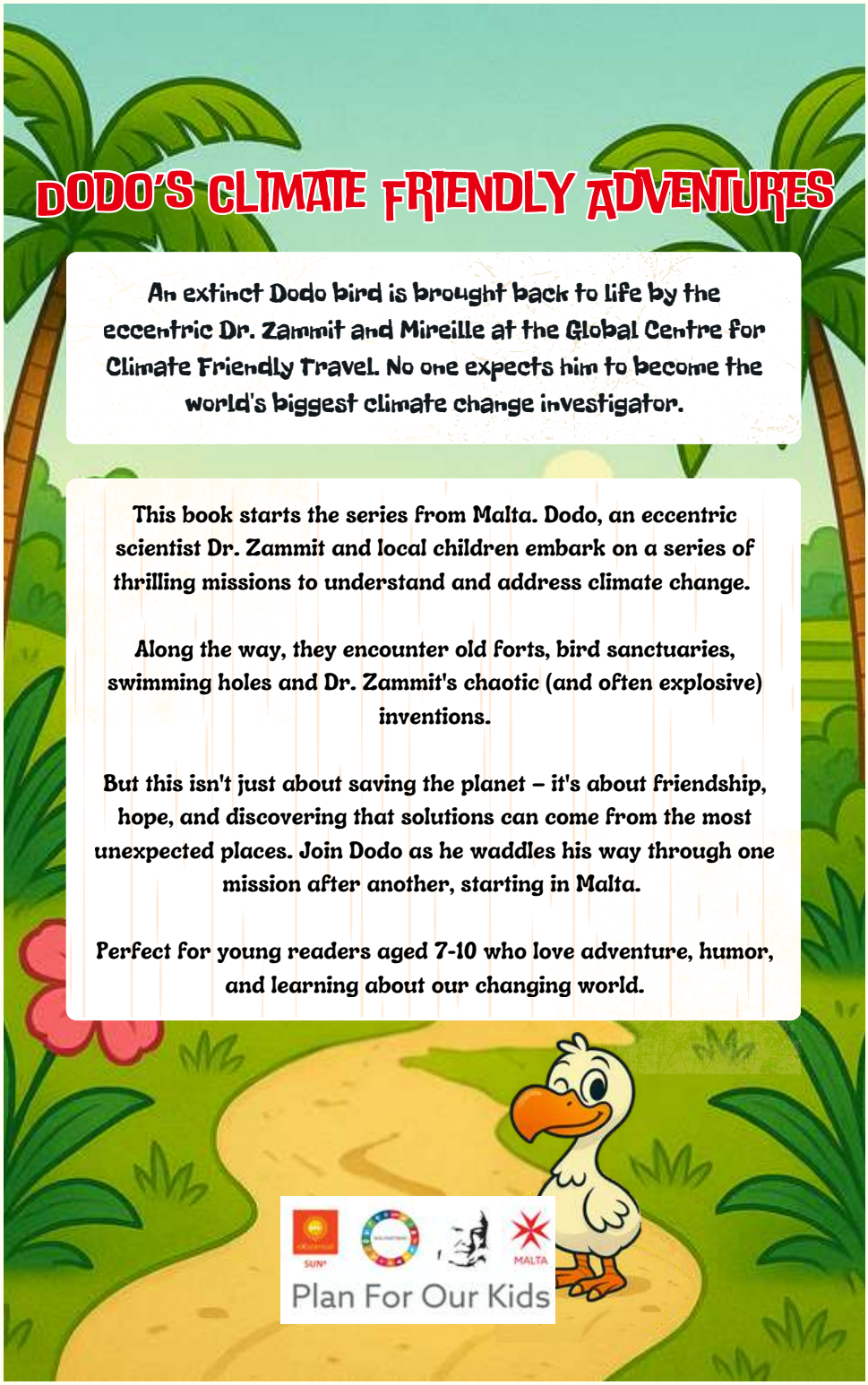

DODO'S CLIMATE FRIENDLY ADVENTURES
An extinct Dodo bird is brought back to life by the eccentric Dr. Zammit and Mireille at the Global Centre for Climate Friendly Travel. No one expects him to become the world's biggest climate change investigator.
This book starts the series from Malta. Dodo, an eccentric scientist Dr. Zammit and local children embark on a series of thrilling missions to understand and address climate change.
Along the way, they encounter old forts, bird sanctuaries, swimming holes and Dr. Zammit's chaotic (and often explosive) inventions.
But this isn't just about saving the planet – it's about friendship, hope, and discovering that solutions can come from the most unexpected places. Join Dodo as he waddles his way through one mission after another, starting in Malta.
Perfect for young readers aged 7-10 who love adventure, humor, and learning about our changing world.
MALTA
Plan For Our Kids

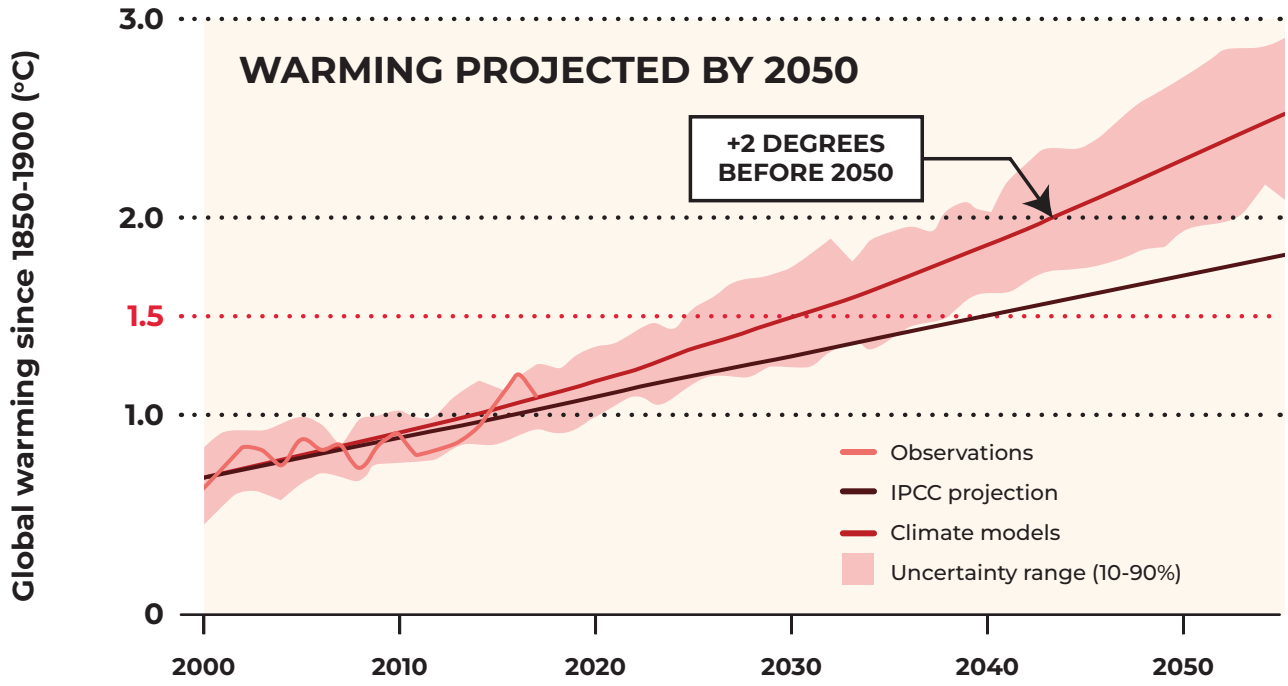
07

Afterthoughts

By Prof. Geoffrey Lipman

Afterthoughts

We know we are currently heading for way over Paris 1.5 in 2050 – as Extinction Rebellion's Chart below so clearly shows.



We are at an inflection point for humanity that is way, way beyond tourism to influence. At SUNˣ Malta, we can only hope that our global leaders find a way to bring some sanity to the situation – for the sake of our kids and grandkids.

At SUNx we believe that the Climate Crisis and its extreme, volatile weather is a given in our future but that our AI savvy kids and grandkids will be better able to handle it. To start their CFT learning process now with continuous local support we have created a unique CFT network, that goes from education to action and has planted seeds in chapters in developing and small island states around the world, as well as in our EU home. We have extended the programme from graduates to early learners with our Dodo4Kids. We are planning 100,000 trained Strong Climate Champions, globally, by 2030 as a living system for our outreach.

And with that hope, we continue our work, with Malta Tourism Authority and Malta Tourism Observatory; to help make Malta a global centre of Climate Friendly Travel.

Professor Geoffrey Lipman

October 2025, Malta

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