



SOCLIMPACT

This project has received funding from the European Union's Horizon
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SOCLIMPACT Project

Downscaling climate impacts and decarbonisation pathways in EU islands, and enhancing socioeconomic and non-market evaluation of Climate Change for Europe, for 2050 and beyond.

La Adaptación al cambio climático en las Islas Europeas

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El Enfoque de la adaptación...

NO ES...

- Resignación o claudicación ante el cambio climático...
- Dar prioridad a las consecuencias en lugar de a las causas...
- Construir un escudo protector con más infraestructuras...

MAS BIEN DEBERÍA SER...

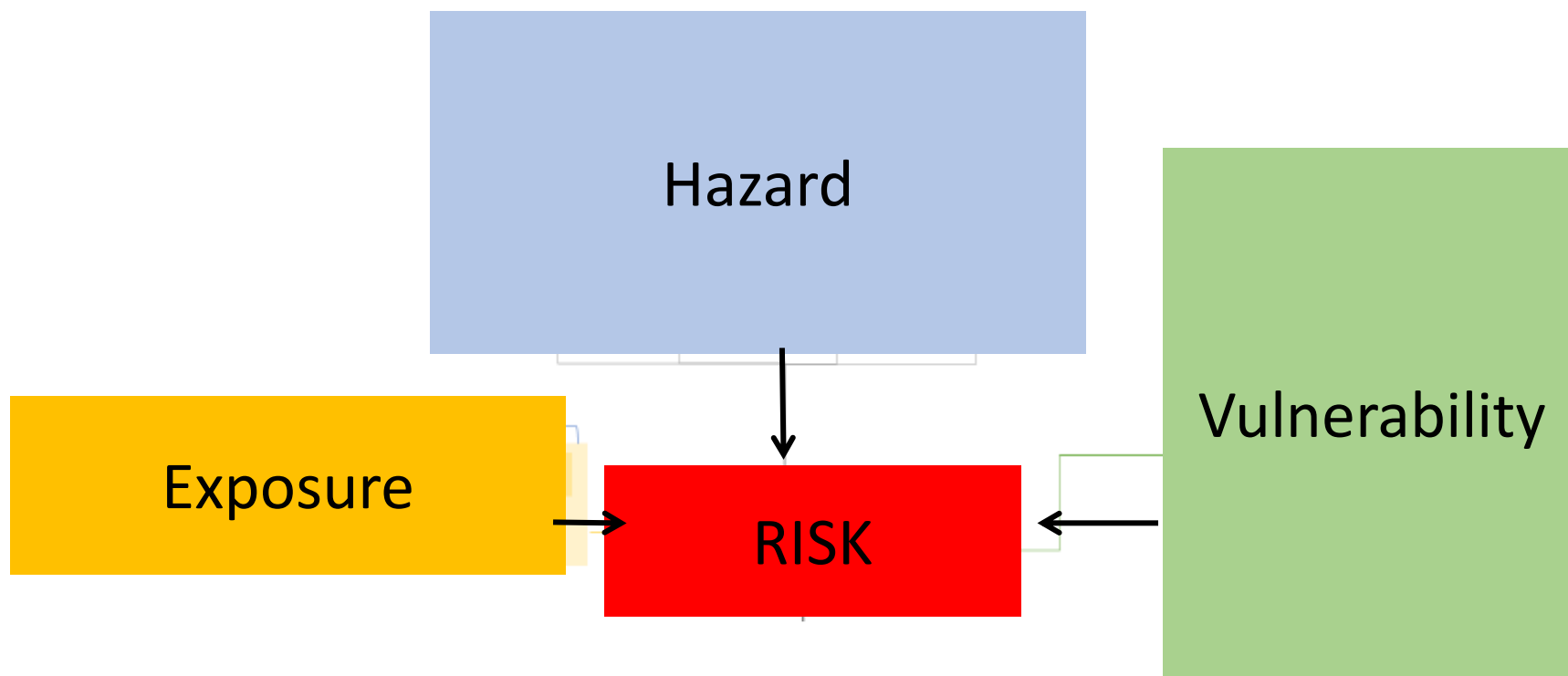
- La constatación de que el cambio climático ya está aquí y lo estará por mucho tiempo...
- La evidencia de que la economía ya no puede ser nunca más pensada al margen de la biosfera y sus límites...
- El tránsito hacia una economía sabiamente insertada en los límites y ciclos de la naturaleza,...y por tanto descarbonizada.
- Crucial, en los destinos turísticos, para competir mejor



La adaptación como oportunidad

- La transformación efectiva hacia un sistema productivo más eficiente y resiliente...
- ... basado en el conocimiento y en la información...
- ...con más y mejores oportunidades de empleo y de emprender con creación de valor...
- ...y más consciente de los servicios ecosistémicos en los que se sustenta...
- ...en resumen **MÁS SOSTENIBLE** (eficiente, equitativo y ecológicamente viable)

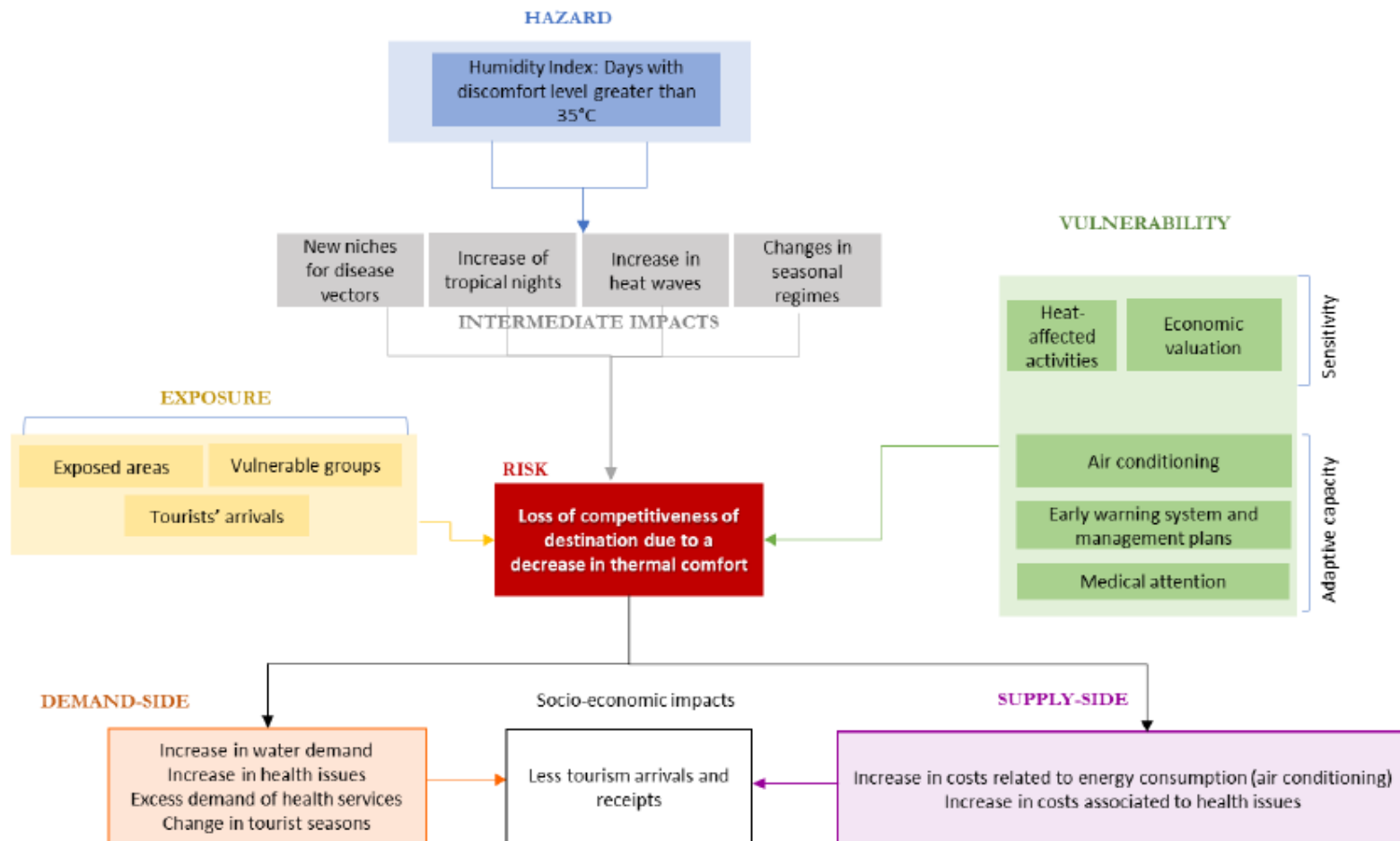
El enfoque de las cadenas de impacto





El enfoque de las cadenas de impacto

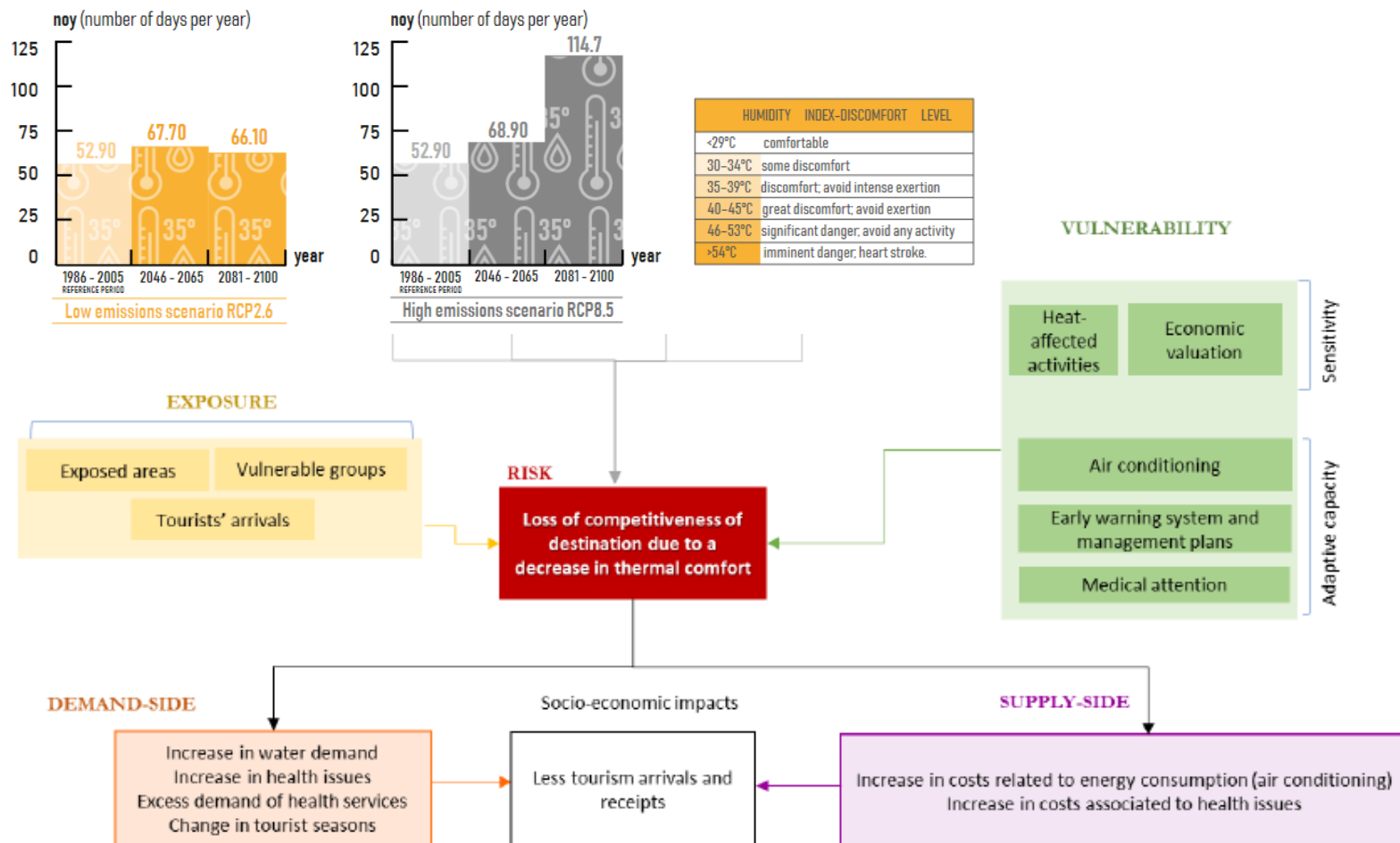
Ej: Pérdida de atractivo por subida de temperaturas



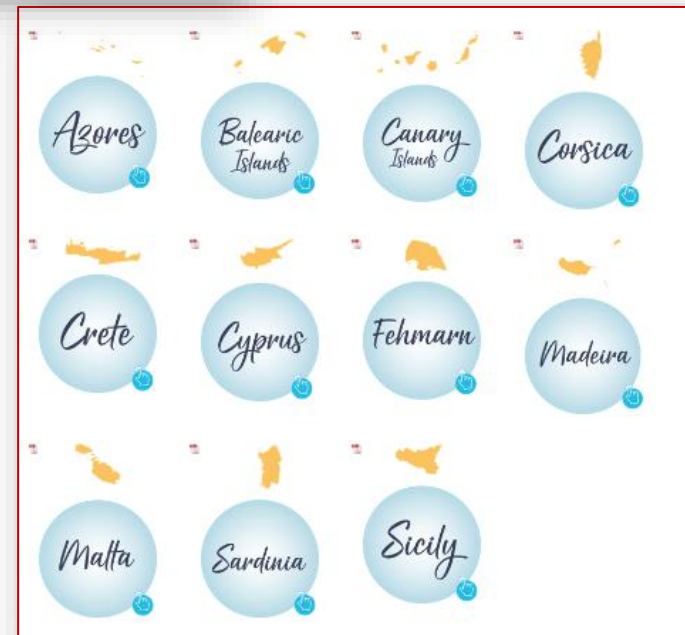


El enfoque de las cadenas de impacto

Ej: Pérdida de atractivo por subida de temperaturas



Analizado para 4 sectores de la economía azul y para la mayoría de islas europeas



Y una vez tenemos cuantificados los riesgos
... ¿qué hacemos?



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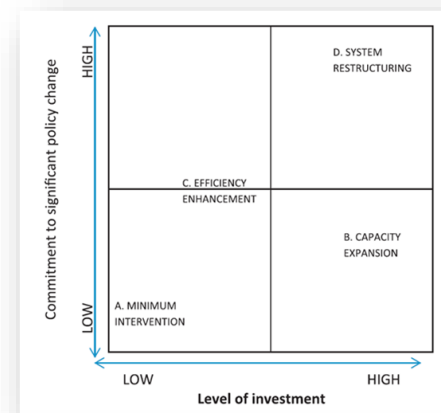
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SOCLIMPACT

Definimos diversas trayectorias de adaptación según

- Inversión económica
- Implicaciones políticas



Se plantean acciones de adaptación de distintas clases

- Reducción vulnerabilidad
- Reducción riesgos naturales
- Resiliencia

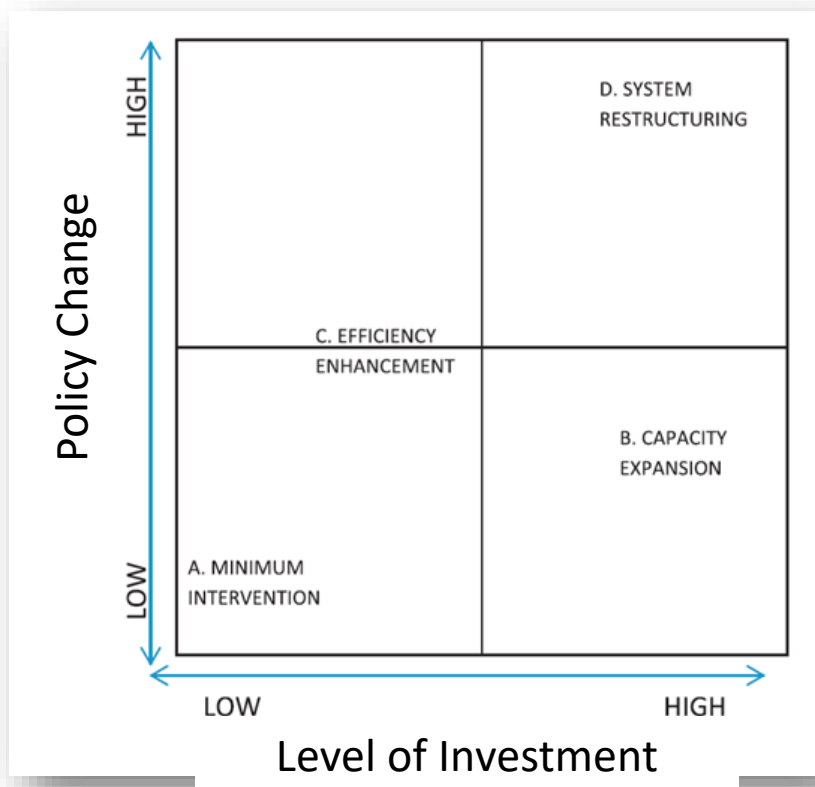
BROAD OBJECTIVE	CLASS OF ADAPTATION
ADDRESSING DRIVERS OF VULNERABILITY	1. Financial capital
	2. Human Capital
	3. Social capital
	4. Natural capital
	5. Physical capital

Seleccionadas para cada trayectoria y evaluadas por stakeholders según

- Criterios de eficiencia
- Protección ambiental
- Mitigación CC
- Aplicabilidad técnica
- Aceptación Social

APT C - Pathway	Short-term (up to 2030)	Mid-century (up to 2050)	End-century (up to 2100)
Efficiency Enhancement medium investment, medium commitment to policy change This policy direction is based on an ambitious strategy that promotes adaptation consistent with the most efficient management and exploitation of the current system	Activity and product diversification	Activity and product diversification	Activity and product diversification
	Local circular economy	Local circular economy	Local circular economy
	Water restrictions, consumption cuts and grey-water recycling	Water restrictions, consumption cuts and grey-water recycling	Water restrictions, consumption cuts and grey-water recycling
	Drought and water conservation plans	Drought and water conservation plans	Coastal protection structures
	Mainstreaming Disaster Risk Management	Using water to cope with heat waves	Using water to cope with heat waves
	Adaptation of groundwater management	Monitoring, modeling and forecasting systems	Monitoring, modeling and forecasting systems
	Dune restoration and rehabilitation	Dune restoration and rehabilitation	River rehabilitation and restoration
	Adaptive management of natural habitats	Adaptive management of natural habitats	Ocean pools
	Distributed electric grids powered by renewables	Zero sewage discharge to the sea	Forest fire prevention

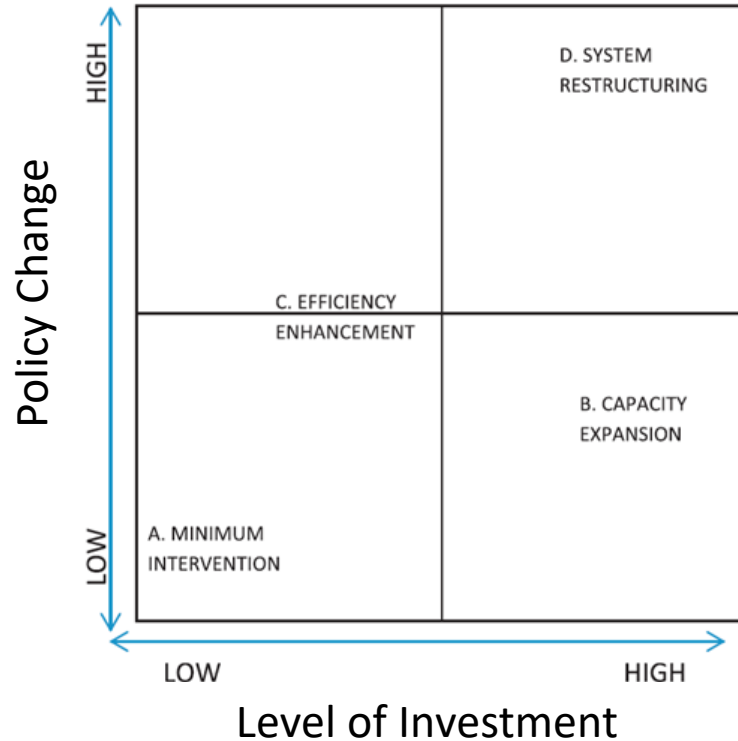
Trayectorias de políticas de adaptación



En nuestro caso nos planteamos cuatro vías de adaptación diferenciadas, pero podrían ser más

Trayectorias de políticas de adaptación

Ejemplos



- Información y alerta temprana **A**
- Regeneración de la función protectora de los ecosistemas naturales **C**
- Reubicación de las estructuras y procesos vulnerables **C**
- Reestructuración de los productos, servicios y tecnologías **D**
- Fortalecimiento de las infraestructuras **B**
- La descarbonización, doble dividendo y preferencias de los mercados **D**

En nuestro caso nos planteamos cuatro vías de adaptación diferenciadas, pero podrían ser más

Objetivos y clases de acciones de adaptación

BROAD OBJECTIVE	CLASS OF ADAPTATION
ADDRESSING DRIVERS OF VULNERABILITY	1. Financial capital
	2. Human Capital
	3. Social capital
	4. Natural capital
	5. Physical capital

DISASTER RISK REDUCTION	6. Managing long term risk
	7. Preparedness
	8. Response
	9. Post disaster recovery and rehabilitation

Objetivos y clases de acciones de adaptación

BROAD OBJECTIVE	CLASS OF ADAPTATION	DESCRIPTION OF PLAUSIBLE ADAPTATIONS
ADDRESSING DRIVERS OF VULNERABILITY	1. Financial capital	Changes in flows of money and savings that households have available, including loans and insurance
	2. Human Capital	Changes in skills, health and ability to labour of members of a household
	3. Social capital	Changes in networks, relationships and membership of groups that households can use
	4. Natural capital	Changes in land ownership and access to natural resources and storage facilities
	5. Physical capital	Changes in infrastructure and goods such as tools and equipment that households can use to increase productivity and non-productive assets of the households (e.g. house material)
DISASTER RISK REDUCTION	6. Managing long term risk	Efforts to build physical and social infrastructure that mitigate the worst impacts of an event. These can be one off activities, for example, building a sea wall, cyclone shelters, or on-going initiatives, e.g. developing flood risk management plans or relocating communities.
	7. Preparedness	Efforts to ensure communities are ready to respond to an event. These activities take place cyclically, for example, ensuring sea walls are maintained, practicing evacuation drills, or testing early warning systems.
	8. Response	Efforts to ensure affected households, communities, business and services receive appropriate assistance during and immediately following an event, e.g. evacuation support, first aid medical supplies, emergency responders
	9. Post disaster recovery and rehabilitation	Efforts to ensure affected households, communities, business and services are able to rebuild following an event, e.g. rehousing, reconstruction, etc.
LANDSCAPE /ECOSYSTEM RESILIENCE	10. Provisioning services	Changes in ecosystem goods, quality or productivity that can be directly consumed, such as food, water, raw materials (e.g. fibre, biofuel, ornamental items), but also adaptations that enhance these services such as the use of irrigation and fertiliser
	11. Regulating and Maintenance Services	Changes in the services that keep the wider planetary systems (such as the atmosphere, cryosphere, oceans) functioning and include the regulation of climate, air, nutrient cycles and water flows; moderation of extreme events; treatment of waste – including water purification; preventing erosion; maintaining soil fertility; pollination; and treatment of waste – including water purification; preventing erosion; maintaining soil fertility; pollination; and biological controls, such as pests and diseases.
		Changes in the habitats that maintain the life cycles of species or maintain genetic diversity, through quality and quantity of suitable habitats. In turn, these habitats underpin the health of provisioning and regulating services.
	12. Cultural services	Changes in aesthetic, recreational and tourism, inspirational, spiritual, cognitive development and mental health services provided by ecosystems.

Criteria for evaluating adaptation options

In each island context, 24 adaptation options for each activity of Blue Economy, and 6 options more born from local knowledge, were evaluated according to these 5 criteria:

Criteria		Description	Score performance
C1	Cost Efficiency	Ability to efficiently address current or future climate hazards/risks in the most economical way	Higher score = higher cost efficiency performance
C2	Environmental protection	Ability to protect the environment, now and in the future	Higher score = higher environmental protection performance
C3	Mitigation (GHG emissions) win-wins and trade-offs	Current ability to meet (win-win) or not (trade-off) the island/archipelago's mitigation objectives	Higher score = higher mitigation win-wins and lower trade-offs thus higher performance
C4	Technical applicability	Current ability to technically implement the option/measure in the island/archipelago	Higher score = higher technical applicability performance
C5	Social acceptability	Current social acceptability of the option/measure in the island/archipelago	Higher score = higher social acceptability performance

Opciones de adaptación basadas en el conocimiento local: Turismo

Expertos locales propusieron y evaluaron las 6 siguientes opciones de adaptación para el turismo en Canarias:

			Coste eficiencia	Impacto ambiental	Coste eficiencia	Viabilidad técnica	Aceptación social	
T25	Passive, low carbon adaptation of tourist buildings to longer extreme heat periods	Funding and technical assistance for the adoption of bioclimatic architecture criteria in reformed and newly built tourist buildings; regulation forcing it should be delivered together with economic incentives, socially justified by the positive externality of contributing a more environmental friendly image of the destination. This option is preferred to encouraging further investment in air conditioning, which implies an increase in GHG emissions.	Local knowledge	3	3	4	3	3
T26	Zero sewage discharge to the sea	This measure means to enhance sewage treatment system throughout the islands with two important, climate related purposes. First, mitigate the impact of seawater heating on the seagrass meadows, in turn crucial to sustain the entire marine ecosystems. Second, contribute to water supply with a lesser energy-demanding water source than desalination.	Local knowledge	3	4	3	4	3
T27	Distributed electric grids powered by renewables	Develop distributed electric grids based on renewable sources (pv, wind) to power desalination plants and tourist firms consortia, to reduce electricity cost and emissions, and increase the stability of the general electric grid while increasing renewables participation in the electric mix.	Local knowledge	4	4	4	3	4
T28	Forest fire prevention	Incentivate forest traditional cattle-based uses to reduce forest flamability and maintenance of farming activities in the periphery of forest masses, thus performing as firewalls. Social abandone of traditional uses and upper-land agriculture has lead to recent 6ª generation, inextinguishable forest fires that destroy endemic terrestrial biodiversity and precious landscapes, and put in risk residents' and tourists' lives.	Local knowledge	3	4	4	3	3
T29	Bottom-up managed marine protected micro-areas	Stakeholders-led deals to improve the management of marine areas affected by overfishing and habitat degradation to favour habitat rehabilitation and create sinergies amongst sustainable fishing, ecofriendly tourist activities (diving, snorkeling, bottom-glass boating...) and land-based activities (local product-based gastronomy, ictioethnology interpretation paths, etc.).	Local knowledge	3	4	3	3	3
T30	Residual organic matter composting to reduce methane emissions, restore degraded landscapes and enhance soil fertility	Sewage sludge, organic waste from agriculture and the organic fraction of the MSW are currently disposed in poorly managed landfills, releasing methane to the atmosphere while agricultural soil shows extreme organic poorness and exhausted quarries degrade lanscapes. Composting would contribute to link tourism to decarbonization, local food options and lanscapes rehabilitation.	Local knowledge	4	4	4	4	3

Opciones de adaptación basadas en el conocimiento local: Turismo

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Vulnerability Reduction
 Disaster Risk Reduction
 Socio-Ecological Resilience
 Local Knowledge (provided by local stakeholders)



Principales ámbitos de adaptación

1. Olas de calor y confort térmico de los turistas.
2. Subida del nivel del mar y disminución de la superficie de playa.
3. Subida de la temperatura del mar y degradación de los hábitats marinos.
4. Incendios forestales y degradación de los hábitats terrestres.
5. Aumento del riesgo de brotes de enfermedades infecciosas.

Preferencias *stakeholders* consultados:

1. Climatización pasiva y corredores verdes urbanos.
2. Diversificación de servicios y entornos turísticos; habilitación de nuevos accesos al mar.
3. Erradicación de vertidos al mar.
4. Gestión para la reducción del combustible y recuperación agraria periferia bosques.
5. Prevención y alerta temprana, con protocolos bien definidos y capacitación de todos los actores.



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