Climate Change, Disasters and Cooperation in SIDS

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"A major obstacle is that the Conferences of the Parties of the UNCCC process require unanimous decisions, even when a huge majority of humankind would like to get better policies to protect them from the impacts of climate change and compensation for losses and damages."

Introduction

The degradation, pollution and destruction of the natural environment have become a serious challenge in many countries of the Global South, including Small Island Developing States (SIDS). The challenges also include natural hazards that have the potential to become serious disasters. Societies located on small islands are particularly exposed to such events.

The Intergovernmental Panel on Climate Change (IPCC) stated in its 6th assessment report that climate change would worsen existing poverty, exacerbate inequalities and unsettle livelihoods in future. Climate change and it impacts particularly affect SIDS. Many of them are located in the Pacific Island region and the Caribbean Sea. Although there are differences between island societies, they have many aspects in common, especially when we reflect on climate change: 1) they have not contributed to the generation of the challenge. Their per capita emissions of Green House Gases (GHG) are miniscule. Their total emissions are even smaller. 2) Despite their insignificant contribution to climate change, SIDS are among the most severely affected countries

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by climate change, and 3) they usually do not have the resources, capabilities and capacities to confront the challenges they are exposed to.

Under such scenario close cooperation between SIDS in the Pacific and the Caribbean Islands (as well as other parts of the world) has become crucial to mitigate climate change exposure, strengthen resilience and adaptive capacities and reduce vulnerabilities. The question this paper explores is whether countries are well equipped to tackle climate change challenges with enhanced resilience.

Climate Change Impacts on SIDS in the Pacific Ocean and the Caribbean Sea

In the second decade of the 21st century, climate change has become an important discourse in academia (Birkmann & McMillan, 2020), a crucial political topic (Zawadzki *et al*. 2020), and for an increasing number of people from all over the world a frightening apocalyptic picture of a perishing earth (Pates & Leser, 2021).

After ideas of climate change had become a scientific paradigm in the 1980s, primary focus was around mitigation (Puertas & Marti, 2021): what can be done to prevent climate change and what is necessary to prevent the global temperatures from rising to the point where they pose a threat to all societies around the globe. At that time, major activities to manage the climate were in the so-called developed world. A major policy instrument, in that regard, had been the Kyoto Protocol, which did not require developing countries to commit any GHG reduction (Kirikkaleli & Sowah, 2021).

Today's major concerns have changed: although mitigation still plays an important role, scientific mainstream has admitted that climate change cannot be prevented to such a degree that no adverse impacts on societies are felt. The paradigm now concentrates on how societies are able to adjust, adapt to or at the very least cope with the impacts of climate change. (Klöck, 2020; Leal Filho, 2020; Robinson, 2020). In this context, questions on how poor countries that are particularly exposed to the impacts of climate change are able to adapt to the various hazards and to recover from impacts are crucial. Much work in the recent past has been on the resilience of island societies (Klöck, 2020).

Vulnerabilities and Resilience of SIDS in Pacific Ocean and Caribbean Sea

Major vulnerabilities for SIDS is their exposure to climate change impacts, like on agriculture, affecting food security, health, possibly favouring diseases that disperse well in warmer climates. Further, there are concerns relating to natural hazards caused or intensified by climate change, which can easily turn into disasters. Hazards of particular concern are tropical cyclone (in the Caribbean Sea called hurricanes), floods and droughts.

Food Insecurity

Pacific island countries do not have histories of distinct food insecurity like many countries in Africa and South Asia. However, some time ago

Bruce Currey (1980) brought together historical records on food insecurity and famine in the Pacific. He concludes that famine vulnerability is closely related to 'the prevalence of natural disasters and the limited ability of isolated island social systems to adapt to these events' (Currey, 1980:447). More recently Pacific islands have become locations where obesity is a more serious articulation of malnutrition than the lack of food (Tsuchiya *et al*., 2021). People living in Pacific Islands such as the Cook Islands, Nauru and Tonga have the highest prevalence of obesity in the world (Akkiz, 2021; Lobstein & Jewell, 2021). Similarly, in the island societies of the Caribbean Sea, there is widespread hunger and long-lasting famines, although the hunger crises originated in the first place due to colonialism, slavery and poverty of indigenous populations. Haiti, in particular, stands out with very high levels of mal- and under-nutrition related to wide-spread poverty (Martínez, 2005).

The literature on economic and environmental vulnerability of SIDS frequently highlights small islands' exposure to natural hazards (see below) and their difficulties in responding adequately to such shocks. Here, the connection between climate change and food insecurity becomes particularly relevant. Two aspects contradict such an enhanced vulnerability of small island societies and their food security to natural hazards: frequent exposure to risk and shocks actually should enhance coping mechanisms to such events. The more often people are exposed to such shocks the better they learn to cope. It also seems that today Pacific Island societies are not suffering from famine or food crisis or even from under-nutrition to an extent we know it from many parts of Africa and Asia. On the other hand, an enormously high share of Pacific Island population suffers from lifestyle diseases caused by obesity rather than insufficiency of food supply, though doubtless, it is indicative of malnutrition of a quite different type. This does not necessarily mean that climate change impacts and food security are irrelevant for SIDS. It surely means that vulnerabilities that emerge are complex and beyond the traditional perception of food crisis, hunger and starvation. Although changes in agricultural production systems are important aspects to consider, changes in access to resources, dependency on food imports and changes in international food systems and prices are equally important.

Challenges exist particularly for atolls and other small and isolated islands. Kiribati and other atoll countries import most of the food for their citizens. Conditions for agricultural production are very restricted and it is not possible to provide a varied diet to people living on atolls and coral islands. However, it is to be noted that bigger countries with well-established agricultural systems also import large amount of food and expending much of their valuable foreign exchange.

Natural Hazards and the Dangers of Disasters

Natural hazards are events that have the potential to cause disasters. Natural hazards are considered to be events of nature, although such perspective

is at times not clear, exclusive and/or unequivocal. A flood can be a natural or a human-made event or have both aspects such as too much rainfall, deforestation in the hinterland, negligence of drainage systems, and others. If we follow the idea of human-made climate change then devastating tropical cyclones are not necessarily and exclusively natural hazards, but are often influenced by human activities. Activities that lead to higher water temperature in tropical regions, for instance, intensify cyclone hazards (Balkaran, & Smith, 2021). Other 'natural' hazards that intensify under the impact of climate change are droughts and floods (Birkmann *et al.*, 2021; Johnson, Higgins, & Stephens, 2021; Roopnarine *et al.*, 2021). Even when the debate whether climate change can cause earthquakes and tsunamis (McGuire, 2013) is so far inconclusive, there is little doubt that tsunamis can become more damaging due to climate change. Higher sea levels increase the exposure of coastal areas to tsunami waves.

Pacific and Caribbean Islands indeed are severely exposed to hazards that are moderated through climatic factors. Table 1 show that windstorms (particularly Tropical Cyclones in the Pacific islands region and Hurricanes in the Caribbean islands) top the list of disasters between 1980 and November 2021 in these regions. Windstorms caused 48 per cent of disasters in Pacific Island countries; in Caribbean countries it was 57 per cent. In both regions, floods stand second in the frequency of disasters arising from 'natural' hazards. All in all, 'windstorms' and 'floods' cause 62 per cent of disasters in Pacific Islands and 85 per cent of disasters in Caribbean Islands.

Table 1: Type and Frequency of Disasters in the Pacific and Caribbean Islands (1980-2021)

	Pacific Islands						Caribbean Islands					
	1980-1989	1990-1999	2000-2009	2010-2019	since 2020	total Pacific	1980-1989	1990-1999	2000-2009	2010-2019	since 2020	total Caribbean
Windstorm	37	30	36	40	10	153	41	67	94	69	13	284
Flood	4	3	21	15	3	46	30	24	40	45	1	140
Earthquake	5	13	11	7		36	-	2	6	2	3	13
Volcanic	1	4	11	6		22	-	4	1	-	1	6
Drought	2	6		10	1	19	5	5	4	9	-	23
Others	5	9	17	10	2	43	5	8	5	12	2	32
total	54	65	96	88	16	319	81	110	150	137	20	498

Source: Compiled by author using EM-DAT (2021).

Over the past few decades, droughts have also caused severe disruptions of societies in Tuvalu (2011; Sinclair, Atumurirava, & Samuela, 2012), Kiribati (2011); Niue (2012), Cook Islands (2015); PNG (2016), and the Marshall Islands (2015-16; RMI, 2017) (Iese *et al*. 2021). There are also reports of droughts emerging from Caribbean islands. Countries with the highest incidences of droughts are Cuba (1981, 1986, 1993, 1998, 2000, 2004, 2015), Haiti (1980, 1992, 1993, 2003, 2014, 2016), and Jamaica (1981, 2000, 2014). In the past 41 years droughts in these three countries affected some 6.8 million people, most of them (5.7 mill) in Haiti (EM-DAT 2021; see also Gamble *et al*., 2010, Herrera *et al*., 2020; Miller& Ramseyer, 2020).

Whether disasters have become more frequent in SIDS in the past 40 years is difficult to say. The figures do not give a clear picture. This is also because in recent decades reporting has become more precise and more complete. There is much evidence that recording improved in more recent decades, and lower frequencies of disasters in decades further in the past can be because of under-reporting (Leonard & Law2019; Ray et al., 2021).

Disasters in Pacific Islands

In the Pacific Island region, Fiji, Vanuatu, Tonga, Solomon Islands and Samoa are the countries with the highest frequencies of disasters that are possibly influenced by climate change (windstorms, drought, and floods). Looking at such indicators,

Table 2: Type of disasters from different hazards in Pacific Island countries (1980 -2021)

	Pacific Island Countries														Pacific Territories						
	Polynesia						Melanesia				Micronesia				P	P	P	Me	Mi	Mi	
hazard	Cook Islands	Niue	Samoa	Tokelau	Tonga	Tuvalu	Fiji	Papua New Guinea	Solomon Islands	Vanuatu	Kiribati	Palau	Marshall Islands	Micronesia (Fed. Rep.)	Amerocan Samoa	French Polynesia	Wallis & Futuna	New Caledonia	Guam	Northern Mariana	total
Windstorm	7	2	8	3	15	6	33	6	14	20	1	3	2	7	3	3	2	7	7	4	153
Drought			1		1	2	3	3	3		1	1	2	2							19
Flood			1				11	20	5	2	2		2	1	1	1					46
Earthquake			1		1		2	16	5	8					1		1		1		36
Volcanic								13		8										1	22
Biological	3	1	1		2		1	7	2	2		1	1	1				1			23
Landslide								14		1						3					18
Wildfires			1					1													2
	10	3	13	3	19	8	50	80	29	41	4	5	7	11	5	7	3	8	8	5	319

Source: Compiled by author using EM-DAT (2021).

however, one has to consider that the countries that stand out in absolute terms are by far the biggest countries in the Pacific Island region. More than 52 per cent of the windstorms were recorded in Melanesia, another 9.7 per cent fall in Polynesian countries and territories.

Looking from a relative perspective, tiny countries like Niue, with just some 1,500 inhabitants, are severely affected by Tropical Cyclones. In each case 100 per cent of Niue's population is exposed to such hazards. Plans have been discussed more than once to evacuate all residents of Niue to New Zealand because of the very high risk to its people caused by Tropical Cyclones (Wade 2005). After Tropical Cyclone Ofa in 1990, the tiny island-nation Niue became a food-dependent country for more than two years. Tropical Cyclone Heta hit the country in 2004. The impact on agriculture was even bigger (Wade 2005). In Samoa tropical cyclones Val & Wasawas are the worst tropical cyclones affecting Samoan since the 1889 Apia cyclone. It caused damages of 230 per cent of the country's GDP (World Bank 2006).

In disaster years more than 10 per cent of Fiji's population are affected causing damages of around eight per cent of the country's GDP. Figures for Samoa, Tonga and Vanuatu were even higher. In these countries above 40 per cent of the population are affected in a disaster year. Damages took major shares of the respective countries' GDP. Samoa stands at top of the list, where damages from disasters are above 45 per cent on average of disaster years (World Bank, 2007).

The world's biggest disaster in recent decades caused damages of around 1-2 per cent of the respective countries GDP in the year (Hurricane Katrina, 2005

Table 3: Type of disasters in various Pacific Island countries according to hazards (1980 -2021)

hazard	Anguilla	Antigua and Barbuda	Bahamas	Barbados	Cayman Islands	Cuba	Dominica	Dominican Republic	Grenada	Guadeloupe	Haiti	Jamaica	Martinique	Montserrat	Netherlands Antilles	Puerto Rico	Saint Barthélemy	Saint Kitts and Nevis	Saint Lucia	Saint Martin (French)	Saint Vincent .Grenadines	Sint Maarten (Dutch)	Trinidad and Tobago	Turks and Caicos Islands	Virgin Island (British)	Virgin Island (U.S.)	total
Windstorm	4	9	18	8	7	37	11	34	4	7	38	21	10	3	2	18	1	7	12	1	9	1	4	7	4	8	285
Drought		1		1		7			1		6	3				1			1		1		1				23
Flood	1		2	1		23		28		1	58	7				7		1	2		6		3				140
Earthquake				1		1	1	1		1	3		1			2			1				1				13
Volcanic						2							1	4							1		1				9
Biological								8			7	2							1		1						19
Landslide											1					2			1				1				5
Wildfires						2		2																			4
	5	10	20	11	7	72	12	73	5	9	113	33	12	7	2	30	1	8	18	1	18	1	11	7	4	8	498

Source: Compiled by author using EM-DAT (2021).

caused damages worth 1.1 per cent of USA GDP; Tōhoku earthquake, tsunami and nuclear disaster, Japan, in 2011-the damages were less than 2 per cent). Compared to this, average damages of 30-45 per cent in disaster years have been recorded in Pacific Island countries like Vanuatu and Samoa. In case of Samoa, economic damages recorded have been of 161.8 per cent of the GDP and in Vanuatu, damages have been 131.2 per cent of the GDP for individual disasters. This shows that in relative terms, disasters in Pacific SIDS can be huge (Lee, Zhang, & Nguyen, 2018). Such relative figures particularly help to comprehend the difficulties societies and governments have to deal and recover from such events.

Major challenges of sea-level rise exist for atolls and low-lying coral islands; however, river valleys and coastal areas of volcanic, high islands can also be severely exposed (Johnson, Higgins, & Stephens, 2021; Velmurugan, 2008). Pacific Islands have a very big population living on atolls and low-lying coral islands. Around 300,000 Pacific Islanders lived in mid-2020 on atolls and low-lying islands, the majority in Kiribati (120,000) and the Marshall Islands (55,000). Presently, many atoll/low-lying coral islands experience severe flooding, when king tides happen (Cauchi *et al.*, 2021; Román-Rivera & Ellis, 2018).

Disasters in Caribbean Islands

There are also severe challenges coming from natural hazards in the Caribbean Island region. As already indicated, the most frequent and most destructive hazards come in forms of Tropical Cyclones, in this part of the world called Hurricanes. Between 2020 and 2022 Hurricanes Elsa, Eta, Isaias, Laura, and Ida were the most destructive ones, happening at the same time when countries were battling the COVID-19 pandemic.

Hurricane Elsa (July 1-July 14, 2021) affected Cuba, Barbados, the Dominican Republic, Jamaica, Haiti, Saint Lucia, Saint Vincent and the Grenadines, and other Caribbean islands before it reached the United States of America. For Barbados it was the first hurricane in 66 years (Jamaica Observer, July 2, 2021). It damaged more than 1,300 homes, causing power cuts to the entire island. In Saint Lucia and Saint Vincent, one person died and heavy damages (USD 34 million) were inflicted to the banana crop in Saint Lucia. The people of Saint Vincent and the Grenadines were still recovering from the eruption of La Soufrière volcano which affected them three months earlier (UNST, 2021). More damaging were hurricanes Isaias (July 30-August 6, 2020) and particularly Laura (August 20-August 29, 2020), although Isaias brought an end to a long drought in Puerto Rico, Dominican Republic and other Caribbean islands.

One of the deadliest hurricanes was Laura, which killed at least 81 people (Haiti 31, Dominican Republic 9, USA 41). Damages have been estimated at USD 19 billion, most of them in the USA, where also major agricultural losses happened, greater than Hurricanes Katrina and Rita combined had caused (The Advocate, 2020).

Most recently Hurricane Ida (August 26, 2021-September 4, 2021) has caused severe damages in the Caribbean Islands

region, the USA and Canada. Next to Hurricane Katrina (2005) Ida has been the worst damaging hurricane ever recorded in the USA. Total insured losses from Hurricane Ida were estimated between USD31 billion and USD75 billion (Lerner, 2021; NOAA NCEI 2022). Flooding caused by Ida killed 20 people in western Venezuela. An even greater death toll (96) suffered by the USA.

Examples from Central America, however, show that severely damaging and deadly hurricanes in the Americas are not restricted to the Caribbean Island region. Hurricane Eta (October 31, 2020-November 14, 2020) was most damaging in countries in South (Colombia), Central (Nicaragua [2 deaths; 30,000 affected], Honduras [110; 4.6 mill], Guatemala [160; 2.4 mill], El Salvador,Costa Rica [2], Panama [79], Belize [0; 60,000], and Mexico [31; n.a.]) and the USA [12; n.a.] (Jasper , 2020; Stewart, 2021; EM-DAT, 2022). Close to 400 people were killed and the hurricane affected more than 7 million people in Central America. The entire damage was in the range of USD 7.3 billion. The Caribbean Region was marginally affected in Cuba and the Cayman Islands.

Hurricane Iota (November 13, 2020-November 18, 2020) followed less than two weeks after Hurricane Eta. It caused 84 deaths (Colombia, 10 deaths; El Salvador, 2; Guatemala, 2; Honduras, 13; Nicaragua, 39; Panama 1). The damage was at least USD 1.4 billion. (Pasch *et al*., 2021; EM-DAT, 2022).

Social Impact of Climate Change

Climate change has multiple severe social impacts. Exposure to food insecurity has already been highlighted. One of the disturbing impacts of climate change is when people are no longer able to stay in their places of residence. Natural hazards can cause displacement or resettlement (Boyd *et al*., 2021; Brown *et al*., 2021). Situations of displacement or unavoidable resettlements are not dangers which will happen sometime in the future, but they are already happening (Klöck & Nunn2019; Kupferberg, 2021; Nunn *et al*., 2020; Tabe, 2019). Closely related to this are migration efforts of people possibly because of climate change. A severe challenge is also when climate change destroys or devalues people's sources of livelihoods.

Resettlement and Displacement as Impacts of Climate Change

Often expressions like climate refugees take up the matter of displacement in a populist, sensationalist manner, but there is no doubt that environmental and climate change can make locations uninhabitable (Weber, 2014). SIDS are particularly exposed to such challenges as land for alternative and more suitable residence is scarce or just not available at all. Often displacement goes along with natural hazards such as cyclones/ hurricanes and flooding. When cyclones/ hurricanes/ floods destroy people's houses, displacement can be long-term/ permanent. Often it is temporary, particularly when evacuation centres are available where people can seek protection during such events and return to repair, build back their properties once the hazards are over (Pill, 2021; Siebeneck *et al*., 2021; Wu *et al*. 2019).

Social scientists, politicians and policy makers are still struggling to put a name to the phenomenon. Expressions like 'Climate / environmental displacement' or 'climate change-induced migration' suffer as such complex processes like displacement can hardly be explained through simple, mono-causal statements. The same applies to the question of whether people who fled their country due to environmental and climate change or natural hazards are entitled to a special legal status. The term "environmental refugee" was first used in a UNDP report in 1985 as "people who are forced to leave their traditional habitat temporarily or permanently because of a pronounced environmental disturbance [...] that threatens their livelihood and/or significantly affects their quality of life" (El-Hinnawi 1985, p. 4; see also Braga, 2020). Other sources note that this terminology appeared earlier and attribute it to Lester Brown (Hassine, 2019; Jolly, & Ahmad, 2019). The Convention Relating to the Status of Refugees (1951) and its protocol of 1964, however, does not accept environmental degradation or climate change as valid reasons to receive the status of a refugee although countries like Australia and New Zealand have started to provide refugee protection for some people who suffer from climate change (Osobka, 2021).

In Oceania, the applications of refugee issues are not very wide spread - except in Australia. After the Tampa incident of 2001, a very restrictive refugee policy was started in Australia - known as 'Pacific Solution'. It entailed that nobody will be allowed to reach Australia without permit by ship, and applications as asylum seekers will be processed on Manus Island (PNG) or Nauru. Many are worried that such restrictive policies will also be applied, when people have to leave their home islands / countries because of climate change, a hazard to which they have hardly contributed anything (Ibekwe, 2021; Kalir, 2022; Moretti, 2021; Weber, 2015).

In the Caribbean Island region, there are often reports of floods and hurricanes that people have been displaced temporarily or were advised to move their residences further in-land, away from the shore (Thomas & Benjamin, 2018, 2020).

Resettlement in contrast to displacement is an organised approach to bring people to safety who are insecure in the places they live (Nalau, & Handmer, 2018). The Fiji Government was the first to enact a Planned Relocation Guidelines document in 2018, which provides policies as well as implementation plan to support people who are no safer in the places they reside and have to move elsewhere. The Planned Relocation Guidelines was developed under the guidance of the Ministry of Economy with support from the DeutscheGesellschaft für Internationale Zusammenarbeit (GIZ) and Prof. Cosmin Corendea (Bertana, 2020; COP23, 2018; McNamara&Des Combes, 2015; Piggott-McKellar *et al*. 2019). Plans for planned community relocation in Fiji exists since 2007 (Cawaki 2007, pers. communication), but due to insufficient resources, only a handful relocation projects have been completed so far. First, the relocation of Vunidogoloa in the eastern part of Vanua Levu was completed in 2014 (Bertana, 2018).

Another effort is by the people of Kiribati to prepare for a future when living on their own islands becomes more difficult. In 2014, their government under the then president Anote Tong bought some 2,500 ha of land at the Natoavatu Estate on Vanua Levu, Fiji's second-biggest island (Fröhlich, & Klepp, 2019; Klepp, 2018; Klepp, & Herbeck, 2016). The primary objective was to use the land for food production for Kiribati, but many assume that the land is also intended to provide a new home to I-Kiribati when they have to leave their home islands, intending to enhance the economic and social resilience of Kiribati in the face of climate change. President Anote Tong followed an approach he called 'migration with dignity' (Fladvad, Klepp, & Dünckmann, 2020), which reflected on the 'Pacific Solution' and how badly refugees are also treated elsewhere (Tong, 2010; pers. communication).

Climate change induced migration

Most social scientists agree that migration and environmental quality may be linked in one way or another. At the same time, it is highly contested that there are simple casual relationships between people's mobility and climate change. Indeed, there is little agreement on what exactly constitutes migration which is caused as a result of environmental change. It is often unclear whether migration is the only driving force or if a decision to move is the result of more complex processes and considerations (Santos, & Mourato, 2021; UK Government Office for Science Foresight Report 2011). There is no automatism between climate change and migration. One cannot say: 'the more rainfall, the more droughts, or the increase in Tropical Cyclones the more migration'.

A very important aspect is that migration is often a crucial part of poor people's livelihood strategies. The need to diversify sources of livelihoods often requires to move. The idea is not recent, but discussions going back to the early 1970s (Meillassoux, 1972, 1973). Discussion on the articulation of modes of production argued that same households can be engaged in subsistence and capitalist world market production at the same time (Mafeje, 1981; Soiffer, & Howe, 1982; Trapido, 2016). The discourse then took a distinct Indian stream discussing pre-capitalist/feudal and capitalist modes of production and their impacts on peasant societies (Patnaik, 1990; Washbrook, 2007). A similar notion took the so-called Bielefelder Verflechtungsansatz (Bielefeld Approach of the Articulation of Modes of Production), which more distinctly argued that poor and vulnerable sections of societies aim to reduce risk by diversifying their sources of livelihoods. To be able to pursue such livelihood, strategy migration plays a crucial role (Bohle; Elwert, Evers, & Wilkens, 1983; Neubert, 2019; Rauch, 2014). A particular Pacific Islands notion of ideas about the articulation of modes of production contains the so-called MIRAB approach. It is argued that the people in some Pacific Island countries do much better than the 'health' of the economies of their countries would expect. The explanation of this contradiction is that many people **mi**grate and send **r**emittances. At the

same time the economies of countries receive high per capital **a**id inflows that help to entertain huge public sectors/ **b**ureaucracies. Mobility, thus, is perceived as one way of adaptation. The question, therefore, is not if mobility is good or bad, but efforts need to concentrate to assure that migrants can reap benefits from leaving their homes and moving to other places. More recently such approaches have found new attention through a perspective of 'translocality' and 'translocal' development (Peth, & Sakdapolrak, 2020; Porst, & Sakdapolrak, 2018; Weber, 2017; Weber, Kissoon, & Koto, 2019).

Like highlighted above, SIDS in the Pacific as well as in the Caribbean are usually seen vulnerable territories in the context of climate change. Discourses of resilience have played crucial roles to identify how island societies can cope with adverse impacts of climate change. Indeed, expectations go beyond coping, long-term adaptation, resilience (bouncing back) or even more, like it is expressed in the slogan 'to build back better' have raised hopes that the destruction in societies can even be an initiation to enhance development (Kelman, 2014). SIDS' resilience closely depends on their ability to cope with the impacts of natural hazards. This includes social and economic aspects of resilience, meaning that with such innovations, societies become better prepared to face future challenges. To bounce back to where societies have been before a disaster struck will inevitably lead to a repeat of a disaster, if the same happens again.

South-South Cooperation among SIDS

South-South Cooperation involving SIDS has become a serious mechanism to advance issues that are of particular importance for small island states.

Climate change intensifies the divide between the haves and the have-nots. It makes the differences between rich and poor people wider, but also widens the gap within rich and poor countries (Weber & Kopf, 2018). A particular role in this divide corresponds to SIDS, which are particularly exposed to severe impacts of climate change. At the same time, they do not have the capacities and capabilities to adequately respond to these challenges (IPCC, 2014).

At the same time, South-South Cooperation to address climate change is embedded in national and international discourses of development. Such cooperation reflects in constellations of the international economic and political system. SIDS have organized themselves in the Alliance of Small Island States (AOSIS). Often, they seek and get support from the Group of 77 (G77) and the Non-Aligned Movement (NAM). Moreover, memberships in these three groups of countries overlap.

When in 1995 the first Conference of Parties (COP1) met in Berlin, reduction of Greenhouse Gas (GHG) emissions was decided. This was supported by G77 and all countries of AOSIS. Two years later the Kyoto Protocol was born, requiring participating developed countries in Annex 1 to reduce their GHG emissions, while of countries in the South, including the SIDS did not

need to reduce any emissions. The Kyoto Protocol was weak as the USA did not ratify it and as China and India, two big emitters of GHG, were not among those countries required to reduce emissions.

AOSIS lobbied strongly for the Paris Agreement of 2015 (Fletcher, 2021). Important demands were to reduce the impact of dangerous climate change by keeping the increase in the mean global temperature well below 2 °C compared to pre-industrial levels. SIDS, with support of AOSIS and other developing countries were the strongest supporters of the 1.5 °C target in the Paris Agreement (The Economist, September 19, 2019). The agreement then envisioned to restrict the increase to 1.5 °C. (DeConto *et al*., 2021; Peterman & Cordes, 2021; Rogelj *et al*., 2016, 2019). Some scientists even raised concerns, if an increase of not more than 1.5 °C would prevent serious damages to SIDS in the Caribbean Islands (Clarke *et al*., 2021).

In addition to the goal to prevent dangerous climate change by curbing temperature increases, AOSIS at the COP26 in Glasgow lobbied for developing countries to receive USD 100 billion per year climate starting in 2020 (and not in 2023). SIDS have huge challenges to procure climate finance. Since COP15 (Copenhagen, 2009) and COP16 (Cancun, 2010) developed countries made commitments to provide USD 100 billion a year by 2020 (UNFCCC; 2009), but so far this did not happen. AOSIS also wants that subsidy on fossil fuel should be phased out by 2023 (Suresh, 2021). AOSIS' suggestion is certainly worth considering, but it appears that poorer countries might be more severely affected than richer ones. In many OECD countries fossil fuels are heavily taxed and do not receive subsidies. There has been also a considerate change in recent decades, where electricity generation is concerned. The path away from fossil fuels for power generation is far more advanced in developed countries than in the South, where power stations are often also highly insufficient (Fuhr, 2021).

The most important demand SIDS have been to get compensation for losses and damages that affect them due to climate change (Ferreira, 2021; Siegele, 2021). Article 8 of the Paris Agreement gives a strong foundation to compensate loss and damages, but so far implementation has been insufficient. Already in 1991, AOSIS had suggested to set up a compensation and insurance mechanism for losses from climate-induced sea-level rise (Mechler, & Deubelli, 2021). Financial mechanisms to compensate for losses and damages are separate from the USD 100 billion already pledged, but not yet provided (Khadka, 2021).

Conclusion

SIDS have a very strong interest that climate change mitigation is successful and that they receive support for adaptation measure. As they are not able to shoulder severe challenges that come their way, for instance, in the form of intensifying hazards, they need compensation for damages from processes to which they have little contribution, but are severely affected.

Climate change impacts are not only about losses and damages to the countries' exchequer. They have severe impacts on people's social, economic

and even cultural lives. Not a few have to reorganize their entire lives, leave the places they have lived for most of their lives, see coastal erosion eating away their land and after a while even their houses. What earlier was called a century flood or cyclone, now happens every couple of years, undoing development people had built for decades.

SIDS appear to be tiny and thus weak. Such perspective does not necessary show a complete picture. By 2020, the United Nations Department of Economic and Social Affairs listed 52 SIDS, although only 36 of them are members of the UN. This is a considerable share of UN member countries, although far from a majority. With support of G77 (134 countries) and NAM (120), things look different, although, as mentioned above, membership overlaps. The three groups - SIDS (UN members), G77 and NAM constitute 140 countries. This is 72.5 per cent of the UN General Assembly, where there is one country one vote. There are 28 countries that are members of all three groups (SIDS, G77, NAM), another seven SIDS are members of the G77, but not of NAM. Only three SIDS (Aruba, Palau, Tuvalu) hold no membership in either G77 or NAM.

This certainly does not mean that policies supporting climate change mitigation and adaptation policies automatically become mainstream, or that compensation for losses and damages are easy to achieve. Many G77/ NAM members face similar challenges of development, which are disturbed by climate change. Coalitions with SIDS are feasible in important questions. A major obstacle is that the Conferences of the Parties of the UNCCC process require unanimous decisions/ final texts, even when a huge majority of humankind would like to get better policies to protect them from the impacts of climate change and compensation for losses and damages (Khadka, 2021).

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LAUNCH OF IRIS AT COP26: INDIA'S ASSISTANCE TO SIDS

At the 26th session of the Conference of Parties (COP26), an initiative - Infrastructure for Resilient Island States (IRIS) - to boost the infrastructure in SIDS was launched by India, Australia, and the UK in collaboration with SIDS (Fiji, Jamaica and Mauritius). This initiative is aimed at providing technical support on the issues posed by infrastructure systems, and work with SIDS to find potential for partnerships to strengthen infrastructure systems in these nations for resilient development. Prime Minister Narendra Modi said at the conference in Glasgow that the Indian Space Research Organisation (ISRO) will develop a dedicated data window for SIDS to collect timely information on cyclones, coral-reef monitoring, and coast-line monitoring through satellite.

PM Modi recognised that climate change poses the greatest threat to the lives and economies of small island developing states. India made special preparations for cooperation with Pacific Islands and CARICOM countries after identifying the threat of climate change to SIDS. Solar technology training was provided to the citizens, among other contributions to their development.

Source: NDTV. (2021, November 02). India to Build Special Data Window For Information On Cyclones: PM Modi. Retrieved from https://www.ndtv.com/india-news/indias-isro-to-build-special-data-window-for-information-on-cyclones-pm-modi-2597045

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