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# Lessons from Maldives and Mauritius for India-adaptation and mitigation strategies to mitigate climate change impacts

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**Abstract**
The escalating sea levels pose a significant threat to coastal regions and small island nations, particularly those reliant on tourism. These regions possess valuable tourism resources, which are progressively deteriorating due to a range of coastal. This research aims to point out adaptation measures in two significant Small Island Developing States (SIDS) located in the Indian Ocean, namely Maldives and Mauritius. The method of study is review of literature based. The findings from this study will contribute to the development of effective adaptation strategies to address the challenges posed by global warming in India. Both the governments of Maldives and Mauritius have already taken initiatives to combat climate change. However, they face certain challenges in the implementation of these programs. Despite being among the least contributors to global greenhouse gas emissions, SIDS are disproportionately affected by the adverse consequences of climate change. Similarly, India, with its extensive coastline, is also at risk due to the vulnerability of the Indian Ocean to climate change. Learning from the experiences of other nations in terms of adaptation strategies will enable India to adopt more effective measures to address the challenges posed by climate change.

**Keywords:** Climate change impacts, Maldives, Mauritius, Indian Ocean, adaptation

## Introduction

Tourism has emerged as a highly attractive and significant economic sector worldwide, contributing substantially to economic growth. It plays a vital role in countries' GDP, foreign exchange earnings, job creation, and overall prosperity. Additionally, the tourism sector supports various other industries, such as transportation, communication, retailing, and agriculture, contributing to comprehensive economic development. Globally, tourism accounts for 10.4% of GDP and employs approximately 319 million people, constituting around 10% of global employment (Manzo, 2019). The tourism industry acts as an economic booster for both developed and developing nations. This is particularly true for Small Island Developing States (SIDS) and coastal zones, which heavily rely on tourism. These small islands possess natural attributes, such as pristine coastlines, diverse biodiversity, pleasant climates, and unique wildlife, making them attractive destinations for tourists worldwide (Michael Hall, 2010) [18]. Notably, several SIDS, including Aruba, Maldives, Macau, Anguilla, Seychelles, Vanuatu, and Cook Islands, are highly dependent on tourism, with tourism accounting for a significant share of their economies (Stauvermann & Kumar, 2016) [26].

According to predictions by the Intergovernmental Panel on Climate Change (IPCC), the global mean sea level is projected to rise between 15 to 95 cm by 2100. Additionally, the global mean temperature has increased by 0.6 to 1 degree Celsius over the past century, making it the warmest century on record (Essays, 2018). The rising temperatures in the atmosphere contribute to the melting of polar ice and snow, increasing sea levels. This phenomenon poses a significant threat to the lives and livelihoods of populations residing in Small Island Developing States (SIDS) and coastal zones. These regions are particularly vulnerable to the impacts of climate change, as highlighted by the Intergovernmental Panel on Climate Change (IPCC, 2019) [13]. SIDS, home to approximately 65 million people (around 10% of the global population in 2010), and coastal zones, inhabited by around 680 million people (also around 10% of the global population in 2010), are among the first to experience the consequences of rising sea levels (IPCC, 2019) [13].

The accelerated melting of ice sheets contributes to the global mean sea level rise, coupled with climate change-induced factors such as tropical cyclones, increased rainfall, and extreme waves, exacerbating oceanic events and coastal hazards (IPCC, 2019) [13]. The economies of these regions are highly sensitive to climate change, particularly due to their heavy reliance on tourism, which is significantly influenced by climatic conditions. Furthermore, the adverse impacts of climate change may render these areas less habitable for human beings, potentially resulting in large-scale migration to mainland regions. The issue of climate change has garnered significant global attention, leading nations worldwide to take action and seek solutions to mitigate its adverse impacts. According to the IPCC report, the pace of sea-level rise is crucial in determining the feasibility of adaptation efforts. However, the projected estimates of sea-level rise are high and complex even at a warming of 1.5 degrees Celsius, making adaptation challenging and more so at a warming of 2 degrees Celsius (Thomas & Schleussner, 2018) [28]. The IPCC Assessment Reports emphasize the need for adaptation and mitigation measures to address the potential threats faced by SIDS, as the very existence of human life and ecosystems in these nations is at risk due to rising sea levels. Globally, there is a growing focus on research and development initiatives to

better understand the impacts of climate change on the livelihood options available in SIDS.

This study focuses on the impacts of climate change on tourism in two selected Small Island Developing States (SIDS), namely, Maldives and Mauritius, as well as the strategies implemented to mitigate these impacts. Both Maldives and Mauritius heavily rely on tourism as a major contributor to their GDP, making them particularly vulnerable to the effects of climate change due to their geographical locations. Additionally, these nations are situated in the Indian Ocean and share cultural similarities with India. This paper aims to examine the climate change impacts on tourism in Maldives and Mauritius and explore the mitigation and adaptation strategies adopted by these destinations. By studying the climate change threats and the measures taken by these countries, valuable insights can be gained for Indian policymakers in addressing the challenges of climate change in the Indian coastal zones and islands. India, like many other nations, is also grappling with the impacts of climate change, making it crucial to learn from the experiences of SIDS. The lessons learned from Maldives and Mauritius can assist India in mitigating the challenges posed by rising sea levels and other coastal hazards resulting from global warming.

The study initially examines the significant threats posed by sea-level rise in Small Island Developing States (SIDS), considering their geographical and economic contexts, which render them highly susceptible to climate change impacts. Subsequently, the focus shifts towards analysing the specific effects of climate change on the tourism sector in SIDS, with a particular emphasis on the Maldives, Mauritius, and India as the study areas.The study further investigates the major adaptation strategies implemented in both the Maldives and Mauritius, aiming to mitigate the adverse impacts of climate change on their tourism sectors. Additionally, it explores potential strategies that could be adopted in India to address similar challenges in its coastal regions.

**Climate Change Impacts on Tourism Industry In Small Islands Developing States (SIDS)**

The Small Island Developing States (SIDS) consists of 58 small islands from all over the world in three geographical divisions: the Caribbean, Pacific and Atlantic, Indian Ocean, Mediterranean and South China Seas (AIMS). The natural locations of these islands, surrounded by oceans, unique biodiversity, cultural richness, pleasant weather, and blue and greenish beauty, are the perfect ingredients to attract tourists from all over the world (World Health Organization, 2017) [31]. Tourism is the main economic sector in Small Islands Developing States mainly due to its natural beauty. Moreover, the smaller geographical size of these economies has not provided many other livelihood options that are available to larger economies. Thus, the Governments of SIDS encourage tourism which is the major contributor to their GDP. As a result, the numbers of visitors' arrivals in these destinations are higher than the number of inhabitants of SIDS. In some island nations tourism contributes a major portion in employment generation, especially in the Bahamas, the tourism industry contributes 70% of its total employment opportunities (Nurse *et al*., 2001) [19]. The tourism industry contributes to the nation's GDP, job creation, and local economic prosperity and is a good source of foreign exchange earner. Thus, the economy of SIDS highly depends upon the tourism industry and depends on natural climate and location, which is highly vulnerable to climate change.

From the past few decades, the SIDS is threatened by fragile environment, and several unique environmental issues especially due to sea-level rise and coastal zone hazards as a result of global warming. In most destinations, more than 95% of the land is situated between 0-5 meters above sea-level (World Health Organization, 2017) [31]. The changes in sea-level rise will bring danger in various aspects of development of the small islands, as most low-lying nations may be washed-off by coastal environmental events due to increased sea level and other coastal hazards. According to the estimation, 33% of plants and 23% of bird species are under threat because of an unfavourable shift in biotic forms due to climate change. In addition, SIDS is also facing acute water shortage and food security problems. Most of the islands depend on rainwater due to limited freshwater sources and the land for agriculture purposes is undergoing the threats of soil salinization as well land loss due to rise in level of sea water. The unique cultural attractions, such as places of worship, rituals, and ceremony are also under threat due to rise in sea-level (Nurse *et al*., 2001) [19].

The SIDS were recognized at the United Nations Conference on Environment and Development held in Rio in 1992, for the environment and development. The Programme for the Action on Sustainable Development of Barbados in 1994, SIDS was mentioned as vulnerable to global climate change. It has been discussed that the SIDS's climate is greatly influenced by the ocean-atmosphere and any change in sea level will destroy the human settlement, coastal zones and the economy of the destinations.

**Challenges of Climate Change in Maldives And Mauritius-**

The two most tourism dependant destinations chosen for the study are the Maldives and Mauritius among the SIDS as these two nations are heavily vulnerable to climate change especially due to sea-level rise.

The Maldives, one of the lowest-lying Small Island nation located in Arabian Sea of Indian Ocean with the total numbers of 1192 small islands covering 298 square kilometres, which lies in the south-east of Sri-Lanka and India. It is one of the lowest-lying island nation which is just 5.1 meters above the sea-level. Among the 1192 small islands, only 192 islands are inhabitant with 3,80,000 population. The economy of Maldives's heavily dependent on tourism industry (Arnall & Kothari, 2015) [2]. In 2013, the reports of the World Travel and Tourism Council reveals that 78% of Maldives' GPD is generated from the tourism sector (Stauvermann & Kumar, 2016) [26]. From the few decades, the policymakers and the people of Maldives are worried due to the alarming danger of raising sea-level because of global warming.

The climate change impacts in the Maldives has attracted international attention as the large land area of the destination would submerge with a small increase in the level of sea water. This may cause the migration of large numbers of Maldivians from their homeland (Arnall & Kothari, 2015) [2]. According to IPCC 2007 reports, if there is a failure to take planetary actions against the increasing level of sea, many small islands nations like the Maldives will become uninhabitable, as most of these islands are just 2 meters above from the sea-level (Eric Hirsch, 2015) [7].

Because of low-lying Coastal areas, Maldives is under the climate change threat and it became a matter of existence of life in the nation. As per the former Maldivian president Mr. Mohamed Nasheed, "the climate is changing and the sea-level is rising. The science is clear, we cannot negotiate with the law of physics. We are not prepared to die. We are not going to become the first victims of the climate crisis. Instead, we are going to do everything in our power to keep our heads above water" (Jaschik, 2014).

As the Maldives is the flattest country of the world, no settlement is safe and it is highly vulnerable to rising sea-level. Nearly 85% of the land in Maldives will be underwater by 2100, as per projected sea-level rising rate. The survival of Maldivians is under threat even in the short-run due to the risk encountered by the tourism industry which is the major source of their livelihood. Under the adaptation program in the Maldives, Integrating Climate Change Risks (ICCR), has categorized two kinds of measures- hard and soft measures. Soft measures are long term environmentally adaptations rather than the hard measures but the Maldivians are not actually bothering about long term climate impacts, they want to implement the hard measures as they will provide employment opportunities. The lack of awareness regarding the serious impacts of climate change among Maldivians and tour operators as well and lack of coordination among Government authorities, are another challenges in the case of climate change (Sovacool, 2012) [25]. Along with the challenges of sea-level rising, Maldives faces the economic and financial difficulties as it overwhelmingly depends on imports of petroleum from other countries. Thus, the islands of Maldives also contribute to greenhouse gas emissions by consuming fossil fuels (Van Alphen *et al*., 2007) [30]

Mauritius is a famous and beautiful small island tourist destination like the Maldives, it is also located in the Indian Ocean (Essays, 2018). Mauritius with a group of small islands spreads in South-West of Indian Ocean with 2040 square kilometres of total land area which is surrounded by coral reefs, the major attraction of tourists. It is the home of the worlds' extraordinary plants and animals but human habitation and their developmental activities keeps on threatens the indigenous flora and fauna of the land (Lalljee *et al*., 2018) [15]. The nation is highly relying on the tourism industry for its survival. The tourism sector not only creates employment opportunity for the local youths but also a major contributor to the nation's GDP and foreign exchange reserves. But the sector is extremely vulnerable to climate change due to rising level of sea level as it is surrounded by ocean and the other factors of climate change cause physical as well as an economic loss -to Mauritius (UNDP, 2012) [29].

Climate change has become a sad reality not only for Mauritius but also for the entire world. It was said that Mauritius is the country that is best prepared for the cyclone, but the flood (April 16, 2013' report) due to climate change has put a question mark on the readiness to face natural calamities. It is expected that the island nation is going to suffer due to huge rainfall, landslide, floods, and cyclone in the coming future as the result of climate change. Mauritius is not still prepared to face the challenges of climate change as the nation has a lack of a proper drainage system to carry the excess rainwater into the sea (Ackbarally, 2013) [1].

The tourism industry functions as the main foundation for the economy of Mauritius. In 2011, tourists' receipts were 41 billion as per the Bank of Mauritius. Climate change impacts have become a matter of concern for Mauritians. The climatic conditions of the southwest Indian Ocean's (SWIO) small islands such as Mauritius, is influenced by a large oceanic atmosphere. Annually, a 5.6 mm rise in the sea level causes the disappearance of many sea-shorelines and deteriorate the coral reefs which will reduce the tourism revenues approximately around $50 million a year by 2050 (Houlder & Cotterill, 2017) [11]. The island that is encircled by coral reefs is threatened by coastal hazards, such as coastal erosion, waves overtopping, floods due to increase in sea-level challenges tourism as well as other developmental activities in coastal areas (Onaka *et al*., 2015) [20]. Moreover, the other effects of global warming namely, coral bleaching, rising surface temperature, drought, flash flood, tropical storms, heavy rainfall have severely affected biodiversity in Mauritius (Gray & Lalljee, 2012) [10]. The Indian Ocean is highly susceptible to climate change and along with Mauritius, other small island nations are the victims of climate change. Expansion of oceanic water due to global warming not only affects tourism but also causes a decline in fish catch which adversely impacts the livelihood of the local residents and the overall economy of the destination (Lalljee *et al*., 2018) [15].

## Adaptation Strategies to Mitigate Climate Change Impacts in Maldives and Mauritius

### The Maldives

It is very difficult to influence people to adapt the concept of climate change and stand against it who believe that climate change is an act of God, so they trust that he will take care of them. A research paper of Alex and Uma Kothari had found that religious believers of some islanders of Maldives have become a major concern to influence the local residents for active participation against the climate change impacts. The Maldivians are more interested about the present situation than the future, even they do not bother about climate changes or its impacts. Especially, older people do not want to leave the place as they believe that if they go against religion, nature will punish them whereas some youngsters believe that it is a good opportunity to live a better life somewhere else. It is very difficult to consider migration as an adaptation strategy to overcome the sea-level rise. Though a sizable number of Maldivians are aware about the long-term issues of climatic change, especially the rising sea-levels through NGO- based personal initiatives and UNICEF-sponsored climate change awareness programs, the local residents are neither interested to listen to them nor taken any action to combat the climate change issues (Arnall & Kothari, 2015) [2]. Because many Maldivians strongly believe that nobody can do anything with climate change and it is difficult to protect the Maldives from submerging. So, they are preparing themselves to relocate to another place, it can be the artificial islands or any other nation such as India, Sri Lanka, Australia, etc. They are more concerned about the

development and day-to-day survival issues rather than the long-term challenges of climate change impacts. However, a small group of volunteers is working to communicate the Maldivians regarding the extreme and severe climate change impacts and engaged in various conservation activities to protect the environment (Eric Hirsch, 2015) [7].

As per the former Maldivian president Mr. Mohamed Nasheed's word, if we cannot save Maldives today, we cannot save the world tomorrow. The Maldives is more concerned about the importance of mitigation and adaptation measures, it has declared that the country will achieve carbon-neutrality by 2020, in the year of 2009. It also insists the industrialized nations to fulfill their responsibilities through funding and sharing of technologies to SIDS to fight against global warming. Apart from mitigation and adaptation, the re-allocation of the settlement is the third option for the Maldives in the long-term. Maldives along with another small island nation Tuvalu (which had dared to challenge the most powerful nation the US for not ratifying Kyoto Protocol even though being the major contributor of GHGs emission, in 2002), are managing to gain international attention through different NGOs and media to face the challenges of climate change. Being optimistic, Maldives sees opportunities for going green economy to cut emissions (Jaschik, 2014) [14].

The Maldivian government has initiated a four-year $9.3 million Project supported by United Nations Development Program, Global Environment Facility, and Maldivian Government, called 'Integrating Climate Change Risks (ICCR) into Resilient Islands Planning in the Maldives'. ICCR's adaptation measures are divided into two: soft measures such as mangroves plantation, beach alimentation, arrangement for collection of rainwater, thickening or dense coastal ecosystem, dune refilling, coral extension around existing islands and the hard adaptation measures such as constructions of seawalls, desalinate of water, raise of water tanks and storage system, land reformation and building of artificial or designer islands. ICCR also provides training programs to Government stakeholders as well as demonstrating funding projects to prepare the islands to face the challenges of climate change issues (Sovacool, 2012) [25]. Furthermore, the government of Maldives has committed for adaptation and implementation of policies on Renewable Energy Technologies (RET) to promote sustainable energy to overcome the economic difficulties though the adaptation costs are quite high. The Maldives is highly fortunate with huge renewable sources of energies for example solar and wind. This initiation of the Maldives will certainly contribute towards mitigation actions to climate change (Van Alphen *et al*., 2007) [30].

However, The Maldives is facing challenges to implement adaptation measures such as pumping of sands and desalinization of water for drinking purposes as they require huge consumption of electricity which hamper the target of becoming 'carbon neutral' by 2020. (Shakeela & Becken, 2015) [24].

**Mauritius**

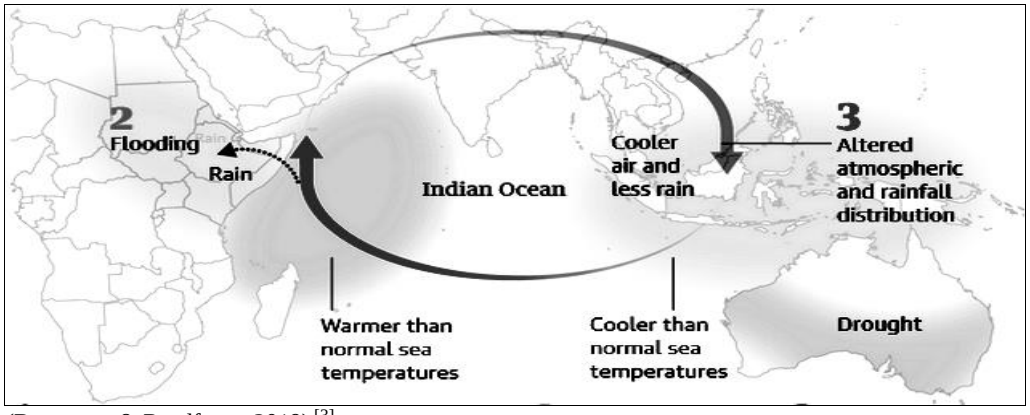
Similar to Maldives, Mauritius is also vulnerable to climate change therefore immediate actions are required to be taken against it (UNDP, 2012) [29]. Mauritius environmental ministry is ready to tackle the challenges of climate change impacts for example beach erosion and coastal roads by using boulders and sea-walls to create barriers for shoreline erosion and further protection from ocean level rising. The government is doing its level best to boost the island's environmental resiliencies to challenge the ill-effects of climate change. It has developed various infrastructure processes for withstanding natural disaster and to save the lives in highly vulnerable areas, early warning signals with improved evacuation capacity has been developed to provide information before the happening of any oceanic events. Numerous other climate activities have also been undertaken by Mauritius to monitor sea-level rising and any oceanic events such as establishing network of automatic weather stations, induction of new tide gauge to monitor rise in sea level, etc. Moreover, the nation is taking all necessary action to cut its carbon footprint. In 2015, Mauritius was one of the nations that ratified the Paris Agreement and has intended to reduce the levels of carbon emissions by 30% by 2030 using solar, wave and wind energy. Mauritius' carbon emission is very minimal, it contributes only 0.01% of the total global emissions, so the nation is taking efforts. Mr. Sinatambou, a specialist in Environmental Law says, " For Mauritius, the solution is an adaptation not mitigation" to curb the emission (Houlder & Cotterill, 2017) [11].

Under Sustainable Development Goals, it has formulated a coastal conservation plan and capacity programs to tackle the challenges of climate change. The adaptation strategies such as, public awareness for sustainable coastal conservation and maintaining the good coastal environment, coastal protection and habitation countermeasures are taken by the project managers in coastal zones (Onaka *et al*., 2015). [20] Along with the government, the private sector too becoming aware of the extreme danger outcomes of climate change and affords to take measures to mitigate greenhouse gas emissions through new developmental strategies (Mauritius Meteorological Services, 2020a) [16].

Along with the industrialized nations, a coordinated formulation of adaptation strategy is demanded by Mauritius to face global issues. The government of Mauritius has started taking the initiation of adaptation and mitigation measures. The establishment of an institutional framework has taken to tackle climate change issues (Gray & Lalljee, 2012) [10]. In addition, Mauritius has started various policy initiations and several adaptation strategies such as developing framework for climate change and mitigation, coordinating different sea-level and climate-related projects, implementation of climate change monitoring programs, conducting research and development on sea-level and climate change, awareness creation programs to protect and prevent the biodiversity from the climate change impacts (Lalljee *et al*., 2018) [15].

**Discussions**

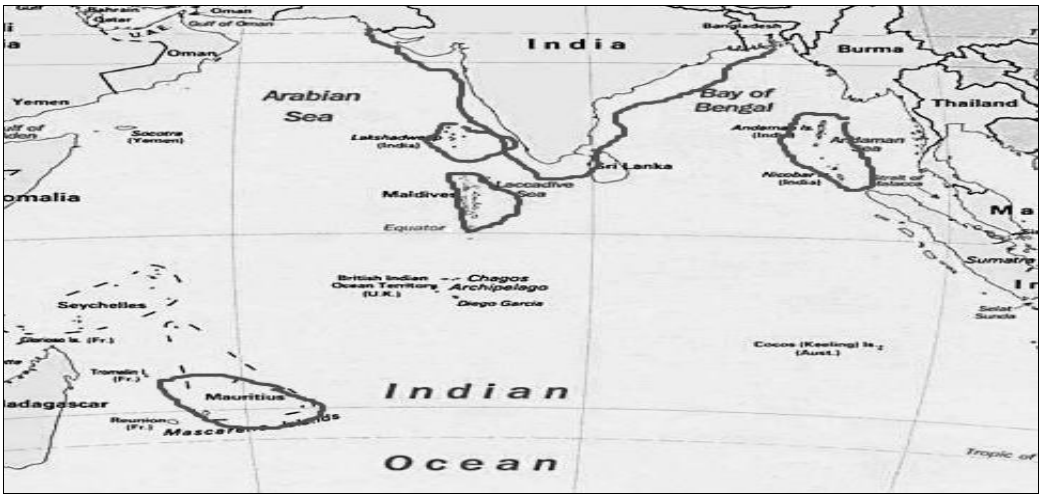
Global warming has altered the climate of the whole world. The rising temperature of the world warms the western portion of the Indian Ocean than the eastern portion and that causes changes in atmospheric and rainfall distribution. The warmer and moist air leads rainfall that causes extreme flooding in Africa and the less warm air flows to the eastern Indian Ocean with dry air causes less rain and dry climate in Australia. The most recent example is Australia's bushfire disaster and floods of Africa in 2019 (Beaumont & Readfearn, 2019) [3]. The geographical location of the coastal zones and many islands of India is situated both in Arabian Sea and Bay of Bengal. Hence, these coastal zones and islands will suffer from warmer as well as cooler sea temperature due to Indian Oceanic changes caused by global warming.




(Beaumont & Readfearn, 2019) [3]

The impact of this air circulation due to the warming climate not only directly affected SIDS but the coastal zones and islands of India as well along with some parts of the mainland of India.

India has a total mainland coastline of around 6100 km out of 7516.6 km total coastline and rests 1197 km is island coastline (Free Press Journal, 2018) [19]. From the Gulf of Kutch, the westernmost corner stretch until the easternmost corner of Sunderbans through many pristine beaches, springs, aquatic resources and beautiful seas like Arabian and Bay of Bengal in the Indian Ocean, provides various destinations for tourism (PMF IAS, 2016) [20].




The coastline goes through nine states and four union territories. In the fertile land of the(Source: *Indian ocean, Maldives, Mauritius, Lakshadweep Andaman and Indian coastal zones map—Google Search*, n.d.)

Coastline of the mainland as well as islands different crops are grown and fishing is the major occupation for the people living on the coastline of India. In India, nearly 700 million rural population depends on the sectors those are extremely vulnerable to climate change for their survival of lives. According to the National Communication Reports of India to the UNCCC, climate change has impacted the socio-economic strata as well as the natural ecosystem of India (CDM report India). Besides, tourism is the fastest growing industry in India especially in islands and in many coastal areas. Thus, the economy of coastal zones and islands depends on the oceanic atmosphere, which is sensitive to climate change. The melting ice sheets and glaciers due to rising global temperature- that causes increase in sea-level is the main threat to the coastal zones and islands of India. Other coastal hazards such as heavy floods, strong cyclones, tsunami, heat waves, drier climate, shortfall of rain, coastal erosions, coral bleaching damages agriculture and fishing along with the tourism sector which heavily relies on climate. Especially, Tourism is disrupted due to loss of beaches, coastal inundation, salinization of land and water, degradation of biodiversity and ecosystem and coral bleaching (Lalljee *et al*., 2018) [15].

The climate change impacts in the coastal areas and islands of India is almost similar to that of Maldives and Mauritius. For example, the mentioned areas have experienced the disasters of Tsunami on 26 December 2004. The Indian Ocean island nations have lost millions of lives and huge economic damage during Tsunami, around 2,25,000 people were killed across Indonesia, Sri Lanka, India, Maldives, and Thailand. In India and Srilanka, nearly tens of thousands of peoples were lost lives and missing, the large numbers were from Andaman and Nicobar Islands. An island from Nicobar islands, Megapode island completely was submerged and nearly 97% of mangroves had destroyed due to strong waves (Sahana ghosh, 2018) [23]. More than one hundred cases and huge economic damages had recorded in the Maldives and small islands of the Indian Ocean (The Editors of Encyclopaedia Britannica, 2020) [27]. A village of the north of Mauritius had completely submerged due to high and extreme strong waves of tsunami and a huge amount of economic damage has reported (Ramalanjaona, 2011) [22].

India is facing twin-burden - climate change issues as well the pressure for economic development. The most priority of India today is economic development and poverty

alleviation and attaining these goals will increase the demand of energy usage which will cause greenhouse gas emissions. On the other side, there are international pressure to take initiatives for mitigating the climate change impacts. In reality, there is great mismatch between trade policy and environment policy. The world leaders need to understand and find out the solutions from the roots of the problem. Understanding the seriousness of climate change impacts the Government of India has set up council to coordinate and assess national action plan for adaptation and mitigation of climate changes. Numbers of measures has taken under National Action Plan for Climate Change. The target of National Solar Mission by the end of 2020 to provide 20,000 MW of solar power. Providing Community based disaster management, capacity building, energy efficiency building, waste management systems are aimed by National Mission for Sustainable Habitat. Establishment of various water conservation measures are targeted by National Water Mission. National Mission on Strategic Knowledge for Climate Change active on research and development to assess vulnerabilities and climate change responses. Climate action plans more stressed on adaptation than the mitigation strategies (Development Alternatives, 2011) [16].

The study of climate change impacts in Maldives and Mauritius and the adaptation strategies to tackle the challenges of environmental issues will help India and the other SIDS in the Indian Ocean. Keep in mind the physical and climatic features of islands and coastal areas, India can adapt some efficient adaptation measures those are implemented in Maldives and Mauritius. Among them, re-locate the population from vulnerable areas to upper lands, desalination of water to face the drinking water scarcity due to sea level rising, constructions of sea-walls along with coastal roads and planting mangroves ecosystem to avoid sea-flooding. Moreover, establishing strict institutional set up to implement projects related to climate change, regularly monitor them, educating people to take participation in the war of protecting the nature. India is having large coastal areas and islands, those are vulnerable to climate change impacts, so it's good to learn the lessons from the other nation facing similar kinds of challenges, to face the challenges in a better way.

## Conclusion

The study highlights the significant impact of the Indian Ocean on India's coastal areas and islands. The rising sea level similarly affects India to that of the Maldives and Mauritius. The research reveals that the governments of both the Maldives and Mauritius have primarily focused on implementing adaptation strategies rather than mitigation measures, considering their minimal contribution to climate change. These nations actively participate in international summits to raise global awareness and seek financial support from developed nations, which bear the greatest responsibility for global warming, in order to address the challenges posed by climate change.

In contrast, India emphasizes mitigation strategies more, recognizing its substantial contribution to climate change. The study suggests that India should also incorporate adaptation strategies into its climate change initiatives, taking inspiration from the approaches adopted by the Maldives and Mauritius. These strategies may include the construction of sea walls in coastal areas, the planting of mangroves to enhance coastal vegetation, the implementation of freshwater catchment systems, and the promotion of awareness programs. By considering these adaptation measures, India can effectively respond to the climate change impacts experienced by the destinations above.

The study on the effects of climate change impacts and adaptation measures implemented in countries like the Maldives and Mauritius can serve as valuable guidance for India in addressing similar climate change issues resulting from global warming. By understanding and learning from the experiences of these nations, India can enhance its own strategies and efforts to combat climate change. Protecting these countries from the adverse impacts of climate change benefits them and contributes to the overall goal of safeguarding India and other destinations from such challenges.

Climate change is a global issue that requires a unified and coordinated response. Powerful industrialized nations and small nations must work together to address the challenges of climate change. Strong collaboration and cooperation among countries of all sizes are essential to combat climate change and mitigate its impacts effectively. By joining forces and sharing knowledge, resources, and best practices, nations can collectively tackle this global challenge and work towards a sustainable future for all.

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