

ECONOMY

There are many forms of impacts which climate change can exert on the economy¹. With regards to our local small island state economy, it is expected that Malta will become highly sensitive to external market shocks and changing patterns. Therefore the presence of any poorly-developed infrastructure can jeopardise the degree of adaptation measures needed to counter the impacts of climate change.

A number of factors pertaining to small island states could limit or inhibit their capacity for adaptation to the impacts of climate change. These include their (1) small physical size that limit human retreat from sea level rise or relocation to milder conditions, (2) limited, over-stressed natural resources, (3) remoteness from external markets and adaptive infrastructure, (4) limited human and financial resources needed to install and set in motion effective adaptation measures, and (5) limited economic growth and development.

Additionally, Malta will have to bear higher costs due to the disruption of internal transport and will have to shoulder increased costs of environment control (such as air quality standards) and provision of services.

Expenditure that is directed to cover climate change adaptive measures will divert the much needed investment to other activities. This merits considerable attention especially due to the fact that Malta has an ageing population². Compared to larger economies, the increased local costs associated with climate change adaptation will be strongly felt.

Local economic sectors are expected to change as a result of climate change. Income opportunities from tourism, for example, will become increasingly threatened due to (1) disruption to coastal activities and the environment, (2) warmer climate and (3) increased health hazards. All of these factors are considered to be strongly significant.

Salient impacts:

- *Malta is uniquely vulnerable to climate change because of its geography and socio-economic characteristics. Its economy is particularly threatened in the context of its environmental challenges.*
- *Climate change impacts on the local economic development are likely to be widespread, affecting all sectors of the economy, in particular tourism, fishing and public utilities.*

¹ These can include economic costs (such as reduction in the value of goods and services available to our society), negative economic impacts (such as reduction in income and related variables), increased risk and uncertainty (such as higher probability that harmful events will occur in the future or becoming more severe, with a diminished ability to anticipate the future), increase in unprecedented economic conditions (such as information costs, adaptation costs and increased economic impacts), and an increase in undesirable distribution of economic well-being (such as effects accrue in a manner people consider to be unfair and inappropriate).

² meaning that there would be more people claiming benefits such as state pensions and health care and less people working and paying taxes. This combination of higher spending commitments and lower tax revenue is a source of concern for national authorities, especially in the face of climate change adaptation. Workforce must therefore pay higher taxes, leading to disincentives to work, invest and even pay taxes, coupled with a fall in productivity and growth.

- Local vulnerability is aggravated by a number of socio-economic stressors such as high population density, strained water resources, stress on local food supplies, utilities, infrastructure, coastal areas and waste disposal facilities. Continued over-development of coastal infrastructure will result in increased coastal erosion.

Phenomenon	Agriculture	Aquaculture & Fisheries	Manufacturing	Market services	Private consumption	Public consumption
Increased air temperature	<p>Increased incidence of pests and diseases to crops and livestock.</p> <p>Decreased functioning and plant vigour.</p>	<p>Change in fish migratory patterns.</p> <p>Increased stress on aquaculture processes, and efficiency. Changes in operating costs projected.</p>	<p>Deterioration in working environment conditions for certain sectors of the workforce³.</p>	<p>Increased discomfort during transportation, leading to higher costs for air-conditioned private and public transport.</p> <p>Increased frequency of power-failure, requiring major investment to replace or enhance provision of electricity within the constraints of international pollution standards in view of climate change.</p>	<p>Increased expenditure on (1) microclimate control in houses and cars (2) health care (3) higher importation costs.</p>	<p>Increased expenditure on health services.</p>
Increased frequency of heat-waves/stress and drought	<p>Decreased productivity of local produce.</p> <p>Lack of water management infrastructure (such as large reservoirs using second class water) expected to lead to water shortages for irrigation. This will worsen the current problem of illegal groundwater extraction from boreholes.</p> <p>Expected increase thermal stress on animals.</p>			<p>Water production will be disrupted by longer drought conditions.</p>		<p>Increased expenditure on health services projected.</p>
Increased torrential rains, flooding and severe storms	<p>Impoverishment of the soil surface expected.</p> <p>Increased loss of harvest and quality of produce.</p> <p>Spring-sown crops are expected to have lower yields (such as legumes).</p> <p>Potato crops will require more water.</p> <p>Autumn-sown crops expected to have lower yields.</p>	<p>Increased chance of damage to infrastructure from waves or flooding of inland coastal areas.</p> <p>Projected disruption to fish farming activities due to damage to equipment and gear.</p> <p>Escape of stocks due to strong wind waves.</p> <p>Disruption to offshore fishing activities.</p>	<p>Flooding of industrial areas, including drainage systems will impact on the economy.</p>	<p>Increased road flooding expected.</p> <p>Disruption to maritime activities due to strong winds expected .</p> <p>Disruption to air transport due to increased thunderstorms and interference in wireless communication expected.</p>	<p>Disruption to housing in flood prone areas projected.</p> <p>Disruption to recreational amenities associated with these areas expected.</p> <p>Increased costs to insure against damage. Extensive damage may not be compensated.</p>	<p>Increased expenditure on health services projected.</p>

³ Such as those working in the construction sector.

	<p>Increased damage to crops and greenhouses expected; not covered by private insurers.</p>	<p>Projected increase in insurance costs.</p>	<p>Disruption of maritime activities negatively affecting trade between Malta and Gozo.</p> <p>Sewerage services could be disrupted by overflowing.</p>		
<p>Increased greenhouse concentrations</p>	<p>Increased acidification of surface soils projected.</p>				
<p>Sea level rise</p>	<p>Projected loss of land, leading to significant costs of scarce land.</p>		<p>Water production will be disrupted by sea water intrusion .</p>	<p>Disruption to housing in coastal areas expected.</p>	<p>Projected increase in expenditure on health services.</p>
	<p>Projected loss of quality due to salinization of irrigated water.</p>			<p>Disruption to entertainment associated with coastal recreational areas expected.</p>	
	<p>Increased damage to the fruit-growing sector due to salinization</p>			<p>Inundation expected to affect buildings, including dwellings and other structures in coastal areas.</p> <p>Residents in inundation-risk areas will experience a significant drop in property value over time.</p> <p>Projected disruption to transport and communication.</p>	
<p>Increased sea temperature</p>	<p>Shift in migratory patterns of fish, and emergence of new species that are better suited to the new climate conditions and which threaten those currently providing economic value.</p> <p>Push fish migration routes southwards.</p>				