Forum: Environmental Committee

Issue: Helping island states in building resilience to climate change

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INTRODUCTION

Small Island Developing States (SIDS) in over 40 nations with a population of around 65 million people share beautiful landscapes. They also emit the least carbon into our atmosphere (only 1% of global carbon dioxide emissions)[1] ;nevertheless, they suffer disproportionately from the damaging impacts of extreme weather events caused by climate change. As a result of their very small land areas, SIDS are particularly vulnerable to climate change and sea-level rise. With most of these islands population living just a few meters above sea level, they are exposed to the devastating consequences of climate change, from extreme weather events to coastal erosion and biodiversity loss. The United Nations Framework Covention on Climate Change (UNFCCC) declares that "low-lying and other small island countries amongst others are particularly vulnerable to the adverse effects of climate change".[2]

Island states share unique characteristics: small size, remoteness, limited resources and global environmental challenges. To create a clearer picture, more than 60% of countries experiencing the highest losses caused by climate change are SIDS- with damages up to 9% of Gross Domestic Product (GDP). However, rising sea-levels and increasing extreme climate conditions are just some of the difficulties these countries face and will have to face in the following decades. Because of floods or other destructive weather events, people are made homeless and key infrastructure for transportation, water, health and education are devastated. The impacts of climate change make SIDS' already exposed and unstable economies even more vulnerable. Furthermore, SIDS, who represent nearly one-quarter of the United Nations' votes, have great difficulty in handling their industrial development, because many island states have a narrow resource base. At the same time, their capacity to build, re-build and come up with resilient infrastructure is limited because they have contrained financial and human resources to conduct the necessary studies, identify and prioritize adaption options. Due to their narrow resource base, they do not have the luxury of time to fix

[1] Small Island Nations at the Frontline of Climate Action
https://www.undp.org/content/undp/en/home/news-centre/news/2017/09/18/small-island-nations-at-the-frontline-of-climate-action-.html

[2] United Nations Framework Covention on Climate Change (UNFCCC)
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damages in between of destructive weather events, resulting in the island becoming more and more vulnerable and uninhabitable.

Coastline erosion, increasing tropical cyclones, and biodiversity loss will result in further population displacement, whether that is local businesses or more importantly, the health of the people.

The climate situation will most likely not improve in a timely manner, that's why building resilience mechanisms is an urgent matter. Faced with the urgency of finding sustainable and quick solutions SIDS and organizations are putting together new ways to finance and plan climate resilience. Achieving transformational change requires partnerships, international knowledge exchange and investors that will fully commit to assisting SIDS in any way.

DEFINITION OF KEY-TERMS

Climate Change

Climate change refers to the slow change of long-term seasonal patterns of weather by causing undesirable changes in the frequency, intensity and duration of certain weather events threatening wildlife, crops, ecosystems and generally everybody's lives. Climate change is caused by mainly human-induced activities such as the burning of fossil fuels and deforestation. For the majority of SIDS climate change represents the biggest threat to their viability and existance.

Climate Change Resilience

Resilience is the ability to cope with difficulties and set-backs and finally recovering and conquering these obstacles. In terms of climate change, resilience means dealing with and overcoming climate change impacts. In SIDS building resilience is extremely important seeing that climate change is the biggest difficulty they are facing.

Food security

Food security is achieved when all people, at all times, have access to nutritious food, that allows them to live a healthy life. SIDS, due to their vulnerability to natural disasters and reliance on imports, share a complex set of food security.

Biodiversity

Biodiversity exists when there is a variety of ecosystems (water, forrest etc.) and a variety of species (animals, plants, micro-organisms etc.). Biological diversity in island states is extremely fragile due to their small size and the endemic nature of several species.

Sea-level rise

Due to global warming, glaciers are ongoingly melting which results in sea-levels rising. This phenomenon is extremely dangerous for island states since sea-level rise can cause floods as well as other weather catastophies that affect their population and infrastructure which is mainly located in coastal zones.

Blue economy

The blue economy is a concept that encourages a more sustainable use of ocean resources and all marine and maritime sectors. Its goals are improved livelihoods, coastal resilience and economy growth while mitigating climate change related risks.

BACKGROUND INFORMATION

Major threats to SIDS caused by climate change

Island people, their culture and economy are closely tied to their relationship with the oceans. That relationship is threatened due to the impacts of climate change, such as sea-levels rising, coastal erosion, increasingly violent storms and sadly many other.

Sea-level rise

Sea-level rise, one of the consequences of climate change, poses significant risk to SIDS and their sustainable development goals. With glaciers and polar regions melting every day and thermal expansion (since water expands when it warms), sea-level rise increases and SIDS become more vulnerable to it and its consequences.

With most of the citizens living in coastal zones, infrastructure and agricultural land is located there as well. Its effects are and will continue to be significant and profound on settlements, living conditions and their economies. Additionally, with populations growing, and faced with climate change effects, relocation to higher ground and/or beyond national borders will present major challenges.

The shrinking of islands due to rising sea-levels, in other words, the loss of already limited terrestrial territory requires precise adaption measures to be taken including possible abandonment of some island states which would affect their culture and lifestyle.

Tropical cyclones

Another result of accelerated sea-level rise is the increase of flooding by tropical cyclones and coastal erosion.

The occurrence and destructive power of tropical cyclones and storms is constantly increasing in SIDS. Large cyclones affect significant percentages of the

population, since they often encompass the whole islands. In addition, more frequent tropical cyclones result in severe loss and damage, since the affected areas, especially in developing countries, have insufficient resources to recover between occurring.

Furthermore, tropical cyclones, also referred to as hurricanes, have significant environmental implications, such as destruction of coral reefs, which are very productive ecosystems. Coral reefs do not only support biodiversity, they are also of substantial value to humankind because they absorb energy waves and protect the environment through the reduction of coastal erosion. They constitute the essential “protectors” of a variety of marine species which have provided island societies for millennia.

Coral bleaching occurs as a further consequence of climate change. The process of coral bleaching is when corals expel their symbiotic algae located in their tissues, which is crucial for their health and survival, resulting in them turning completely white. This phenomenon is caused by climate change because a warming planet ensures, among other things, a warming ocean. As a matter of fact, when the slightest increase in water temperature (about 1°C above average) takes place and does not change, the coral won’t let algae back and dies. Corals may bleach for other reasons too, like pollution and overfishing. This destruction is of great importance because once these corals die, they cannot grow back and/or reproduce and entire reef ecosystems on which people and wildlife depend, collapse. For example, at least 500 million people globally rely on coral reefs for food and income, as well as their coastal protection.

Transport infrastructure

Apart from environmental disasters, climate change catastrophes have also affected transport infrastructure (maritime and air transport) in SIDS. For instance, in the Fiji Islands 1/3 of the total government budget is spent on the transportation department and in Dominica transport assets are estimated at 82% of its annual GDP (Gross Domestic Product). Additionally, transport disruption can affect the main economic sectors such as tourism, fishing, as well as cut off access to healthcare and other essential services. But well-functioning transportation plays a crucial role in building climate resilience, because it directly affects trade. Trade is necessary to equip Island States with the necessary technologies and materials, since many islands lack thereof. Enhancing and strengthening transport resilience would benefit SIDS significantly by lessening losses in both assets and safety. Whether transport systems are acting as a connection to high-priority services or as vital conduits during emergencies, they are very important to disaster risk management.

Biodiversity loss

In order to understand the problem behind biodiversity loss, one must understand the term. Biodiversity loss is the extinction of species and living things on Earth or in a

specific ecosystem. Climate change is a crucial cause of biodiversity loss and efforts to understand the connection between them are urgent. Adressing these two global environmental challenges is of great importance, especially for SIDS, since biodiversity resources are already fragile and vulnerable and many people depend upon them. Biodiversity loss undermines the adaptive capacity of island states' terrestrial and marine ecosystems, that in turn increases their exposure to environmental stresses and natural disasters. Biodiversity loss also threatens food and economic security since the tourism industry relies on viable coral reefs and healthy beaches. The combination of climate change and biodiversity and small, fragile ecosystems with extreme vulnerabilities make it difficult for SIDS policy makers to tackle effective and timely climate change resilience measures.

Effects on the people

Health

[3]These long-term risks mentioned above have a high impact on already existing climate-sensitive diseases, like malaria and dengue, in Island States causing a high amount of illnesses and deaths. Many countries already bear a high burden of very vulnerable national health which is then exacerbated by climate change. Men, women and children are under-resourced and unprotected in the face of escalating climate and pollution threats. The main determinants of health (e.g. food, water and air) endangered by climate change need to be addressed and improved immediately as well as the climate-resilience of healthcare facilities (e.g. hospitals). Their capacity to provide health care in the most urgent situations is affected by damage to these facilities due to floods, disturbances in water supply caused by drought etc. Sea levels rising threaten access to land in low-lying islands meaning that agricultural land will no longer be usable, as salt water harms soil and freshwater supplies. This results in people forced to migrate inland or even abandon the island, increasing the risk for infectious diseases and mental health problems. To name one example, rising temperatures, floods and other impacts of climate change create

Figure 1: This image shows the Paediatric Unit in the National Referral Hospital located in the Solomon Islands. Children under 5 years of age are at biggest risk from climate-sensitive illnesses like malaria and diarrhoeal diseases

[3] Figure 1: Climate Change and Its Impact on Health on Small Island Developing States https://www.who.int/news-room/feature-stories/detail/climate-change-and-its-impact-on-health-on-small-

breeding grounds for disease-bearing insects. Mosquitoes, that spread diseases like malaria, dengue and Zika, are especially sensitive to changes in temperature and humidity.

Resilience mechanisms

SISRI (Small Island States Resilience Initiative)

The GFDRR and the World Bank launched SISRI (Small Island States Resilience Initiative) in order to provide island states with the necessary assistance to build resilience to climate change and natural disasters. In the field of resilient transport, for example, the facility supplies governments with technical assistance and helps them in engineering resilient infrastructure. These efforts can lessen costs across the lifetime of the transportation infrastructure and make it more resilient, since future rebuilding in less likely to happen.

Furthermore, in order to improve disaster preparedness and response, Small Island States have basic elements of Social Protection systems in place. Jamaica, as well as several other islands, have implemented Social Protection programs to respond to natural disasters and Comoros and the Dominican Republic, for example, have taken steps to adapt and extend these programs to build resilience.[4] These include social safety net, social services to tackle the needs of affected populations, social insurance etc. With the help of Social Protection, governments can help vulnerable households prepare for disasters and restore livelihoods after a disaster strike. The World Bank, SISRI and other development partners are documenting experiences of countries that have implemented some kind of Social Protection program and facilitating knowledge-exchange and learning on this topic.

Seawalls

In many island states, with sea-levels rising and coasts eroding, communities often respond by building temporary seawalls. Yet seawalls and other defence coastal structure are controversial, due to them being poorly designed and constructed and may

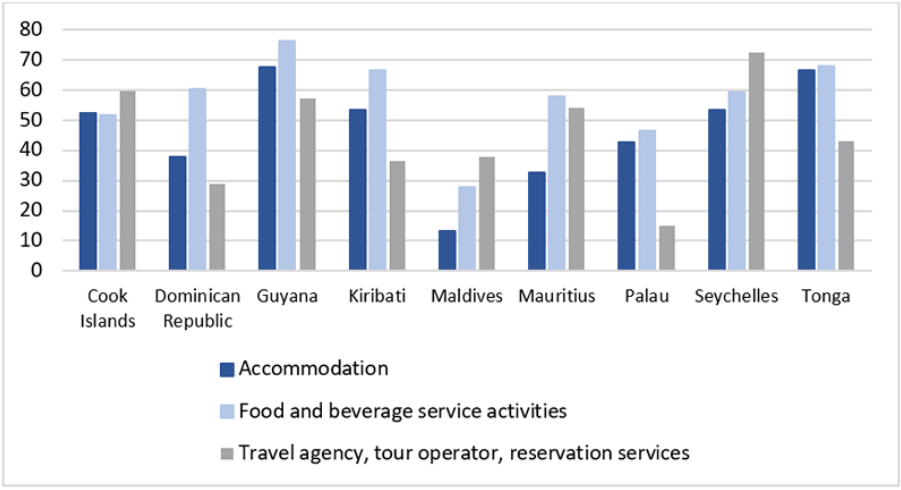
[4] Building Resilience through Social Protection https://www.gfdrr.org/sites/default/files/documents/SISRI%20Knowledge%20Note%202%20-%20Building%20Resilience%20through%20Social%20Protection.pdf

sometimes even exacerbating the situation. For example, in Tuvalu, sea walls have not been sufficiently maintained which resulted in them contributing to coastal erosion. Nevertheless, stakeholders continue to build seawalls as a response to coastal erosion and flooding, since they are either not aware of other ways to protect property at risk or do not have the technological resources to implement other resilience mechanisms.

Current situation

Effects of the Covid-19 pandemic in SIDS

Apart from the usual tragic events caused by climate change the global coronavirus pandemic (Covid-19) has also affected SIDS. Just like all other countries SIDS are confronted with the economic shock, since the tourism industry, upon which many depend, has crippled. To create a clearer picture, tourism composes almost 30% of SIDS' GDP. In the sector of tourism women in SIDS are most likely to be entrepreneurs than in other fields of the economy thanks to fewer entry difficulties. Consiquently, given the large number of female employment in tourism (see graph[5] on the left), women are hit the most by job losses in SIDS. This graph shows the female share of employment in selected tourism-related economic activities in SIDS (in %). Due to the pandemic, the economic crunch will surely make travelling an unaffordable option for many and social distancing measures will exist for an unknown period. This indicates the need for island states to adopt and come up with the necessary strategies while also taking gender equality under consideration.



Cyclone Harold

Furthermore, in April 2020 a tropical cyclone, namely Cyclone Harold, swept across Vanuatu, Fiji, the Solomon Islands and Tonga causing crop and building

[5] Unctad.org | COVID-19 Puts Women Working in SIDS Tourism Industry at Risk https://unctad.org/en/pages/newsdetails.aspx?OriginalVersionID=2370

destruction and loss of life. Cyclone Harold is the strongest tropical cyclone so far in the South Pacific Ocean in 2020.

MAJOR COUNTRIES AND ORGANIZATIONS INVOLVED

The Seychelles

The Seychelles are 115 low-lying islands scattered across the Indian Ocean. The country is particularly vulnerable to the threats of climate change because the majority of the islands lack crucial information on climate change resilient strategies. However, it was the first country to undertake the debt-for-nature swap.

The Republic of the Marshall Islands

The Republic of the Marshall Islands (RMI) are located in the Pacific Ocean, comprising about 1225 individual islands and islets. Most of them have very small land areas and low land elevation which makes them extremely vulnerable to any change in sea-level.

The Republic of Fiji

Fiji is part of Oceania in the South Pacific Ocean and its neighbours are Vanatu to the west and Tonga to the east. Fiji, just like many other island states, faces challenges concerning the implementation of government policies due to its lack of technical and financial resources.

WHO (World Health Organization)

The World Health Organization is a specialized agency of the United Nations promoting health and safety worldwide. It has launched special initiatives on SIDS such as the Special Iniative: Climate change and health in Small Island Developing States. This initiative supports national and regional partners in SIDS by implementing health promoting mitigation policies and by providing national health authorities in SIDS with support.

OECS (Organization of Eastern Caribbean States)

This organization is directly linked to climate change resilience since climate change is one of the most serious challenges the Caribbean Region is facing. It has a climate change programme called The OECS Climate Change Programme and it aims at enhancing the resilience of Member States to climate change impacts.

GFDRR (Global Facility for Disaster Reduction and Recovery)

The GFDRR and the World Bank launched SISRI (Small Island States Resilience Initiative) in 2014 to enhance preparedness and build stronger infrastructure. They are helping island states set up bigger pipelines of resilient financing like safeguarding coastal zones and providing them with a GFDRR and World Bank team.

UNDP (United Nations Development Programme)

The UNDP has also started initiatives such as the “Center of Excellence for the sustainable development of SIDS”. This initiative is based in Aruba and created in 2015 providing a platform to strengthen resilience and innovation among SIDS.

TIMELINE OF EVENTS

DATE	DESCRIPTION OF EVENT
June 2012	The “Rio+20“ UN Conference on Sustainable Development took place in Rio de janeiro, Brazil. Clear measures for implementing sustainable development were set up.
1. to 4. September 2014	The third international conference on SIDS held in Apia, Samoa. Resulted in the implementation of the SIDS Accelerated Modalities of Action or SAMOA Pathway.
2014	GFDRR (Global Facillity for Disaster Reduction and Recovery) and World Bank launched SISRI (Small Island States Resiliance Initiative) in 2014 to enhance

	preparedness, expand social safety nets, build stronger infrastructure.
2015	The “Center of Excellence for the sustainable development of SIDS” is an iniative started by the Government of Aruba, the Netherlands and the UNDP.
May 2017	The Global Platform for Disaster Risk Reduction took place in Cancun, Mexico. Its outcome included a more sustainable movement to strenghthen countries resilience to disasters.
September 2017	Hurricane Irma caused extreme damage in the northeastern Carribbean and the south of Florida
September 2017	Hurricane Maria affected over 90% of the population in Dominica and more than 220% of the countries’ GDP as well as many other countries
2018	At the United Nations Headquarters in New York the Economic and Social Council recognized the greater investment in climate risk reduction and recovery as main steps in helping climate change affected and vulnerable countries.

RELEVANT UN RESOLUTIONS, TREATIES AND EVENTS

UN resolution 47/189

This resolution titled “Convening of a global conference in the sustainable development of all small island developing states” was adopopted in 1992. Under this resolution the first Global Conference on the Sustainable Development of Small Island Developing States took place in Barbados in may of 1994 where the Barbados Programme of Action took place.

UN resolution 47/186

The title of this resolution is “Specific measures in favour of island developing states” and it was also adopted by the General Assembly in 1992. It tackled ways to support SIDS with financial and technical assistance by taking into account their specific needs and problems.

UN resolution 72/217

In accordance with this resolution Member States convened a meeting in the UN headquarters in New York. There the follow-up to and implementation of the SIDS Accelerated Modalities of Action or the SAMOA Pathway took place (mentioned above). This resolution called upon the United Nations and the international community to support SIDS financially so as to strengthen effectiveness and efficiency in providing support to achieve the Samoa Pathway.

PREVIOUS ATTEMPTS TO SOLVE THE ISSUE

Even though climate change has resulted in many extreme weather events and catastrophes, especially in SIDS, countries find it extremely difficult to find essential support from finance mechanisms, in order to provide financial assistance to projects helping people with the effects of climate change. Nevertheless, there have been several innovative climate finance mechanisms implemented so as to assist SIDS by diversifying the kind of funding available. To name a few examples, in 2017, Fiji launched the first Emerging Market Green Bond, to raise funds for climate change reduction and adaption. Another example is the Commonwealth Climate Finance Access Hub, a project, launched in 2016, aiming to make climate financing easier including, inter alia, making successful applications to the international funds regarding climate change. In that year, Seychelles agreed to swap parts of its foreign dept in exchange for investments in climate resilience, especially by protecting its ocean.

There have also been many conferences, such as the 3rd International Conference on Small Island Developing States, from Semptember 1st to 4th, 2014 in Apia (Samoa) and the 4th Meeting of the Small Island Resiliece Initiative (SISRI) that took place in Geneva, Switzerland from May 12th to 13th, 2019, that focused on knowledge-exchange between experts. These conferences allowed the participants to share their vision of a sustainable and climate change resilient future as well as learn from each others experiences. This resulted in SIDS implementing the recommended resilience methods, concerning transport infrastructure, the protection of coastal areas etc. and afterwards advancing them.

POSSIBLE SOLUTIONS

In the past years technology has developed rapidly and has been of use to many issues including climate change. Using it to help Small Island Developing States' governments to get better access to data will allow them to be more prepared and react faster to climate change impacts. Satellite technologies are playing a chief role in making data accessible. It allows island states to monitor natural weather events such as floods and storms, to arrange land use, to use natural resources in a more sustainable manner and to build a case for funding on an international level. However, SIDS lack the digital infrastructure like sea cables and human resources required to analyse the data. Therefore, initiatives are currently focusing on helping island states to build technological capacity. One example is the SISRI which supplies technical and operational support to innovational projects in SIDS. Helping and supporting initiatives such as these will truly influence SIDS positively.

Additionally, a more timely solution would be to strengthen the safeguarding of coastal zones. The combination between "gray" coastal shielding structures, such as seawalls, with "green" interference, such as mangrove restoration is a sustainable and environmental friendly way of doing so. Mangroves are coastal ecosystems that maintain biodiversity as nursery grounds for many species and protect coastal communities against hurricanes, soil erosion etc. Nevertheless, most of them have been destroyed, so their restoration and rehabilitation could offer several benefits to island states.

Moreover, further use of the blue economy concept would also bring great advantage to SIDS. The blue economy aims to balance economic development with environmental protection with the use of marine resources. The first ever global Sustainable Blue Economy Conference was held from 26-28 November 2018 in Nairobi, Kenya and its goal was to have action-oriented conversations about the blue economy in combination with the 2030 Agenda for Sustainable Development.

Last but surely not least is the importance of raising awareness. As previously mentioned, many communities in SIDS lack not only resources but knowledge on climate change resilience as well. There have been several conferences tackling this issue, nevertheless, there are still regions and even countries where the effects of climate change are still destroying their land. Consequently, there is an urgent need for these people to get further educated upon the matter so that they can implement at least some basic strategies.

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