



GOZO REGIONAL
DEVELOPMENT AUTHORITY

GOZO REGIONAL DEVELOPMENT STRATEGY 2023-2033

AN APPLICATION OF THE WELLBEING INDEX



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Gozo Regional Development Strategy 2023-2033

Measuring Success Beyond Gross Domestic Product: An Application of the Wellbeing Index¹

¹ This wellbeing assessment report, evaluating the implementation of the Gozo Regional Development Strategy, was independently prepared by E-Cubed Consultants Ltd. The report was commissioned by the GRDA as part of its ongoing efforts to assess and monitor the outcomes of the Strategy.

1. Introduction

The Gozo Regional Development Strategy for 2023-2033 serves as a roadmap for Gozo's socio-economic and ecological development over the next decade. This strategy focuses on eight key priority areas that require policy impetus towards addressing Gozo's current and future needs. These include:

- i. Gozo Spatial Planning and Sustainable Urban Development;
- ii. Infrastructure and Accessibility;
- iii. Rural Development
- iv. Economic and Human Talent Development;
- v. New Economy;
- vi. Sustainable Tourism;
- vii. Social Development; and
- viii. Culture, Heritage and Arts.

This Strategy takes on a holistic approach towards the island's sustainable development, intending to safeguard and sustain the wellbeing of its inhabitants, visitors and future generations. At its core, this strategy seeks to valorise the small Mediterranean island Gozitan lifestyle through a sustainable development path, by building **economic** success through distinctiveness, engendering **social** cohesion through solidarity and networking, and by conserving and enhancing the unique natural and manmade **environmental** assets.

This report presents the methodology and findings of an exercise aimed at devising a wellbeing index for the island of Gozo. The wellbeing model applied in this report was initially developed for evaluating strategies and policies at the national level. This model was modified and extended to reflect the regional aspect of wellbeing and was used to determine the incremental effect of the Regional Development Strategy on Gozo's development and wellbeing.

This exercise is undertaken through the economy of wellbeing approach, which goes beyond the traditional markers of progress such as the Gross Domestic Product (GDP) and economic growth. Instead, it focuses on indicators that prioritise all three dimensions of sustainable development, namely environmental, social and economic wellbeing.

This report serves as a guide for interpreting the model and explains how various components under each dimension are used to construct an overall wellbeing index for the island of Gozo.

2. Measuring Wellbeing

2.1 Model Structure

As outlined in the introduction, the wellbeing exercise is structured around the three dimensions of sustainable development, each contributing to the overall wellbeing of a region or a nation. Each dimension is represented by a set of indicators, serving as drivers of the model.

The model incorporates three types of indicators, namely:

- i. Key policy inputs that can be influenced to enhance societal wellbeing;
- ii. Scenario descriptors, which cannot be influenced through policy. These are regarded as deep parameters, suggesting that they remain relatively stable over an extended period; and
- iii. The outputs of the equations serve as outcome indicators and benchmarks against predetermined sustainability constraints.

These indicators were selected based on expert knowledge and a review of international literature, while acknowledging the inherent subjectivity in defining wellbeing.

The model considers two scenarios, namely the **Business-as-Usual (BAU)** and the **Benchmark Scenario**.

The **BAU Scenario** represents a 'do-nothing' scenario, wherein the economy continues to operate without significant changes in environmental, social and economic policies aimed at enhancing Gozo's wellbeing. The BAU scenario assumes that economic, social, and environmental conditions remain largely unchanged, reflecting a path where no specific interventions or policy shifts are implemented to address existing challenges or improve overall wellbeing.

Conversely, the **Benchmark Scenario** outlines the anticipated wellbeing outcomes resulting from the implementation of measures outlined in the Gozo Regional Development Strategy. Assessing the incremental performance between these two scenarios is crucial to understanding the Strategy's potential contribution to improving Gozo's wellbeing. These scenarios are projected over 30 years, up to 2052.

Within the benchmark scenario, the year 2022 reflects the current situation and aligns with the BAU scenario. Anticipated impacts of the strategy are expected to materialize by 2033, with ongoing enhancements in Gozo's wellbeing stemming from the long-term measures outlined in the strategy.

This structured approach allows for an evaluation of the Strategy's effectiveness in fostering sustained wellbeing improvements for Gozo over the specified timeframe.

2.2 Data Sources

The wellbeing model is built using historical regional data obtained from various sources, primarily through the National Statistics Office (NSO) regional statistics portal, its annual statistical publications, and specific data requests for relevant unpublished information. Where regional data was unattainable due to limited sample size or data collection gaps; national data was used and adjusted to reflect Gozo's economic conditions.

Several key assumptions were considered, and regression analyses were conducted to project results for the years 2032, 2042 and 2052. For the economic dimension, per capita consumption is derived as a function of social and other exogenous variables using a Cobb-Douglas production function. Regarding the social dimension, indicators such as the at-risk-of-poverty rate are utilised as explanatory variables for changes in wellbeing, in conjunction with other economic and exogenous factors. As for the environmental dimension, the model incorporates proposed outcome indicators aimed at assessing the economy's environmental performance, modelled as a function of economic, social and environmental remediation indicators.

2.3 Critical Variables

The wellbeing model relies on two distinct categories of variables, each serving a specific role in assessing overall wellbeing. The first category consists of **Policy Induced Drivers**, representing variables that are directly influenced by policy decisions and governmental actions. Within this category, the model encompasses two subgroups: environmental policy drivers and socio-economic policy drivers.

In contrast, the second category comprises **Framework Conditions**, which encompass variables representing the broader environmental and socio-economic factors shaping the local context. Unlike Policy Induced Drivers, these factors are generally considered as given and are not directly influenced by policy interventions.

By combining both Policy Induced Drivers and Framework Conditions, the wellbeing index captures the immediate impacts of policy decisions while also accounting for the underlying contextual factors shaping the overall wellbeing in a given area.

The specific policy-induced drivers and framework conditions used in the modelling of the wellbeing index are listed and explained in the Annex.

2.4 Derivation of the Wellbeing Index

The overall wellbeing index comprises some of the most important indicators of the model encompassing all three dimensions of wellbeing. Different weights have been assigned to these indicators, which shape the economic, social and environmental indices. A logarithmic model is used to correct extremes and derive the overall index.

There is ample evidence highlighting the need to prioritise environmental and social wellbeing factors, particularly by fostering economic development that supports these dimensions.² It is furthermore true that in turn, a society of strong and healthy individuals contributes to enhanced productivity and fosters competitive business environments, implying a win-win situation.³ The valorisation of Gozo's environmental and natural resources likewise contributes to the competitiveness of most economic activities.

The economic development of Gozo is strongly conditioned by the functionality of society and the environment for it to be sustainable. Environmental and social dimensions outweigh economic factors in terms of contribution to wellbeing once a country or a region achieves a sufficient state of development.⁴ The Table below illustrates the weights assigned to each wellbeing dimension and the respective component indices. Each of the three main indices contributing to the Overall Wellbeing Index represents the weighted average of a number of other indices.

Table 1: Weighting assigned to each of the three wellbeing dimensions.

Weights	
Environmental Well-Being	45%
vkm fossil fuel index	25%
Built-up area index	25%
Water quality index	10%
Waste: landfill space required	10%
Renewable power	10%
Power decoupling	10%
Climate	10%
Economic Well-Being	20%
Per capita GDP	90%
Dependence on the national economy	10%
Other	0%

² World Health Organisation (WHO): http://www.euro.who.int/_data/assets/pdf_file/0005/419468/Country-Health-Profile-2019-Malta.pdf?ua=1.

³ OECD Observer: https://oecdobserver.org/news/archivestory.php/aid/1241/Health_and_the_economy:_A_vital_relationship_.html and World Health Organisation (WHO): <https://www.who.int/>.

⁴ Oxfam's Humankind Index by Katherine Trebeck and Asha Abeyasekera and Bhutan's Gross National Happiness Index (GNH) in 'Bhutan 2020'; A Vision for Peace, Prosperity and Happiness.

Weights	
Social Well-Being	35%
Life Expectancy	20%
At Risk of Poverty	30%
Early School Leavers	20%
Other	30%

Environmental wellbeing carries the highest weighting of 45%, reflecting its significant impact. The built-up area and vkm fossil fuel indices were allocated the highest weighting, indicating their substantial influence on the environment. Social wellbeing follows with a weight of 35%, determined by factors such as life expectancy, at-risk-of-poverty rate, and early school leavers. Economic wellbeing is assigned a weighting of 20%, which is mostly being influenced by Gozo's per capita GDP performance (90%) and Gozo's dependence on the national economy (10%), representing the imbalance between expenditure and revenue generated in Gozo.

The indices that form the overall wellbeing index are assigned a value of 100% in 2022, representing the current state. A value lower than 100% by 2052 indicates a deterioration compared to 2022, while a value higher than 100% signifies an improvement in wellbeing in that area compared to 2022.

2.5 Scenario Analysis

Two scenarios are considered in the wellbeing model to determine the incremental effect of policy measures proposed for implementation in Gozo through the Gozo Regional Development Strategy.

- i. The **BAU scenario** is a 'do-nothing' scenario, where the economy continues to function without any major changes in economic, environmental or social policy aimed at improving wellbeing.
- ii. The **Benchmark scenario** represents the implementation of the Gozo Regional Development Strategy, aimed at achieving a better quality of life and wellbeing in Gozo through sustainable development measures.

2.5.1 BAU Scenario

In the BAU scenario, data for 2022 serves as the foundation, while future estimations for 2032, 2042, and 2052 rely on assumptions about anticipated developments. This occurs in the absence of the implementation of the Gozo Regional Development Strategy, thereby allowing for autonomous economic function. This scenario depicts a situation where new regional policies or initiatives aimed at enhancing Gozo's economic, social, and environmental wellbeing are lacking. Detailed model inputs are outlined in Table 2.

Overall, in the BAU scenario, where economic progress reflects organic growth patterns rather than being driven by specific regional policies or interventions, there is an anticipated decline in the percentage of newly constructed housing units. This percentage is projected to drop from 80% in 2022 to only 5% by 2052, while other non-residential built-up space per resident is expected to remain consistent at 134m². Water abstraction is also predicted to remain stable. Modest enhancements in renewable energy-derived electricity generation are anticipated over time. There is an expectation of decoupling between electricity and GDP growth, indicating a reduction in fossil fuel usage as GDP rises. Moreover, the proportion of vehicle kms covered by electric vehicles is projected to surge from 5% in 2022 to 80% by 2052. The cost of electric conversion per vehicle km is anticipated to decrease from an estimated €0.7 in 2022 to €0.3 by 2052. Conversely, the cost of using fossil fuel-powered cars per vehicle km is expected to escalate over the next three decades, reaching €172.673 million by 2052. The number of private cars per resident is also foreseen to dwindle over time, from 0.67 in 2022 to 0.35 by 2052.

Moreover, the generation of municipal, commercial, and construction & demolition (C&D) waste is expected to decline due to existing national policy measures. Despite a notable increase in the foreign population in Gozo, it is anticipated to taper off as the island nears full capacity. The share of the new economy in GDP is projected to steadily increase, peaking at 10.7% by 2042 before declining thereafter. Similarly, the ratios of tourism and construction spending to GDP are expected to gradually decline. In the absence of the Gozo Regional Development Strategy implementation, social investment is also predicted to gradually rise as a result of national policies.

Table 2: BAU Scenario

BAU Scenario				2022	2032	2042	2052
Policy Induced Drivers	Environmental Policy Drivers	Land Use	% of units constructed generating new housing	80%	30%	20%	5%
			Hotel beds	1,998	2,091	2,323	2,556
			Target built-up area (m ² m)	8.0	8.0	8.0	8.0
		Water	Demand per resident (m ³)	62	62	62	62
			% from Reverse Osmosis	41%	41%	41%	41%
		Electricity	GDP elasticity (decoupling)	0.8	0.6	0.4	0.2
			% from renewable	33%	35%	35%	35%
		Inland Transport	Private cars per resident	0.67	0.6	0.55	0.35
			Commercial vehicles per m GDP	9.9	9.5	9	8.5
			Proportion of vkm from electric	5%	10%	45%	80%
		Waste	Municipal ktonnes per unit of consumption	0.055	0.042	0.031	0.023
			Commercial ktonnes per unit of GDP	0.016	0.014	0.013	0.012
			Proportion of waste that is landfilled	0%	0%	0%	0%
			C&D m ³ per unit of construction GDP	1.068	0.801	0.601	0.451

BAU Scenario				2022	2032	2042	2052	
Policy Induced Drivers	Socio-Economic Policy Drivers	Population Growth	Annual Population Growth - Foreign	12.0%	5.0%	2.5%	0.0%	
		Sectoral Economic Shares	Tourist spend to GDP ratio	30.3%	28.0%	26.0%	25.0%	
			Construction spend to GDP ratio	23.3%	13.0%	12.2%	11.3%	
			New Economy share of GDP	8.0%	9.3%	10.7%	0.2%	
		Economic Demand	Consumption Adjustment (%)	0%	0%	0%	0%	
		Social Investment	Health Public Expenditure (€m)	48	56	63	70	
			Poverty Public Expenditure (€m)	100	108	115	122	
			Education Public Expenditure (€m)	44	52	59	67	
		Framework Conditions	Environmental Framework Conditions	Land Use	Hotel m² per bed	70	70	70
Road area per car m²	2.72				2.72	2.72	2.72	
Other built up per resident m²	134.15				134.15	134.15	134.15	
Residential m² per unit	130				130	130	130	
Productive m² per employee	30				30	30	30	
Cost of reducing built-up area per m³ (€)	128.00				128.00	128.00	128.00	
Water	Tourist demand differential			50%	50%	50%	50%	
Inland Transport	km per private car per year			1,427	1,427	1,427	1,427	
	km per commercial vehicle per year			1,982	1,982	1,982	1,982	
	Cost of electric conversion per vkm (€)			0.700	0.525	0.394	0.295	
	Cost of fossil fuel car use of private car per vkm (€m)			88,000	110,223	141,984	189,559	
Waste	Cost of waste treatment per tonne (€)			180	180	180	180	
	Landfill Cost over 2020 per m² (€)			0	125	150	300	
	C&D waste cost per tonne (€)			30	70	70	70	
Water	Cost of RO water per m³ (€)			0.50	0.45	0.40	0.35	
Electricity	Electricity cost differential on fossil fuel per MWh (€)			20	0	-10	-40	
	Cost of Decoupling per Twh (€m)			20	20	20	20	
Climate Emissions	CO₂ per vkm fossil fuel (g)			167	150	135	122	
	CO₂ per MWh electricity (kg)			302	271	244	220	
	CO₂ per tonne of waste (kg)			318	318	318	318	
	CO₂ per unit GDP other (kg)			64,818	45,373	27,224	13,612	
Socio-Economic Policy Drivers	Population Growth			Annual Population Growth - Maltese	0.5%	0.4%	0.3%	0.2%
	Production Function			Investment to GDP ratio	22.0%	40.0%	40.0%	40.0%
				Crowding out effect of non prod inv	70.0%	70.0%	70.0%	70.0%
				Depreciation of productive capital	20.0%	22.0%	24.0%	26.0%
	Sectoral Variables			Growth in tourist per night spend	1.0%	1.3%	1.5%	1.8%
				Growth in construction prices	5.0%	2.0%	1.5%	1.5%
	Economic Demand			Growth floor for fiscal injections	1.2%	1.2%	1.2%	1.2%

2.5.2 Benchmark Scenario

As mentioned in earlier sections, the benchmark scenario portrays the anticipated wellbeing situation following the implementation of the Gozo Regional Development Strategy. The year 2022 aligns with the BAU scenario since the strategy's implementation begins in 2023. The projected expenditure on measures outlined in the strategy is used to influence BAU indicators, thereby determining the future projections of the benchmark scenario. Consequently, the years 2032, 2042, and 2052 depict expected welfare-enhancing changes resulting from the strategy's implementation. This involves the adoption of new policies and measures aimed at improving the wellbeing of Gozo and its inhabitants, such as reducing built-up areas and enhancing open spaces, minimizing waste generation, increasing the proportion of vehicle kms from electric vehicles, enhancing social welfare services through public expenditure, fostering employment, and stimulating new economy investment, among other initiatives. Relevant model inputs are provided in the Table below.

Table 3: Benchmark Scenario

Benchmark Scenario				2022	2032	2042	2052
Policy Induced Drivers	Environmental Policy Drivers	Land Use	% of units constructed generating new housing	80%	30%	20%	5%
			Hotel beds	1,998	2,091	2,323	2,556
			Target built-up area (m ² m)	8.0	8.0	8.0	8.0
		Water	Demand per resident (m ³)	62	62	62	62
			% from Reverse Osmosis	41%	41%	41%	41%
		Electricity	GDP elasticity (decoupling)	0.80	0.57	0.37	0.17
			% from renewable	33%	39%	39%	39%
		Inland Transport	Private cars per resident	0.67	0.60	0.55	0.35
			Commercial vehicles per m GDP	9.90	9.50	9.00	8.50
			Proportion of vkm from electric	5%	29%	64%	100%
		Waste	Municipal ktonnes per unit of consumption	0.06	0.04	0.03	0.02
			Commercial ktonnes per unit of GDP	0.02	0.01	0.01	0.01
			Proportion of waste that is landfilled	0%	0%	0%	0%
			C&D m ³ per unit of construction GDP	1.07	0.80	0.60	0.45
	Socio-Economic Policy Drivers	Population Growth	Annual Population Growth - Foreign	12.0%	5.0%	2.5%	0.0%
		Sectoral Economic Shares	Tourist spend to GDP ratio	30.3%	28.0%	26.0%	25.0%
			Construction spend to GDP ratio	23.3%	13.0%	12.2%	11.3%
			New Economy share of GDP	8.0%	9.4%	0.2%	0.2%
		Economic Demand	Consumption Adjustment (%)	0%	0%	0%	0%
		Social Investment	Health Public Expenditure (€m)	48	62	68	76
			Poverty Public Expenditure (€m)	100	108	115	123
			Education Public Expenditure (€m)	44	66	74	81

Benchmark Scenario				2022	2032	2042	2052
Framework Conditions	Environmental Framework Conditions	<i>Land Use</i>	Hotel m ² per bed	70	70	70	70
			Road area per car m ²	2.72	2.72	2.72	2.72
			Other built up per resident m ²	134	120	120	120
			Residential m ² per unit	130	130	130	130
			Productive m ² per employee	30	30	30	30
			Cost of reducing built-up area per m ³ (€)	128	128	128	128
		<i>Water</i>	Tourist demand differential	50%	50%	50%	50%
		<i>Inland Transport</i>	km per private car per year	1,427	944	944	944
			km per commercial vehicle per year	1,982	1,982	1,982	1,982
			Cost of electric conversion per vkm (€)	0.70	0.53	0.39	0.30
			Cost of fossil fuel car use of private car per vkm (€m)	88,000	110,223	141,984	189,559
		<i>Waste</i>	Cost of waste treatment per tonne (€)	180	180	180	180
			Landfill Cost over 2020 per m2 (€)	0	125	150	300
			C&D waste cost per tonne (€)	30	70	70	70
		<i>Water</i>	Cost of RO water per m3 (€)	0.50	0.45	0.40	0.35
		<i>Electricity</i>	Electricity cost differential on fossil fuel per MWh (€)	20	0	-10	-40
			Cost of Decoupling per Twh (€m)	20	20	20	20
		<i>Climate Emissions</i>	CO2 per vkm fossil fuel (g)	167	150	135	122
			CO2 per MWh electricity (kg)	302	271	244	220
			CO2 per tonne of waste (kg)	318	318	318	318
			CO2 per unit GDP other (kg)	64,818	45,373	27,224	13,612
	Socio-Economic Policy Drivers	<i>Population Growth</i>	Annual Population Growth - Maltese	0.5%	0.4%	0.3%	0.2%
		<i>Production Function</i>	Investment to GDP ratio	22.0%	44.0%	41.1%	41.1%
			Crowding out effect of non prod inv	70.0%	70.0%	70.0%	70.0%
			Depreciation of productive capital	20.0%	22.0%	24.0%	26.0%
		<i>Sectoral Variables</i>	Growth in tourist per night spend	1.00%	1.40%	1.65%	1.90%
			Growth in construction prices	5.00%	2.00%	1.50%	1.50%
		<i>Economic Demand</i>	Growth floor for fiscal injections	1.20%	1.20%	1.2%	1.20%

3. Resulting Implications of the Regional Development Strategy on Gozo's Wellbeing

Drawing on historical data, projected indicators, and associated assumptions, Section 3.1 constructs an overall wellbeing index for the island of Gozo under the BAU scenario. This index is primarily influenced by ongoing national policies and the organic growth of the economy. Section 3.2 delineates the overall wellbeing index for the benchmark scenario, which reflects the state of the Gozitan economy following the implementation of the Gozo Regional Development Strategy. The implications of this strategy on Gozo's wellbeing are evaluated through the incremental scenario, which highlights improvements in the benchmark scenario compared to the BAU scenario, as elaborated in Section 3.3.

3.1 Overall Wellbeing Index in the BAU Scenario

The BAU scenario reveals modest enhancements in Gozo's overall wellbeing index, with gradual progress observed per decade. Increases of 4%, 13%, and 28% in 2032, 2042, and 2052, respectively, compared to the base year of 2022, indicate consistent improvements in wellbeing and welfare in the absence of the strategy (see Table 4). This is chiefly attributed to the national Government's commitment to enhancing national wellbeing, particularly through social and environmental aspects, through ongoing implementation of national plans and strategies. The spillover effect of these policies contributes to this modest improvement in the baseline scenario.

Table 4: Overall Wellbeing Index in the BAU Scenario

BAU	2022	2032	2042	2052
Environmental Well-Being	100	99	104	116
vkm fossil fuel index	100	97	116	165
Built-up area index	100	100	100	100
Water quality index	100	82	75	73
Waste: landfill space required	100	100	100	100
Renewable power	100	106	106	106
Power decoupling	100	113	120	124
Climate	100	98	107	134
Economic Well-Being	100	116	143	184
Per capita GDP	100	119	150	196
Dependence on the National Economy	100	90	90	102
Other	100	100	100	100
Social Well-Being	100	105	111	117
Life Expectancy	100	100	100	100
At Risk of Poverty	100	102	106	110
Early School Leavers	100	122	150	189
Other	100	100	100	100
Overall Well-Being Index	100	104	113	128

Table 4 shows a 1% decline in environmental wellbeing during the first decade, reflecting environmental degradation in the absence of a strategic framework for Gozo. However, projections suggest a 4% improvement by 2042, culminating in a 16% increase relative to the base year by 2052. This progression is primarily driven by national endeavours towards climate neutrality and the increasing decoupling of power consumption from its environmental impacts, notably through the growing utilisation of renewable energy sources.

In the absence of the strategy, economic wellbeing in Gozo is expected to advance, marked by rises in per capita GDP. However, heightened dependency on the national economy signals decreased self-sufficiency of the Gozitan economy over time.

Social wellbeing in Gozo is forecasted to experience notable improvement in the absence of the strategy in the ensuing decades, with 17% projected enhancement by 2052 compared to 2022. Moderate ameliorations are anticipated in the rates of individuals at risk of poverty and early school leavers by 2052.

Table 5: Key Environmental, Economic and Social Results in the BAU Scenario

BAU	2022	2032	2042	2052
Overall Well-Being Index	100.0	103.9	113.1	127.5
Environmental Well-Being	100.0	98.8	104.8	116.4
Economic Well-Being	100.0	114.8	141.8	182.6
Social Well-Being	100.0	104.8	110.5	116.8
Environmental Results				
Environmental Amelioration/Remediation Spend	44.04	50.17	48.35	28.11
<i>Private car electr, foss fuel and displacement</i>	<i>7.50</i>	<i>10.92</i>	<i>13.94</i>	<i>7.94</i>
<i>Attaining limits on built-up area</i>	<i>18.79</i>	<i>20.11</i>	<i>14.85</i>	<i>2.42</i>
<i>Waste treatment</i>	<i>8.91</i>	<i>10.67</i>	<i>11.39</i>	<i>11.66</i>
<i>Water Quality</i>	<i>0.52</i>	<i>0.57</i>	<i>0.56</i>	<i>0.49</i>
<i>Electricity renewable and decoupling</i>	<i>0.90</i>	<i>0.42</i>	<i>0.11</i>	<i>-1.89</i>
Air Quality				
vkm fossil m	49.54	52.84	35.83	11.37
Water Quality				
Total water demand (m ³ m)	2.55	3.10	3.43	3.49
Environmental Health				
Biodiversity				
Land Use				
Housing Stock	25,270	29,097	31,962	32,723
Persons per Housing unit	1.61	1.77	1.78	1.77
Climate Emissions ktCO₂eq				
Climate Emissions ktCO ₂ eq	94.70	96.54	87.92	70.27
Resource Use				
Total electricity demand (TWh)	0.14	0.17	0.19	0.21
Municipal waste kg per capita	505.79	450.43	425.87	417.35
Landfill area (m ²)	0.00	0.00	0.00	0.00
Cumulative C&D waste over 2020 (m ³)	1,066	1,683	2,286	2,843
Economic and Social Results				
Population Level:				
Maltese	31,634	32,922	33,923	34,608
Foreign	8,557	13,938	17,842	17,842
GDP				
GDP	713	987	1,374	1,819
GDP growth	0.08	0.03	0.03	0.03
Per capita GDP	17,734	21,057	26,544	34,685
Per capita GDP growth	0.05	0.02	0.02	0.03
Tourist bednights (m)	0.89	2.50	2.78	2.98

BAU	2022	2032	2042	2052
Construction Units	2,016	1,276	1,432	1,522
Dependence on the national economy	0.60	0.71	0.69	0.61
External Balance to GDP	0.09	0.06	0.07	0.06
Life expectancy	82.46	82.61	82.74	82.86
At risk of poverty	47.65	46.60	44.94	43.50
Early school leavers	10.10	8.29	6.72	5.34

3.2 Overall Wellbeing Index in the Benchmark Scenario

The benchmark scenario exhibits significant improvement compared to the BAU scenario over the next three decades, attributed to the implementation of the Gozo Regional Development Strategy, which is designed based on a bottom-up, place-based approach.

Gozo's distinctiveness from the national territory underscores its specific needs and potentials. While national agencies are adept at addressing market failure at the national level, the management of territorial issues is best handled by regional authorities. These authorities are more closely connected to the issues and potentials to be resolved and can implement actions more credibly by motivating local stakeholder interventions.

This strategy entails initiating development plans and interventions from the grassroots level, leveraging local knowledge, resources, and community engagement to address Gozo's specific needs and challenges. By prioritizing the unique characteristics and assets of the island, solutions are tailored to the context and driven by residents and stakeholders, fostering ownership, empowerment, and a sense of belonging. This leads to more sustainable and impactful outcomes, as evident in the resulting overall wellbeing index of the Benchmark Scenario.

Table 6: Overall Wellbeing Index in the Benchmark Scenario

Benchmark	2022	2032	2042	2052
Environmental Well-Being	100	106	112	125
vkm fossil fuel index	100	121	146	205
Built-up area index	100	100	100	100
Water quality index	100	82	75	73
Waste: landfill space required	100	100	100	100
Renewable power	100	116	116	116
Power decoupling	100	115	121	134
Climate	100	101	112	133
Economic Well-Being	100	118	144	201
Per capita GDP	100	124	154	218
Dependence on the National Economy	100	75	77	95
Other	100	100	100	100
Social Well-Being	100	115	122	134
Life Expectancy	100	100	100	101

Benchmark	2022	2032	2042	2052
At Risk of Poverty	100	105	108	118
Early School Leavers	100	187	242	332
Other	100	100	100	100
Overall Well-Being Index	100	111	121	141

As depicted in Table 6, the implementation of the Gozo Regional Development Strategy is projected to enhance overall wellbeing in Gozo by 11%, 21%, and 41% by 2032, 2042, and 2052, respectively, compared to the base year of 2022. This indicates that with the strategy in place, overall wellbeing in Gozo is expected to improve by an additional 7 percentage points by 2032 and 8 percentage points by 2042 beyond the improvements expected in the baseline scenario, solely attributable to the implementation of strategy measures. The most notable improvements in overall wellbeing are observed in 2052, with a 41% increase over the base year, representing a 13-percentage point improvement over the baseline scenario.

Table 6 illustrates a projected 12% increase in environmental wellbeing by 2042, reaching a 25% increase over the base year by 2052. This improvement is primarily driven by a reduction in fossil fuel usage and an increase in renewable energy sources, particularly resulting from measures such as promoting sustainable vehicular mobility. This initiative prioritizes the electrification of motor vehicles, including public transport, the installation of vehicle recharging stations, and the promotion of alternative means of transportation.

Economic wellbeing in Gozo is also expected to advance significantly with the implementation of the strategy, showing a 101% increase over the base year by 2052, which is 17 percentage points higher than the BAU scenario. This is largely attributed to a greater rise in per capita GDP. The benchmark scenario indicates lower dependency on the national economy compared to the baseline scenario, signalling greater self-sufficiency of the Gozitan economy through the strategy over time. This is primarily a result of an increased investment-to-GDP ratio, attributed to various strategy measures aimed at boosting productive investment, particularly through improvements in infrastructure, sustainable tourism, and the development of new economy sectors that add value to the island of Gozo.

In the benchmark scenario, improvement in social wellbeing is expected to surpass the 5% level reached in the baseline scenario by 10 percentage points by 2032, with an anticipated improvement of 34% over the base year by 2052. This enhancement is primarily attributed to strategy initiatives aimed at enhancing education, social inclusion, and health.

Table 7: Key Environmental, Economic and Social Results in the Benchmark Scenario

Benchmark	2022	2032	2042	2052
Overall Well-Being Index	100.0	111.4	121.3	140.5
Environmental Well-Being	100.0	106.0	111.7	124.7
Economic Well-Being	100.0	117.5	143.9	200.6
Social Well-Being	100.0	115.1	122.3	133.7
Environmental Results				
Environmental Amelioration/Remediation Spend	44.04	43.96	44.52	24.27
<i>Private car electr, foss fuel and displacement</i>	<i>7.50</i>	<i>12.45</i>	<i>10.73</i>	<i>2.78</i>

Benchmark	2022	2032	2042	2052
<i>Attaining limits on built-up area</i>	18.79	11.96	14.11	2.44
<i>Waste treatment</i>	8.91	11.11	11.73	12.99
<i>Water Quality</i>	0.52	0.57	0.56	0.50
<i>Electricity renewable and decoupling</i>	0.90	0.52	0.07	-1.80
Air Quality				
vkm fossil m	49.54	32.74	18.95	0.00
Water Quality				
Total water demand (m ³ m)	2.55	3.11	3.43	3.50
Environmental Health				
Biodiversity				
Land Use				
Housing Stock	25,270	29,254	32,203	33,051
Persons per Housing unit	1.61	1.76	1.77	1.77
Climate Emissions ktCO ₂ eq	94.70	94.15	84.74	70.97
Resource Use				
Total electricity demand (TWh)	0.14	0.17	0.19	0.21
Municipal waste kg per capita	505.79	468.83	438.28	464.76
Landfill area (m ²)	0.00	0.00	0.00	0.00
Cumulative C&D waste over 2020 (m ³)	1,066	1,708	2,329	2,950
Economic and Social Results				
Population Level:	40,191	46,861	51,766	52,450
Maltese	31,634	32,922	33,923	34,608
Foreign	8,557	13,938	17,842	17,842
GDP	713	1,027	1,415	2,027
GDP growth	0.08	0.04	0.03	0.04
Per capita GDP	17,734	21,922	27,326	38,640
Per capita GDP growth	0.05	0.02	0.02	0.04
Tourist bednights (m)	0.89	2.56	2.78	3.17
Construction Units	2,016	1,328	1,475	1,696
Dependence on the national economy	0.60	0.80	0.77	0.63
External Balance to GDP	0.09	0.03	0.06	0.08
Life expectancy	82.46	82.73	82.83	82.94
At risk of poverty	47.65	45.32	44.06	40.43
Early school leavers	10.10	5.41	4.17	3.04

3.3 Incremental Wellbeing Resulting from the Strategy

The incremental scenario vividly illustrates the projected improvements brought about by the implementation of the Gozo Regional Development Strategy compared to the BAU scenario.

Notable enhancements are anticipated in the overall wellbeing index with the strategy's

implementation, reflecting improvements of 7.45, 8.23, and 13.01 percentage points in 2032, 2042, and 2052, respectively over the BAU. These improvements are primarily driven by significant advancements in social and environmental wellbeing, with lesser gains in economic wellbeing during the initial decades, although surpassing the improvements in the other two dimensions by 2052. This suggests that better management of the environment and social capital could yield higher economic dividends in the future.

As outlined in Section 3.2, the Benchmark scenario incorporates policy decisions aimed at emission reduction, resulting in higher short-term expenditure through investments in renewable energy sources, alternative transportation modes, and resource efficiency. This increased expenditure in the short run leads to enhanced Environmental Wellbeing in the long run. In subsequent decades, this investment proves rewarding as the need for environmental remediation decreases compared to the BAU scenario. Without environmental investment, deterioration would be more pronounced, potentially leading to lower economic wellbeing. In the Benchmark scenario, wellbeing increases in the following decades not solely due to social and environmental factors but also due to investment redirection from remediation costs.

A decline in fossil fuel vehicle kms is observed in the benchmark scenario compared to the BAU, especially in the initial decades. In contrast, gradual increases in housing stock and construction activity are projected over time, alongside a corresponding rise in waste generation, reflecting expected development trends. Significant GDP growth is anticipated in the benchmark scenario, surpassing the BAU by €3.9 million per capita in 2052. Climate emissions are expected to decrease due to environmental measures, with a slight increase by 2052 owing to economic activity growth. From a social perspective, life expectancy is projected to increase at a decreasing rate compared to the baseline, with reductions in persons at risk of poverty and early school leavers over the decades due to strategy implementation.

The model results indicate that investing in environmental protection policies not only benefits Environmental Wellbeing but also allows the economy to avoid expenditure on environmental remediation, resulting in higher Socio-Economic Wellbeing.

Table 8: Incremental Wellbeing Effect Resulting from the Strategy

Incremental	2022	2032	2042	2052
Overall Well-Being Index	0	7.45	8.23	13.01
Environmental Well-Being	0	7.21	7.62	8.36
Economic Well-Being	0	2.71	2.05	17.99
Social Well-Being	0	10.32	11.84	16.84
Environmental Results				
Environmental Amelioration/Remediation Spend	0	-6.22	-3.83	-3.83
<i>Private car electrification and displacement</i>	0	1.52	-3.21	-5.15
<i>Attaining limits on built-up area</i>	0	-8.15	-0.74	0.02
<i>Waste treatment</i>	0	0.44	0.33	1.33
<i>Water Quality</i>	0	0.00	0.00	0.00
<i>Electricity renewable and decoupling</i>	0	0.10	-0.04	0.08
Air Quality	0	0.00	0.00	0.00
vkm fossil m	0	-20.09	-16.88	-11.37

Incremental	2022	2032	2042	2052
Water Quality	0	0.00	0.00	0.00
Total water demand (m ³ m)	0	0.01	0.00	0.02
Environmental Health	0	0.00	0.00	0.00
Biodiversity	0	0.00	0.00	0.00
Land Use	0	0.00	0.00	0.00
Housing Stock	0	157.19	241.56	328.35
Persons per Housing unit	0	0.00	-0.01	0.00
Climate Emissions ktCO₂eq	0	-2.39	-3.18	0.71
Resource Use	0	0.00	0.00	0.00
Total electricity demand (TWh)	0	0.00	0.00	0.00
Municipal waste kg per capita	0	18.40	12.41	47.41
Landfill area (m ²)	0	0.00	0.00	0.00
Cumulative C&D waste over 2020 (m ³)	0	25.33	43.09	106.67
Economic and Social Results				
Population Level:	0	0.00	0.00	0.00
Maltese	0	0.00	0.00	0.00
Foreign	0	0.00	0.00	0.00
GDP	0	40.53	40.47	207.44
GDP growth	0	0.00	0.00	0.01
Per capita GDP	0	864.98	781.76	3954.94
Per capita GDP growth	0	0.00	0.00	0.01
Tourist bednights (m)	0	0.06	0.00	0.19
Construction Units	0	52.40	42.19	173.57
Dependence on the national economy	0	0.10	0.09	0.02
External Balance to GDP	0	-0.03	-0.01	0.02
Life expectancy	0	0.12	0.09	0.08
At risk of poverty	0	-1.28	-0.88	-3.08
Early school leavers	0	-2.88	-2.55	-2.30

4. Conclusions and Recommendations

This study aims to develop a wellbeing index for the island of Gozo to assess the potential implications of the Gozo Regional Development Strategy covering the period 2023 to 2033. Two scenarios are considered: the BAU scenario, reflecting the status quo with no policy changes, and the Benchmark Scenario, anticipating outcomes from strategy implementation by 2033.

The strategy is projected to notably enhance Gozo's overall wellbeing index, with improvements of 7.45, 8.23, and 13.01 percentage points in 2032, 2042, and 2052, respectively, over the BAU scenario. Primarily driven by advancements in social and environmental wellbeing, with slightly lesser gains in economic wellbeing initially, the strategy suggests the potential for greater economic dividends in the future through better management of environmental and social capital.

Investment redirection from environmental remediation costs contributes to overall wellbeing growth in subsequent decades. Declines in fossil fuel vehicle kms, projected increases in housing stock, substantial GDP growth, and decreases in climate emissions are among the expected incremental outcomes of the strategy. Social improvements are projected in life expectancy, poverty reduction, and decreased early school leaving rates as a result of the strategy.

The results of the model underscore the importance of environmental protection policies, not only for Environmental Wellbeing but also for enhancing Socio-Economic Wellbeing. These policies enable savings on environmental remediation costs, leading to overall wellbeing enhancements and fostering a more sustainable future for Gozo.

Annex

A.1 Policy Induced Drivers in the BAU

Environmental Policy Drivers

Land Use

- The first exogenous variable used to reflect land use is the **percentage of units constructed generating new housing**. It is assumed that around 80% of the units currently being constructed generate new housing, while the remaining 20% regenerate existing ones. This ratio is expected to decline gradually, such that by 2052, 95% of constructed units would involve a regeneration of existing buildings, and only 5% would require the use of new land.
- The second variable that determines land use is the **collective accommodation bed stock** in Gozo, which in 2022 amounted to 1,998. This is expected to increase gradually, reaching 2,556 bed places by 2052, based on a similar growth trajectory to that of the national economy.
- The third variable that determines land use, and which could be influenced by Government policy, is the **targeted built-up area**. The model assumes that the target built-up area will remain at current levels, estimated at a ratio of 8m². This does not imply that no new built-up areas will be developed, but rather that the cost of reducing built-up area will be higher in the future. Consequently, a higher economic cost would have to be borne in order not to exceed the targeted resource limits.

Water

- **Water demand per resident** is an exogenous variable that can, to some extent, be influenced by Government policy. This is set at an average of 62m³, based on historical data, and is assumed to remain constant in future years.
- Another water policy driver is the **percentage of water derived from the Reverse Osmosis** in Gozo, estimated at around 41% based on current operations. In November 2021, the Government opened up the first reverse osmosis plant in Gozo, at Hondoq ir-Rummien bay. To reduce groundwater abstraction, this share should increase in the future, however this is assumed to remain constant in the BAU scenario.

Electricity

- **The GDP elasticity decoupling** is an indicator that explains the reaction of electricity demand to changes in GDP. In 2022, a 1% increase in GDP is expected to raise electricity demand by 0.8%. However, in future decades, the responsiveness of electricity demand

to GDP growth is assumed to decline gradually, reaching 0.2% by 2052, potentially as a result of technological improvements.

- The **percentage of electricity generated through renewable energy** sources is another policy induced indicator used in the model. In 2022, the share of electricity generated from renewable energy is estimated at 33%, based on the amount of electricity generated from PV panels in Gozo as a percentage of total electricity consumption in Gozo for that year.

Inland Transport

- The number of **private cars per resident** is a policy induced driver representing inland transport and is based on historical data. In 2022, the ratio was estimated at 0.67 private cars per resident, with the expectation that this will decrease in the future as a result of policy measures, reaching 0.35 private cars per resident by 2052.
- The number of **Commercial vehicles per million euro of GDP** is another inland transport variable that can be influenced by policy decisions. Commercial vehicles are typically used for business deliveries. In 2022, there were around 9.9 commercial vehicles for each €1 million of GDP. By 2052, this ratio is expected to decline to 8.5 commercial vehicles per million euro of GDP.
- Another policy induced driver related to inland transport is the **proportion of vkm from electric vehicles** out of the total vkm in Gozo. In 2022, it is estimated that only 5% of vkm were attributed to electric vehicles, while the remaining 95% generated from fossil fuel-powered vehicles. This proportion is expected to increase gradually, reaching 80% by 2052 in line with EU climate change targets.

Waste

- **Municipal k tonnes per unit of consumption** – This variable is based on the national economy, where for every million euro of consumption, around 0.055 k tonnes of waste is generated. The plan is to reduce the waste generation over time, as the population is expected to consume more responsibly and sustainably. Accordingly, municipal k tonnes per unit of consumption are projected to decrease from 0.055 in 2022 to 0.023 ktonnes by 2052.
- **Commercial k tonnes per unit of GDP** – This variable is also based on the national, where 0.016 k tonnes of commercial waste are estimated to be generated per unit of GDP in 2022. This is expected to improve overtime, reaching 0.012 k tonner per unit of GDP by 2052.
- **Proportion of waste that is landfilled** – This variable is not considered relevant in the case of Gozo, as all waste is landfilled on the main island of Malta.
- **C&D m³ per unit of construction GDP** – This variable is also assumed to match the national economy, with around 1.07 m³ of C&D waste per unit of consumption in 2022. This is expected to decline over time, reaching 0.45 m³ of C&D waste per unit

of consumption by 2052. The reason for the decrease is that the rate of recycling these materials should be on the rise in the coming decades. This type of waste is not generally treated, exported or turned into energy; therefore, the increasing volume of this waste should raise an alarm.

Socio-Economic Policy Drivers

Population Growth

- **Annual Population Growth of foreign residents** – The population growth of foreign residents can, to some extent, be influenced by policy. In 2022, the population growth of foreign residents was set at 12% based on historical data. However, this substantial growth is expected to diminish over the coming decades as the influx of foreign residents stabilises, reaching a rate close to zero, similar to the annual growth rate of the Gozitan population, by 2052.

Sectoral Economic Shares

- **Tourism spend to GDP ratio** – Tourism activity plays a significant role in the Gozitan economy, with its impact influenced by government policies aimed at fostering high-quality and sustainable tourism. In 2022, the tourist spend to GDP ratio is assumed to be 30%, based on several key factors. Firstly, the local population's annual expenditure in the wholesale and retail sector is estimated at around €2,000 per capita, with half of this amount considered as value added. This results in the local population's contribution to this sector being calculated at €40,191. The disparity between the total GVA and the local contribution is attributed to tourists, estimated at €99,740. Considering this as a proportion of total GVA in Gozo gives a contribution of 15%. However, this in terms of value added, so tourists' expenditure to GDP ratio is assumed to be double this rate, estimated at 30%, based on the assumption that value added represents half of total expenditure generated. This ratio is projected to gradually decrease in the coming years, in line with the national trend, reaching 25% by 2052.
- **Construction spend to GDP ratio** – Using the same reasoning, this variable is based on the contribution of the construction industry to total GVA, estimated at 14% in 2022. This figure is divided by a factor of 0.6 to account for the proportion of expenditure that is not value added, resulting in a construction spend to GDP ratio of 23.3% in 2022. This ratio is projected to decline gradually over the coming decades, reaching 11.3% by 2052.
- **New Economy share of GDP** – This estimate is based on the proportion of new economy sectors, including arts and entertainment, financial, and information technology, to the total GVA generated in Gozo. In 2022, this was estimated at 8%, projected to rise to 10.7% by 2042 before declining thereafter under the BAU scenario.

Economic Demand

- **Consumption Adjustment (%)** – This variable represents scenarios in which the government may choose to discourage households from consumption due to negative economic events, such as overconsumption. In this model, this variable remains at zero throughout the observed period; however, it can be incorporated into alternative scenarios where such interventions is deemed necessary.

Social Investment

- **Health Public Expenditure**
- **Poverty Public Expenditure**
- **Education Public Expenditure**

The indicators related to health, poverty and education expenditure are entered into the model exogenously, as they can be adjusted according to the government's willingness to invest in these areas. Social investment estimates for these three categories are based on the national model, adjusted to reflect Gozo's population as a percentage of the national.

A.2 Framework Conditions

Environmental Policy Drivers

Land Use

- **Hotel m² per bed:** Indicates the average floor area per bed in hotels.
- **Road area per car m²:** Measures the surface area of roads per car.
- **Other built up per resident m²:** Reflects the amount of non-residential built-up area per resident.
- **Residential m² per unit:** Represents the average floor area per residential unit.
- **Productive m² per employee:** Assesses productive space per employee in workplaces.
- **Cost of reducing built-up area per m³:** Denotes the expense of decreasing built-up area per cubic meter.

These indicators serve as ratios or metrics utilized to evaluate spatial and resource allocation across various sectors, offering valuable insights into spatial distribution and efficiency. This model encompasses various built-up areas including hotel beds, road networks, commercial buildings, residential spaces, and workplaces. By aggregating all these areas, the ratio of built-up area to the total area of Gozo can be determined, providing a useful measure of urbanization and land utilization.

Water

- **Tourist demand differential** – This term denotes the variation in water demand between residents and tourists. In this model, it is assumed that tourists generally have a higher water demand than residents, estimated at 50%, and this ratio is expected to remain constant over the coming decades.
- **Cost of RO water per m³** – This refers to the expense of producing one cubic meter of water using Reverse Osmosis technology. The per-unit cost is estimated based on national data, assumed to be 0.5 per cubic meter in 2022, and is expected to gradually decrease as technology advances and the use of RO increases, reaching 0.35 by 2052.

Electricity

- **Electricity cost differential on fossil fuel per MWh** – This variable refers to the difference in cost between electricity and fossil fuels per megawatt-hour (MWh), estimated using national-level data. Currently, the cost of electricity is higher than that of fossil fuels; however, it is expected that by 2032, the costs will converge, and by 2042, the cost of electricity will be lower than that of fossil fuels.
- **Cost of decoupling per Twh (m)** – This variable represents the investment required to transition one terawatt-hour of energy consumption from fossil fuels to electricity, measured in millions of currency units. It is assumed to align with the national average. In the baseline scenario, this cost is expected to remain stable at €20 million per TWh.

Inland Transport

- **km per private car per year** – This refers to the average distance travelled per private car per year. It is assumed to be 1/5th of the national average, given that Gozo's land area is about 1/5th of the national area and is estimated to be 1,427 km per year.
- **km per commercial vehicle per year** – This is also assumed to be 1/5th of the national average, given Gozo's land area is about 1/5th of the national area. The distance travelled per commercial vehicles is estimated at approximately 2,000 km per year.
- **Cost of electric conversion per vkm** – This represents the expense incurred for converting vehicle kilometers (vkm) travelled from conventional fossil fuel-powered vehicles to electric vehicles. This cost is expected to decline gradually over time from €0.70 in 2022 to €0.30 by 2052.
- **Cost of fossil fuel car use of private car per vkm m** – This indicator is based on the historical cost of using fossil fuel private cars per vehicle-kilometer (vkm), adjusted for growth at the same rate as GDP per capita.

Waste

- **Cost of waste treatment per tonne** – This is assumed to be the same as the national average, estimated at €180 per tonne, and is expected to remain constant throughout the period under consideration.
- **C&D waste cost per tonne** – This is assumed to align with the national average, increasing from €30 to €70 per tonne by 2032, and expected to remain constant thereafter.

Climate Emissions

- **CO₂ per vkm fossil fuel (g)**
- **CO₂ per MWh electricity (kg)**
- **CO₂ per tonne of waste (kg)**
- **CO₂ per unit GDP other (kg)**

These indicators are often referred to as “carbon intensity metrics” or “carbon intensity ratios.”, measure the amount of carbon dioxide emissions produced per unit of a specific activity or output. Examples include: transportation (measured in grams of CO₂ per vehicle-kilometer), electricity generation (measured in kilograms of CO₂ per megawatt-hour), waste management (measured in kilograms of CO₂ per tonne of waste), and economic production (measured in kilograms of CO₂ per unit of GDP). Typically, these indicators are standardized, providing a consistent measure of carbon emissions per unit across different contexts or regions. Accordingly, per unit estimates for Gozo are based on the national model. These indicators are used in the model to estimate climate emissions in kilo tonnes of CO₂ equivalent.

Socio-economic policy drivers

Population growth

- **Annual Population Growth of Gozitan residents** – Based on the average growth rate observed in the local population over the past decade, a growth rate of 0.5% is assumed for 2022, with a gradual decline expected, reaching 0.2% by 2052. This positive yet diminishing trend reflects factors such as low fertility rates and higher life expectancy, although further advancements in medical science are assumed not to significantly extend human life. Additionally, the potential for foreigners to establish permanent residency in Gozo, acquire Maltese citizenship, and start families is considered a plausible contributing factor to the long-term growth of the Gozitan population.

Production function

- **Crowding out effect of non-productive investment** – This is assumed at a constant rate of 70%, implying that a portion of non-productive investment (30%) still translates into productive investment. The 70% figure stems from prior Cost-Benefit Analyses, drawing on research such as the assessment of compliance costs with the EU Environmental Acquis regarding water and waste management. These analyses estimate the benefits of such investments in Malta's adherence to the EU Environmental Acquis.
- **Depreciation of productive capital** – This variable denotes the rate at which the capital employed for production decreases in value over time. As of 2022, the depreciation rate of productive capital is assumed at 20%, with projections indicating a potential increase in the coming decades due to the accelerated technological obsolescence. This may necessitate more frequent machinery replacements, potentially reaching 26% by 2052.

Sectoral variables

- **Growth in tourist per night spend** – While the value for 2022 is based on historic NSO data, future projections align with Malta's Tourism Strategy, which focuses on attracting higher-quality tourists. This strategy is expected to gradually increase the average spending per night, enabling Gozo to maintain or increase overall tourist expenditure while reducing the environmental impact associated with higher tourist volumes.
- **Growth in construction prices** – Construction price growth is anticipated to slow down, meaning prices will continue to rise but at a decreasing rate.

Economic demand

- **Growth floor for fiscal injections** – This variable assumes that, to maintain stability and prevent demand-driven recessions, the government will consistently inject approximately 1.2% of GDP per annum into the economy. This spending aims to smooth out cyclical fluctuations and is derived from an analysis of past data for Malta, reflecting government injections during both prosperous and challenging economic periods. In this model, the variable serves as a determinant of Gozo's dependence on the national economy. It sets a benchmark for when fiscal support becomes necessary. If GDP growth falls below the 1.2% threshold, this signals a heightened need for external assistance, indicating stronger dependence on mainland Malta. On the other hand, when growth exceeds this level, Gozo is viewed as being in a more stable and resilient position, with a comparatively lower reliance on national fiscal support.



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