

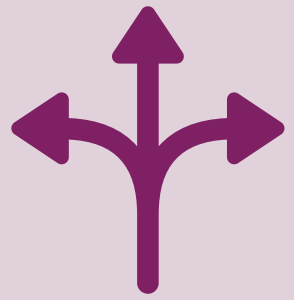
Climate Change Mitigation and Development Pathways

Key findings for the Pacific from the United Nations

Intergovernmental Panel on Climate Change's (IPCC)

Sixth Assessment Report (AR6) on Mitigation* of Climate Change

*actions that reduce the rate of climate change



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especially for populations and ecosystems with little capacity to adapt



Trade-offs from actions to reduce emissions can be minimised through



new policies



capacity building



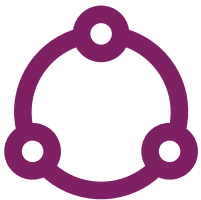
technology transfer



investments



financial partnerships



Mitigation options have synergies with many SDGs. The SDGs can be used as a template for choosing appropriate mitigation actions.

Well designed and implemented actions to mitigate climate change can contribute to Sustainable Development Goals (SDGs)

Mitigation options can have co-benefits for climate change adaptation and sustainable development.



Protecting and restoring coastal ecosystems and their blue carbon



Protecting and restoring land ecosystems



Urban greening and green infrastructure



Low emission energy technologies

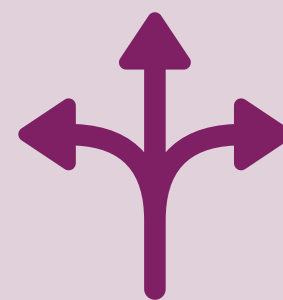
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Actions to mitigate climate change can contribute towards sustainable development goals if they are well designed and implemented. Appropriate policies and planning can reduce potential trade-offs from mitigation actions.

CO-BENEFITS OF MITIGATION

Ambitious climate change mitigation is essential to meeting many of the UN Sustainable Development Goals (SDGs), especially for populations and ecosystems with little capacity to adapt to climate change impacts.¹ Mitigation actions can often contribute to the achievement of SDGs, although they can also create trade-offs with these goals in other instances. The trade-offs from mitigation projects can be minimised through new policies, capacity building, technology transfer, investments, and financial partnerships.² For example, ensuring projects do not displace existing land uses can reduce tensions that may arise from changing access to resources and employment.

There are many mitigation actions that can deliver beneficial development and adaptation outcomes. It can be useful to focus on these as most of the current global finance is focused on mitigation actions (~90%), while international cooperation on capacity building for adaptation in Pacific Island nations is lacking.³

Mitigation and Development Synergies⁴

Mitigation (SDG13) options have synergies with many other SDGs, but some can have trade-offs. Success depends widely on making sure actions are appropriate for the local setting. If chosen and implemented well they regularly have positive impacts for sustainable development. The SDGs can also be used as a template for choosing appropriate mitigation actions.

Sectoral and system mitigation options	Relation with Sustainable Development Goals																
	1	2	3	4	5	6	7	8	9	10	11	12	14	15	16	17	
Wind energy	+	•	+			+	+	+	+		+	-	•	•			
Solar energy	+	•	+			•	+	+	+		+	-		•			
Efficient heating, ventilation and air conditions (HCAS)	•	+	+			+	+	•	•	•	+	+					
Reduce conversion of natural ecosystems*	•	-	+			+		•			•		+	+	-	•	
Ecosystem restoration, reforestation, afforestation	+	•	+			•		-		•	+		+	+			
Urban green and blue infrastructure	+	+	+	+		+	+	+	+	•	+	+	+	+	+	+	
Electrification	+	•	+		+		+									-	
Shipping efficiency, logistics optimisation, new fuels							+	+	+						•	+	

* Deforestation, loss and degradation of peatlands and coastal wetlands

Type of relations

+ Synergies
 - Trade-offs
 • Both synergies and trade-offs
 Blanks represent no information

Confidence

■ High confidence
 ■ Medium confidence
 ■ Low confidence

- | | | |
|---|---|--|
| <ul style="list-style-type: none"> 1 No Poverty 2 Zero Hunger 3 Good Health and Well-being 4 Quality Education 5 Gender Equality 6 Clean Water and Sanitation | <ul style="list-style-type: none"> 7 Affordable and Clean Energy 8 Decent Work and Economic Growth 9 Industry, Innovation and Infrastructure 10 Reduced Inequality 11 Sustainable Cities and Communities | <ul style="list-style-type: none"> 12 Responsible Consumption and Production 14 Life Below Water 15 Life on Land 16 Peace and Justice Strong Institutions 17 Partnerships to achieve the Goal |
|---|---|--|

1 Summary for Policymakers (SPM) D.1.1; Chapter 3 Executive Summary

2 SPM.D.1.2

3 Chapter 15.3.2; Chapter 16.5.3.1

4 Adapted from Figure SPM.8

Mitigation and adaptation overlap

Mitigation actions (either reducing greenhouse gas emissions or contributing to carbon storage and sequestration through carbon sinks) can have co-benefits for adaptation and sustainable development.⁵



Protecting and restoring coastal ecosystems and their blue carbon⁶

- Conservation, sustainable management and restoration of coastal ecosystems such as mangroves and coral reefs can contribute to carbon storage and sequestration.
- Restoring mangroves, salt marshes and seagrasses can sequester large amounts of carbon and may act as long-term carbon sinks.
- Conservation of habitats and ecosystems can protect communities from sea-level rise, increased wave energy and coastal erosion. Conservation can also increase food security and provide ecosystem services.
- Coastal habitat restoration projects can also provide social benefits in the form of job creation through tourism and recreation opportunities.
- These can make significant contributions to mitigation for small island developing states where coastal wetlands have been shown to comprise 24-34% of their total national carbon stock⁷



Protecting and restoring land ecosystems

- Conservation, sustainable management and restoration of land-based ecosystems like forests and wetlands can contribute to carbon storage and sequestration.
- Land restoration and halting land degradation are mitigation actions that can also build adaptive capacity.⁸ The restoration of ecosystems is also often associated with improved soil condition, water filtration, ground water recharge and flood control.
- Reducing emissions from deforestation and forest degradation (REDD+⁹) is an option for Pacific Island Nations with these resources. These strategies encourage countries to increase carbon sinks and can generate benefits such as reducing poverty and improving water quality. However, planting trees on land not naturally forested can have negative impacts, for example on biodiversity and food security.¹⁰



Urban greening and green infrastructure

- Contributes to carbon storage and sequestration while also reducing energy demand.
- Planting trees in urban centres and plants on walls and rooftops can increase the energy efficiency of buildings and reduce water runoff. Using traditional building methods (e.g. Samoan Fale) can reduce energy demands as they have natural cooling effects. These can also help in adaptation as these structures may be able to withstand extreme weather events.¹¹
- Urban greening can have benefits for ecosystem restoration, habitat protection, air quality, flood control, aesthetic values and reducing heat stress.
- Policies can be implemented through: national building code guidelines, flood safety standards, local land-use plans and local building codes.



Low emission energy technologies

- Low emission and decentralised energy systems can be a cost-effective way to provide electricity in rural areas, for example, off-grid solar and locally produced hydropower.
- Research indicates that decentralised and on-grid renewables are likely the least cost options to provide universal access to electricity by 2030 for many regions.¹²
- Increasing electrification through low-carbon energy supports and reduces the costs of development in areas such as education, health and employment. Electrification improves enrolment in all forms of education and allows for increased business opportunities.¹³
- The prices of key energy system mitigation options like solar PV, wind power, and batteries have dropped rapidly over the past five years. In particular, the cost of solar PV has declined by 62% since 2015 and is expected to keep dropping.¹⁴

5 Adapted from Chapter 13, Table 13.3

6 Blue carbon management refers to the enhancement of biological carbon removal and storage in marine systems. Examples from the coastal zone include tidal marshes, mangroves and seagrasses

7 Chapter 7.4.2.9

8 Chapter 3.7.6.1

9 See <https://redd.unfccc.int/> for more information

10 SPM.D.2.3

11 UNESCO 2013, Traditional knowledge for adapting to climate change: safeguarding intangible cultural heritage in the Pacific

12 Chapter 6, Box 6.1

13 Chapter 6.6.7; SPM.D.1.3

14 Chapter 6, Executive Summary