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CHALLENGES, OPPORTUNITIES AND EARLY WARNINGS: A CURRENT TRENDS AND AGENDA FOR SUSTAINABLE DEVELOPMENT IN PACIFIC ISLAND COUNTRIES

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Abstract: **— The Pacific Island Countries (PIC) are isolated lands in the Pacific Ocean. Due to the remoteness of their nature and their scatteredness in the ocean, these countries face a distinctive set of challenges but, in hindsight, have a unique opportunity. Each country is combating to achieve a sustainable approach in the economy, society, policy and governance, such as net zero-emission, zero waste, zero harm, vision zero and many more to save lives and the earth. Moreover, political aggression, climate change, environmental degradation, sea level rise, natural disasters and many more factors warrant early warning for the PIC community. The study was conducted through a literature review and brought up around twenty-two aspects of shared concerns from island countries. It is revealed that due to remoteness and limited resources and expertise, their economy and infrastructure depend on China, Australia, and New Zealand. The statistics show that PIC received funding from 14 world banks to improve their transportation system; perhaps there is no remarkable improvement. The study finds that the Pacific should not be a focus of the Belt and Road initiative; they must improve their communication with Beijing to create an improved road transport network and leverage their prioritised industries to advance the Sustainable Development Goals (SDGs). The closing discussion will help enrich PIC's emerging background through a context-sensitive review of various aspects. It will provide an important overview of various paths and issues already in place requiring attention to address the challenges and warnings. The closing discussion will also offer some potential tonics for PIC's Environmental, Social, and Political impact and assist in mitigating early warnings in shaping their future, enhancing opportunities and providing avenues for economic growth by summarising the highlighted factors carefully. The study concludes that several potential local and international factors contribute to the economic downfall of PICs; therefore, various short-term and long-term measures and early warnings are required for sustainability and robust economic recovery.**

***Keywords*:** Pacific Island Countries, Social Safety, Road Safety, Emissions, Climate change.

I. INTRODUCTION

Most of the 9 million Pacific Island countries (PICs) inhabitants depend mostly on fishing and agriculture [74]. Social safety and security are lacking here but are a prerequisite to promoting economic progress, eliminating poverty, and strengthening social stability in the region. Inadequate housing quality, population increase, a lack of legal rights, and inadequate infrastructure are obstacles to urbanisation and financial assistance in the region. Sanitation and toilet facilitation should be given focus, water quality and supply should be enhanced, and urban infrastructure and basic services should be improved [74]. Natural disasters significantly impact transportation and mobility, increase population and political developments in the Pacific region, and accessibility barriers and obstacles must be identified and removed [74]. Fossil fuel imports are important to the Pacific region, as it relies heavily on carbon-based fuels. To lower these emissions, PICs should employ less fossil fuels and lean more towards sources of clean energy. This region is susceptible to the impacts of climate change and natural phenomena, which can cause damage to pavements, motorways, bridges, and roads and widespread destruction. To guarantee road safety, governments in the region should pay a significant emphasis on enhancing road safety, but the essential downside in this context is that natural disasters cause considerable loss and harm to the region's economic growth and that the PICs need to develop external aid to support economic growth and defend against natural disasters [74].

The Chinese government has presented the "21st-Century Maritime Silk Road and the Silk Road Economic Belt," which has garnered strong diplomatic backing. To fully benefit, PICs must overcome two key barriers: the project is still in its infancy, and the Pacific is not a focus of the Belt and Road initiative, and they must improve their communication with Beijing to create an improved road transport network and leverage their prioritised industries to advance the Sustainable Development Goals (SDGs). Socioeconomic growth and essential government services are required to encourage sustainable domestic shipping [96]. Agriculture and tourism are related, and the Solomon Islands attract a large number of Australian and New Zealand tourists.

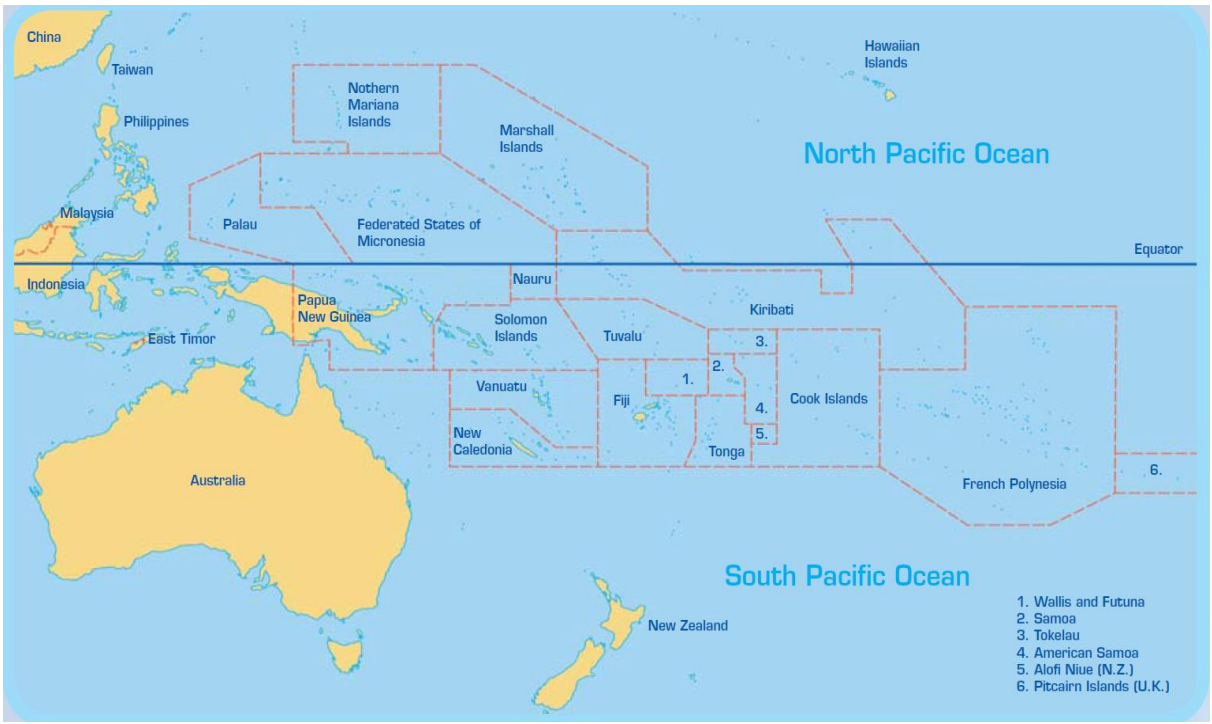

Figure 1: Map of Pacific Island countries (PICs), Source: Bijay, Boodhan, and Chmutina [12]

Tourism contributes to the Sustainable Development Goals and the Decent Employment and Economic Growth objective. Moreover, hotels and resorts have an impact on tourism and private investment; a developed transit system, enough activities, and infrastructure may enhance tourist potential. The air transport system must be upgraded and made more affordable, and the safety and security of tourism destinations must be enhanced [74]. The study illustrated various critical aspects of these countries that are currently influencing their economy as well as a potential barrier on their way forward. The following figure illustrates the location of Pacific Island countries (PICs).

01 Social and Cultural

About 828 million people live in slums worldwide, especially in the global south. 33% of the slums are located in urban areas [3]. About 9 million people from 14 nations live in the Pacific island countries [61]. Most PIC (Pacific Island Countries) residents work at tuna cannery factories. The salary is as well as the national standards, but the national averages for pay are not so high, even though sometimes it is insufficient. In PNG (Papua New Guinea) and the Solomon Islands, some cannery workers get to take home a pay of less than $2 per day [6].

The UN (United Nations) World Economic and Social Survey, 2013 has reported that promoting economic and social well-being to protect the environment has not been achieved. Therefore, it has been indicated that rising inequality, rapid population growth, shortfalls and gaps in development partnerships, climate change, and environmental damages are contributing factors [3]. Over the last 30 years, the South Pacific nations have invested considerably in conserving resources. But the results are insufficient.

This failure is due to economic, social and cultural inequality in land ownership [61]. Pacific countries are democratic, and ordinary people elect politicians [53]. The populace is diverse and multicultural in nature [53]. In 7 of 15 Pacific island states, about 40% of inhabitants live in urban areas [45]. Western countries facilitate access to processed food, affecting Pacific trade. As a result, about 35% of New Caledonian teenagers, mostly aged 11 to 16, are obese [101]. Social protection and security are also crucial for every country. It is one of the primary issues to improve social and human development and reduce vulnerability and risks [79]. It enhances economic growth through rising labour productivity and increasing social stability. It decreases poverty in the country [79]. Social protection in PICs (Pacific Island Countries) is mainly traditional, informal and non-state-based. The state-led social security is restricted [79].

02 Climate Change

The Pacific Island Countries (PICs) are at threat of climate change (CC) as they are situated in the most-hazard-prone area in the world [49]. The Pacific islands are at significant risk of climate change [21]. PICs would be in severe problems because of climate change. It is also causing a significant threat to their society, culture and economy. If the temperature continues to increase, it will cause irreparable damage to coral reefs and the overflow of large areas by raising the sea level [54]. A large number of people in PICs live in rural areas. Their economic, social and financial condition is not so good. They are highly dependent on agriculture. These make PICs more sensitive to disasters related to climate change [20]. It has been predicted that global emissions of greenhouse gases will continue to increase during the next few decades, though some countries have adopted mitigation policies and sustainable development practices [54]. Scientific uncertainty creates barriers to planning for climate change and rising sea levels in PICs [21]. Environmental vulnerabilities call for building flexibility and mitigation capacity to the effects of climate change [14]. Policymakers are trying to make decisions to face these uncertainties. Uncertainty refers to imperfect knowledge about an event's timing, probability, location and magnitude [21].

Although CC affects PIC's land, livelihoods, agriculture, fisheries and tourism, they have contributed little to solving this problem. Many of these islands' geographical locations and limited human capital afford them little agency [25]. A comprehensive and reliable national-scale vulnerability assessment will be extremely difficult, although efforts should still be made [7]. Planning for predicting CC impacts should be begun instantly. Adaption policy should be undertaken. However, uncertainty can hamper its efficacy and resource availability [21]. Recently developed theories and practices trend toward resilience and adaption in PICs [7].

03 Safety and security

The Pacific island countries are currently very concerned about their lands' security, means of subsistence, food supply, and citizens [19]. The safety of urban habitation, the health of the islanders, and their ability to maintain sustainable development are all threatened by increased floods, sea level rise, and climate change, which also impacts water security in PICs (Pacific Island Countries) [25]. Hence, upgrading local emergency plans or collecting rainwater can increase the Pacific region's water security [16].

In Pacific countries, urbanisation is causing a rise in social and biophysical vulnerabilities, impacting human security [80]. As a side effect of urbanisation, water and air pollution seriously threaten people's health and safety in cities, particularly at the family and community levels [55]. It was shown that unfavourable driver behaviour negatively affects the urban environment, passenger security and comfort (Asia and America 2004, 18). Urban communities in the Pacific are very concerned about the security and safety of people [80]. The Sustainable Development Goals (SDG) offer a chance to combine and improve upon established ideas of development and security in the Pacific region [110].

The traditional support systems that serve to maintain food security are also being weakened by increased urbanisation [77]. As a result, the loss of food security affects social and economic growth, making it more difficult for PICs to achieve sustainable development [25]. Food security significantly impacts those nations since it is considered a foundational element of many traditional Pacific Island communities, both inland and coastal [19]. Food security refers to ensuring that everyone, at all times, has access to the food they require for a healthy and active life [52]. Because of this, the national food security systems' long-term viability is currently of the utmost importance [105]. By planting a variety of crops, food security can be increased. Also, the production of some traditional crops is necessary, which can be kept fresh for months by fermentation or proper storing [111].

04 Emission

An essential component of inclusive growth is the environment; however, occasionally, the environment may be in danger due to transportation [104]. A quarter of emission comes from the transport sector globally [90]. Since carbon dioxide and other harmful gases are emitted from the Transportation system [104], it is found that transportation produced 23% of all energy-related CO2 emissions in 2010 [84]. Today, the global's more prominent and wealthier nations' combined GHG (greenhouse gas) emissions are the primary driver of climate change [111]. Energy usage and garbage production are related to climate change. Energy consumption is proportionate to development, which raises GHG emissions and causes climate change, like global temperature rise [81]. Global GHG emissions are mostly and constantly rising from the shipping industry. The shipping emissions rate is between 10% and 15% for nitrous oxide (NOx) and 4% to 9% for sulphur oxide (SOx), respectively [85]. However, technological innovation has been greatly influenced over the last ten years by global worries about peak oil and greenhouse gas emissions [91]. Rising sea levels are a possible result of GHG emissions. If global CO2 emissions are not reduced and the sea level rises, the sea level might rise up to 92 cm by the end of the century [111]. A recent study found that before 1995, greenhouse gas emissions caused a 5–12 cm rise in sea level and that if all greenhouse gas emissions stopped after 2020, the rise in sea level would still probably be 14–32 cm [7].

Although the Pacific Islands only transport 4% of global cargo, they are responsible for an astounding 26% of all maritime emissions [91]. The PICs (Pacific Island countries) rely significantly on imported oil [81]. Because the majority of their imported fossil fuels are used for energy, these are the Source of their GHG emissions [9]. PICs have enormous potential for developing NRE (New Renewal Energy) sources and green energy [81]. Pacific Island nations should try to utilise fewer fossil fuels, especially by using more renewable energy sources. They will also cut down on CO2 emissions by doing this. Nevertheless, the PICs represent less than 0.3% of the world's GHG emissions. These initiatives won't significantly reduce climate change [111]. However, the International Maritime Organisation's (IMO) initiatives to lower shipping emissions and use cleaner fuels have started to gain momentum [91].

05 Urbanisation

Urbanisation refers to the transformation from a pre-eminently rural society to a pre-eminently urban society [80]. In developing countries, whose population is low, are unaware of urbanisation [21]. But, urbanisation in Pacific countries is growing rapidly. Once 25% of the PIC (Pacific Island Country) population lives in urban areas. It was 35% in 1993. And it is expected that the urban population will be 50% by 2050 [80].

Urbanisation has a positive effect on road energy use and national transport. It affects social, economic, and ecological transformation. Urbanisation increases transport energy demand and encourages motorisation [90]. Urbanisation affects population growth negatively; it decreases pressure on natural resources and land by controlling the birth rate [55]. Urbanisation causes internal migration. People move from one region to another in search of a better lifestyle, health services, employment and educational facilities [80]. The migration facilitates not only the migrants with better living standards but also the destination area's development by providing labour at a low cost [41].

Urbanisation has not only positive effects but also negative impacts. It causes environmental pollution. It increases waste at landfills, which in turn pollutes groundwater [55]. Environmental pollution threatens human health, especially women and children [55]. Geographically, PIC is a highly hazardous area in itself [63]. Further, environmental pollution raises flood and erosion risks. It creates problems in solid waste management [63]. It enhances traffic congestion also [55]. Although people are trending toward urban areas to get better jobs and services, sometimes it increases slums, unemployment, and crime rates [57].

Poor quality housing, population growth, lack of formal tenure rights and improper infrastructure are challenges for urbanisation to tackle the problems, and financial support is required [9]. Two consequences of urbanisation are urgent fulfilment of development needs and enhanced social and environmental turmoil [63]. Recycling of wastes should be implemented [55]. Sanitation and toilet facilitation should be given attention. Water quality and supply improvement need to be ensured [63]. Infrastructural arrangements and essential urban services should be improved [63].

06 Education

Education is the process that converts the population into the workforce. It is one of the fundamental requirements to gain development goals. PIC's (Pacific Island Country) educational outcomes are unsatisfactory, even if the national government and donor agencies have invested significantly [89].

In Asia and Pacific countries, about 650 million people have a disability, which is estimated as a burden and insignificant to society. But education can make them acceptable to the community. Less than 10% of disabled people have access to an education framework [102]. To promote disabled people's access to various facilities, including education, classrooms and labs, Australian aid is required to finance school resources, as the government can only provide basic needs [114]. Australian aid provides the 'Development for All 2015-2020 Strategy', which supports people with disabilities ([114]).

Economists have indicated education as a critical component of national development, So the government's direct involvement is needed. Government involvement is hampered by the lack of financial resources [4].

PIN's (Pacific Island Nation) education system is not democratic. To make PIC's education system sustainable, the curriculum should be culturally democratic within the 21st century. It will establish a link between schooling and people's communication skills [107]. English is a foreign language in some Pacific countries like PNG, Solomon Island, Vanuatu, etc. English usage in schooling creates barriers for some students to gain a higher degree. Code-switching between English and the local language can solve this problem. So, it needs to be implemented as a second language [107].

Nowadays, the world needs student's performance development. For this purpose, teachers' motivation, attendance, principal supervision, etc., need attention [70]. Education is not driven by migration but drives migration [41]. Migration refers to seasonal movement from one area to another. It helps to promote both destination countries' development by providing high diversity with low labour costs and migrants' living standards [41].

07 Infrastructure (Civil Infrastructure)

Infrastructure means the basic physical or organisational form of society. The Pacific countries are small in size with a considerable population. Their economic growth is not so good. That has made PIC (Pacific Island Countries) the most vulnerable countries [15]. Pacific air transport and domestic infrastructure require more investment [46]. The AusAID (Australian Agency for International Development) targeted to grow PIC's economic condition. Promoting infrastructure and trade are two fundamental policies for achieving the targets [46].

Asian Pacific countries' (PIC) infrastructure investment has been substantial in recent decades. But except for the railway, the region is slow in railway development (Asia and America 2004, 1). Asia Pacific region invests $126 billion annually to improve infrastructure, which is 0.4% of the total GDP(Gross Domestic Product). But it's not sufficient. It requires 1.3% of the total GDP(almost $443 billion) (Asia and America 2004, 2). Asian Pacific region needs to invest around USD 700 billion to USD 800 billion to develop its infrastructure [13]. Pacific Island's infrastructure shows adverse consequences due to a lack of proper maintenance [28]. The PRIF(Pacific Region Infrastructure Facility), supported by many other organisations, was established in 2008 to improve Pacific infrastructure. It has divided infrastructure funds into five sectors. These are 'power', 'transport', 'water and sanitation', telecommunication' and 'urban development' [32]. The ADB (Asian Development Bank) suggested that 51% (almost 4.1 trillion) share of infrastructure fund for 'the power sector' and 31% (nearly 2.5 trillion) for 'the transport sector' should be invested [13]. The AIIB (Asian Infrastructure Investment Bank) was created to promote infrastructure. It has organised some new infrastructure funding from the public sector, attracting the private sector for infrastructure financing [13].

Public Private Partnership (PPP) can improve infrastructure financing [32].

The PIC has examined various regional, national, and international modalities. They understood that not all modalities are suitable for every country and environment [32]. Climate Change is causing environmental damages such as unforeseen weather patterns, natural disasters, rising sea levels, etc., and It also affects SIDS's (Small Island Development States) abilities [15]. They must implement a flexible infrastructure for adapting to climate change [32].

08 Renewable Energy (Green Energy)

Energy supply is one of the fundamental needs to raise a country's living standards. A country's every sector, like transport, education, water supply, health, production, etc., depends on energy supply. About 1.6 billion people suffer from a lack of electricity [113].

Pacific island countries highly depend on imported fossil fuels for their required energy [113]. It is responsible for 8-37% of total imports, which hampers the Pacific Island's economy. Due to limited financial resources, the PIC (Pacific Island Countries) cannot import sufficient fuel. That's why they can't supply electricity adequately to the rural areas [113]. To overcome this problem, SIDS (Small Island Developing States) targeted renewable energy instead of fossil fuels [29]. Hydroelectricity, wind, solar, geothermal, etc. are called renewable or green energy [75]. Renewable energy usage is getting attention day by day. Renewable energy supply grew from 590 to 794 million tons(oil equivalent) from 1995 to 2012 [72]. Renewable energy consumption will be helpful for PIC's economic growth [72]. However, PIC has limited renewable energy use because it needs technical support [75]. In Fiji, the contribution of solar and wind energy was 60% in 1997, which was less than 15% in 2002. The reasons for this aggravation are a component failure and a lack of technical support [75]. Some Pacific islands use commercially used biomass for cocoa, copra, coffee and tea drying. Specially Papua New Guinea has been using it since late 2002 [75]. The ADB (Asian Development Bank) announced to fund US$650,000 in technical assistance to Fiji in 2006. It will support upgrading the main electricity grids and electrifying the outer islands of Fiji [75].

Electricity demand is growing day by day. PIC's energy supply has been a significant problem [92]. Fossil fuel usage emits CO2, a GHG (Greenhouse Gas), into the environment. It's responsible for global warming. On the other hand, renewable energy doesn't emit CO_2 and is an environment-friendly energy source [56]. That's why the world is trending toward renewable (green) energy.

9 Accessibility and Mobility

According to the definition of accessibility, it is "the capability to obtain desired goods, facilities, activities, and destinations." This definition is linked to the 'equity turn' in transportation [69]. For this reason, the sustainable development program's objective is for everyone to access safe, cheap, accessible, and sustainable transportation systems (Asia and America 2004). Transportation accessibility isn't always a top priority in planning and implementation [5]. Transport accessibility can take on many different forms. For instance, it may be physical, requiring the user to go a considerable distance to access public transportation (Asia and America 2004, 3). Therefore, when income levels rise, travellers are encouraged to switch from non-motorised to motorised transportation systems. Consequently, money affects passenger mobility levels well and alters transportation types [90]. Growth in the economy increases the number of vehicles owned and the need for mobility, which raises the amount of energy used in transportation [90].

Over the past ten years, investment in transportation infrastructure has increased significantly in Asia-Pacific (Asia and America 2004, 1). The large-scale infrastructure expenditures made by the Pacific island nations change their economic environment and expand access to energy [25]. The urbanisation development significantly impacts the Pacific area county's transportation and mobility. Since the "urban region" significantly impacts Pacific economies, urban and rural populations can more easily and readily meet their social and economic demands by utilising commodities, capital, and information [58]. On the other hand, a finding states that one of the leading causes of the decreased accessibility is the population's overall increase in mobility [73]. In order to resolve this, accessibility barriers and obstacles must be found and removed [5]. A project has been started in East Asia and the Pacific region to increase transportation accessibility for those with disabilities and those with limited mobility [5]. Thus, reducing poverty can be assisted by increased access and mobility, making it easier for persons with disabilities to participate in political, social, and economic processes [5].

10 Road Safety

Road safety should be a major concern to provide universal transportation access. That's why SDG motive 11.2 is to ensure road safety for all (Asia and America 2004, 1). As we see, many people are losing their lives as a result of vehicle accidents every day. In 2008, there were 208 fatalities and 2,498 injuries related to traffic accidents in Yangon, Myanmar. The same is true for Thailand, where roads are cited as the cause of 45% of accidents [55]. Sometimes, this occurs as a result of the driver's careless actions. Schoolchildren said that cars typically do not give way when they cross the street using a pedestrian crossing (Asia and America 2004, 16). They have shown unfavourable behaviour, negatively impacting passenger safety and comfort and harming the urban environment (Asia and America 2004, 17). That's why older responders stated, "The roads are now too unsafe for us to walk," so we don't leave our houses until absolutely necessary (Asia and America 2004, 16). Because of the lack of road maintenance, fewer individuals have access to health centres, and fewer kids attend school [29].

Fossil fuel imports are incredibly important to the Pacific area [84] because seventy per cent of fossil fuels are used in the transportation sector in PICs (Pacific island countries), and this sector is also vulnerable to the effects of climate change: temperature changes, rising sea levels, storm surges, floods, and landslides all cause damage to pavement, highways, bridges, roads, and infrastructure, including the erosion of road foundations and bridge supports [25]. Because the PIC's main roadways and other vital infrastructure are located close to the

coast, it is especially vulnerable to climate change [78]. Thus, environment-friendly transport mood should be used to ensure road safety in this region (Asia and America 2004, 2). As a result of too many incidents, The Southeast Asian governments place a high focus on improving road safety [55]. Additionally, Thailand strongly focuses on road safety by requiring regular driver training and safety audits [55]. A new campaign to promote safer driving practices, especially drunk driving prevention, has been started in Vietnam [55]. In order to increase social benefits and reduce deaths and accidents by 25%, Myanmar is also working to improve road safety. In order to increase road safety, Laos wants to boost its public education and awareness campaigns. To protect the safety of the roads, Jakarta and Singapore also created fast transit systems and land transport master plans [55]. Regulators in the transport sector can also play a critical role. Regulators must ensure sufficient high-quality and safe public transportation services (Asia and America 2004, 20).

11 Health Safety (overall, not only covid)

Development is hampered by poor health and healthcare systems, which can reduce the credibility of governments [38]. The Australian prime minister was very concerned about the health safety of the population during the past epidemic (The COVID situation) because there was a lot of information on social media that was frightening people. As a result, the leaders had chosen to be the first to receive vaccinations to reassure the public that vaccinations are safe [64]

The implications of climate change are closely related to the provision of the fundamental elements of health and wellbeing [110]. A healthy environment is beneficial for children, so the environment is essential for the future of Pacific Island nations [17]. However, increased health hazards are caused by factors such as increasing temperatures, shifting rainfall patterns, rising sea levels, and intensifying extreme weather events like cyclones, flooding, and drought in the Pacific island nations [16]. Threats, including water, land, energy, and destruction of the environment, can affect people's physical and mental health, economic wellbeing, nutritional intake, and access to decent housing [30]. Water supply contamination significantly impacts human health [30]. The healthcare systems in the Pacific Islands differ. Non-communicable diseases are Pacific Islanders' most serious health issue [38]. The food environment and underlying social and socioeconomic factors create an environment that promotes unhealthy weight gain and non-communicable diseases at ever younger ages in the Pacific region[39]. Because children breathe, drink, and eat significantly more concerning their body weight than adults do, they(youngsters) are also more vulnerable to environmental risk factors [17]. Daily health risks associated with climate change are frightening. Therefore, a health adaptation strategy should be implemented to ensure the Pacific region's health safety [16]. Planning for health adaptation aims to integrate climate crisis into public health practice and policy agendas (Boyer et al. 2020, 5). The health adaptation program is a long-term initiative that uses scientific implementation to improve health safety and climate change adaptation in the Pacific region [16].

12 Waste Management

Waste management is the system of rubbish or garbage disposal; It protects people's health and environment [76]. Waste management has been a global problem, and the Pacific countries are rapidly urbanised. The population is increasing day by day due to rapid urbanisation [26]. The world's population increased from 1.4 billion to 3.7 billion from 1950 to 2002. The UN (United Nations) projections suppose that the population will increase by another 1.25 billion by 2030. This population increase creates extra waste, complicating waste management [103]. The World Bank (WB) reported that economic development and urbanisation also increase solid waste. The PIC (Pacific Islands Country) also faces various waste management problems due to rapid urbanisation and economic growth [36]. Tourism also affects waste quantity. Tourists come from multiple countries and increase litter [36]. Increased waste negatively affects drinking groundwater resources [26]. Due to globalisation and dishonest economic development paths, the ecosystem is hampered in hindsight. It increases solid waste quantity and complexity, significantly threatening the environment [76].

Solid waste management (SMV) targets eliminating harmful wastes from living areas and improving public health [103]. The Pacific SIDS (Small Island Developing States) unloads the rubbish at official or unofficial landfills. Landfills are usually located in low-lying land like mangroves. Unoccupied lands are not required for any purpose and are usually chosen for landfill [26]. However, there is limited unoccupied land for the landfills in PICs, which negatively affects the environment [26].

Waste disposal service is accessible in urban areas. The country's government generally bears the waste collection and transport costs [26]. The PIC is unwilling to recycle waste items due to the high collection and transport costs. But most developed countries make the best use of waste items by recycling them. The Pacific SIDS waste management department is trending to recycle the waste [26]. Waste management-related government and non-government agencies should come forward to develop and implement a proper waste management system [26]. So, Public awareness should be increased to improve efforts for this matter [88].

13 Insular Pacific Spaces

The word "island" refers to a sub-continental area of land that is encircled by water and suggests a physical insularity (which fundamentally refers to separation from the mainland) [79]. Islands represent paradoxical geography. Islands are insular by definition because they represent solitude. Although the term "insularity" has a bad reputation, it is also used to describe things that are particular, little, secretive, secure, distant, and isolated [112]. Because of the insularity of the Pacific island, environmental preservation and economic growth frequently clash [65]. The Pacific has also suffered due to its tiny size, isolation, ecological sensitivity, disaster susceptibility, and dependency [65]. In fact, the insular Pacific island countries had unique views on education (informal education) [66]. The insular Pacific region is also subject to some constraints. Examples of such limits include the insular region's isolation from the mainland, the lack of economies of scale, the population's frequent seasonal shifts, higher infrastructure expenses, and the region's meteorological conditions and

microclimates [79]. It also contains a few industrial facilities [79].

The Pacific Ocean has three insular regions: Melanesia, Micronesia, and Polynesia [8]. There are also a few tiny, insular countries in the Pacific, including Tonga, Niue, Tuvalu, and Nauru [65]. Several restrictions apply to insular regions that must be noted [79]. In the case of these Pacific region countries, because of the inadequate land area and rapid population expansion, this nation's environment is extremely vulnerable, and its economy is in crisis. However, they should focus on improving their country's economy and ecology [65]. On the other side, coral reefs and other marine habitats in the Insular Pacific are becoming increasingly endangered due to overfishing and coastal land expansion. But sometimes, due to the people of the Pacific Islands, coastal environments are extremely important [60]. The coastal regions can occasionally improve the quality of life for some coastal residents in the Pacific island countries [65]. To properly manage the coastal area, a program known as Marine Protected Areas (MPAs) is being developed, which could be critical for the Insular Pacific region's efforts to preserve marine ecological diversity [60].

14 Natural Calamity/Disaster

Natural disasters mean such natural conditions that bring great suffering for human beings [18]; these are earthquakes, landslides, floods, cyclones, etc [24]. Besides, Natural calamity and disagreement can affect any country's development, where the Pacific countries have been lagging due to natural disasters [49]. So, It affects the country's population, economy, and various long-term frameworks [49].

Asian and Pacific countries are unaware of natural disasters [49]. It makes many people homeless [49]. UNDP reported that cyclones mostly affect Pacific countries [24]. Due to Pacific countries' position and tectonic plate motion, they are at significant risk of earthquakes and tsunamis [27]. A tsunami is a disaster that doesn't care about geographical boundaries, causes a significant loss and makes many people homeless. Over the last century, 2.5% of people were homeless in South Pacific countries [27]; the Pacific Ocean contains the famous Pacific Ring of Fire (PRF). It forms the field of volcanoes [27].

Natural disaster causes significant loss [49]; it is one of the major causes of untimely death. About 79,000 people died, and 200 million were injured because of natural disasters [24]. So disaster risk management, the application of required policies and strategies to reduce disaster losses, needs to be implemented with special attention [18]. Natural disasters have adverse effects on a country's economic growth. It damages about 15.6% of the total GDP (Gross Domestic Product) in pacific countries [24]. In 2009, the South Pacific countries cost US$85 million to repair the physical damages caused by natural disasters [27]. So, Pacific countries should develop foreign assistance to promote economic growth and protect against natural disaster's cruelty. It should improve health facilities to reduce human and natural disaster-related costs [20].

Moreover, The PRC required a comprehensive disaster management strategy; it also needed to seek Pre-disaster warning systems and inhabitants' awareness systems. The PRC should facilitate more safety training for its population to swim and rescue themselves [115]. Increasing awareness will develop people's risk acceptance and tolerance abilities [44]. Pacific islands should promote natural disaster management systems. It will effectively prevent natural disasters and reduce disaster-relevant damages [44].

15 Road Transportation

A nation's or economy's foundation is its transportation system, which is much more critical in metropolitan regions where most people live work, and the economic engines are located [55]. Urbanisation has a positive impact on national transportation and road energy use. The high-earning group appears to be more affected by urbanisation changes than the other groups regarding transportation and road energy use [90]. National road energy use increased by 0.81%, 0.37%, and 1.33% in low, middle, and high-income nations between 1975 and 2005 for every 1% growth in urbanisation [69]. Three factors affect how much energy is used on roads: the number of vehicles, annual usage, and average fuel efficiency (litres per kilometre) [90]. In many PICTs (The region of the Pacific island countries and territories), there are adequate road networks that link healthcare facilities to the populace; however, on the outlying islands, the accessibility to transportation may be less developed or insufficient [98]. Besides, most poor regions are not directly connected to major roads, and local roads are in terrible shape (Asia and America 2004, 11). A road connection between the capital and the remaining 80% of Papua New Guinea's population does not exist due to the country's rural location [98]. For this reason, the East Asia and Pacific region received funding from 14 world banks for improving road infrastructure, traffic management plans, and public transportation facilities [5].

The idea of the "21st-Century Maritime Silk Road and the Silk Road Economic Belt," also known as the "One Belt on Road Initiative," was introduced by the Chinese government in 2013 [68]. By way of the Belt and Road initiative, China has promised to provide a free platform for collaboration. The Belt and Road program has recently received strong diplomatic support from the Chinese government [116]. According to the Chinese government, the Belt and Road Initiatives would increase transportation efficiency and speed and reduce transportation costs [48]. To profit, PICs (Pacific Island Countries) must overcome at least two major obstacles. To begin with, the project is still young, and the Pacific is not a focus of the Belt and Road plan, which is the second major problem for PICs [116]. PICs should improve their contact with Beijing to develop a better road transportation system and leverage their priority industries, such as the environment, tourism, agriculture, health, and fisheries, to advance the SDGs (Sustainable Development Goals) [116].

16 Transportation

Sea transportation is the lifeline of PIC's (Pacific Island Country) communication; It is the main transport system of goods, people, and resources. Their primary transport mode is shipping [84].

The ships used in PIC's sea transportation are often old, inefficient, and poorly maintained. The transport modes use fossil fuels as their energy sources. The PIC's energy sources

are dependent on imported fossil fuels. The transport sector employs more than 70% of total fossil fuels [84]. Imported fossil fuel usage is harmful not only to the PIC's economy but also to its environment. Fossil fuels emit much carbon, making sea transportation unsuitable [87]. In 2010, almost 23% of CO2 emissions were caused by transportation [84]. Shipping is responsible for GHG(Green greenhouse gas) emissions in the atmosphere. It increases NOx (Nitrous oxide) and Sox (Sulfur Oxide) in the air [85].

Geographical location, population mobility, natural disaster susceptibility, climate change, socioeconomic cooperation, national policies and regulations affect sea transportation [87].

Usually, sea Transportation is thought to be a private investment issue. Public and donor investment for sea transportation is limited in PIC. Faster and larger engines and ships or vessels are considered progressive [87].

A more formalise regional approach is needed [71]. The RMI (Republic Marshall Islands) targeted to decrease 20% transport fuel reliance by 2020. 13 PICs are signatories of SIDS (Small Island Development States). The SIDS has targeted to reduce transport fuel usage by 25% by 2033 [85]. Sails, a wind-catching apparatus, will effectively reduce sea transport costs [87]. Domestic shipping should be reliable, adequate, and affordable to implement sustainable socioeconomic development [91]; moreover, an alternative fuel system with low carbon emissions is crucial to establish these countries toward the emission target [85]. It is revealed that the ship's speed reduction and slow steaming policy are critical for these countries to achieve economic growth [87]. Renewable energy technologies are widely adopted in various parts of the world; therefore, PRC should be used for shipping. However, wind, biofuels and solar are the best alternative energy sources. Renewable energy-powered vessels should be used [91]. It will be cost-friendly and reduce the dependency on fossil fuels [84].

17 Sea Transportation

Oceania, an area that is the island of the Pacific Ocean and adjacent seas, contains almost 10 million and more than 25,000 islands. It has 3 million square miles of the world's largest ocean. Oceania has great diversity from various islands like Tuvalu, Papua New Guinea (PNG), etc. For that, they need sustainable sea transportation with low carbon [85].

The importance of sea transportation for Pacific countries and communities is beyond description [91]. Independent shipping companies or governments operate the coastal and inner island shipping services [87]. Shipping is responsible for GHG(Green House Gas) emission, which causes climate change and increases public health risk [85]. It emits a lot of sulfur dioxide (SO2). SO2 emission has grown 92% from 1978 to 2008 [11]. To solve these problems, some steps need to be taken. These are using emission reduction technologies, renewable energy, fuels with low carbon like bio-fuels or LNG (Liquefied Natural Gas) and improving energy efficiency [85].

Socioeconomic development and necessary governmental services are needed to promote sustainable domestic shipping [91]. Asia and the Pacific have up to 60% of the world's population. This is the home of 66% of the world's poor population. However, its economic growth in the last decades is noticeable [10]. Still, providing efficient, reliable and adequate domestic shipping has become a challenge for the PICs (Pacific Island Countries) [87]. Imbalance in outward loading, financial problems, higher infrastructural costs and high operational risks are some characteristics of Pacific sea transportation. This is also a great challenge for implementing sustainable sea transportation in PIC [85]. Transportation causes 52% of total oil consumption [11].

Nowadays, policymakers are trending toward sailing vessels powered by the wind for sea transportation, especially for fishing. Tuvalu has made a target to reduce 60% of energy. They have included a multi-hull sailing freighter for the Ha'apai Group in Tonga [85]. Bio-fuels or biogas can be used for shipping energy [87].

18 Tourism

Tourism refers to travel to spend leisure and get pleasure. It not only pleasures tourists but also benefits the spots and country economically. There are very small economic benefits from tourism in Pacific countries. Science 2015, PIC's (Pacific Island Countries) tourism has grown by only 10.5%, whereas global tourism has grown by 29.5% [50]. But except for Fiji. Tourism directly contributes to Fiji's GDP (Gross Domestic Product). There are 43,000 jobs based on travel and tourism. It contains about 6.4% of the total GDP [71]; Tourism has created almost 146 jobs [83]. About 35.8% of total GDP (nearly F$2,508.6 million) and 32.3% of total employment were from travel and tourism [50]. Tuvalu's economic condition is not so good. The country needs more sources of income. Tourism can be a source of tax. It would contribute to solving the economic problems in the Pacific island countries, including Tuvalu [94].

Tourism is connected with agriculture. In New Zealand, tourists are not willing to have local cuisines, so most foods from tourist places are imported. That's why the link between tourism and agriculture is negligible [50]. The Solomon Islands attract many tourists from Australia and New Zealand [83]. But tourism has a small contribution to Solomon Island's GDP and contributes most to PNG's (Papua New Guinea) GDP [83]. Tourism helps to achieve SDG (Sustainable Development Goals), especially under SDG 8. It contributes to Decent Work and Economic Growth target 8.9 by creating jobs and enriching local products and culture [93]. Hotels and resorts also affect tourism. In French Polynesia, about 11% of GNP (Gross National Product) was provided by luxurious resorts in 1999 [50].

Its opportunity should be improved and continuously assessed to promote income from tourism. Private investment, a developed transport system, adequate activities, and infrastructure can improve tourism opportunities [94]. Especially air travel system, as it is the main way of transporting tourists to PIC, needs to be developed and cost-friendly. The safety and security of tourist spots need to be improved. It will attract tourists. Thus, tourism will be promoted and contribute to PIC's economy [50].

19 Trade Logistics

Trade logistics is the industry that connects people with markets and buyers with sellers. International and domestic

logistics are the two primary parts of trade logistics [104]. Ports play a crucial role in trade, which is essential for economic growth, and distance has traditionally been one of the key factors considered when examining trade barriers [51]. The logistics group of the World Trade Organization (WTO) divides logistics services into four groups: core freight logistics services, freight transport services, other related logistics services, and non-core freight logistics services [104]. Due to high freight costs and growing urbanisation, trade in remote areas is restricted [87].

Transportation sometimes causes emissions of CO2 and other harmful gases [104]. The most important elements that could significantly contribute to CO2 emissions in trade are the diversity of exports and imports [56]. An increase in the percentage of commercial activities causes an increase in energy demand, significantly impacting both environmental quality and energy consumption [56]. However, we can't deny that trade and energy positively impact economic growth (basically in seven South American countries) [72]. The financial outlook of the Island nations and the working conditions of its citizens will be significantly more affected by free trade initiatives [37]. So, the government should develop chances for increased economic cooperation through FTAs (Free Trade Areas) for global trade [72].

Dependence on foreign trade makes one vulnerable to world events [72]. As the small island developing nation heavily depends on international trade, it only has a small home market. As a result, their economic growth is too slow [108]. Conversely, The World Trade Organization (WTO) Annual Report states that expanding international trade is now a key driver of global economic growth [72]. Because Global trade costs are reduced through more effective trade logistics, it brings together a group of linked service operations that support businesses' involvement in international trade and the creation of global supply chains [104]. Still, The challenge facing policymakers today is how to effectively take advantage of global collaboration in areas like the construction of physical infrastructure, regulation, project financing, and private sector growth to support improved supply chain efficiency and more effective logistical procedures [104].

20 Pacific War and tension

The Pacific Island States' maritime areas are considerably larger than their land areas [40]. It also contains special environmental features, such as high insularity rates, geographical and geological variety, and the availability of raw ingredients to support adaptation [86]. The Pacific Islands served as war zones during the two world wars. The conflict exposed the weakness of the colonial system in Pacific region countries like Papua New Guinea (PNG). Wars reshaped the Pacific's colonial map. Today's armed force in PNG is the result of World war-2 [95]. However, the Pacific Islands are now fighting a battle against climate change. Climate Change has an impact on their society, economy, and culture. The small, low-lying islands may also face challenges to their survival [54].

PICs (Pacific Island Countries) heavily rely on imported fossil fuels, hampering their economic growth and the environment. It pollutes the environment and causes climate change [113] [84]. As the PICs depend on imported energy sources, they can't provide electricity for all. Electrification of the whole region has become a great tension for them [113]. It also has retarded economic growth and improved the living standards of some PICs [42]. Renewable energy usage can solve these problems [72].

Food security has also been a great tension for the PICs. Although the United Nations(UN) is working to fulfil the basic human rights of PICs by recognising SIDS (Small Island Developing States) and LDCs (Least Developed Countries), some developing countries are suffering from a lack of food security [35]. Urbanisation is lessening rural like farmer and fishermen, who provides food. That's why PICs have been highly dependent on imported foods and tense about food security [35].

Nowadays, the governments of PICs are afraid of water security. The region depends on groundwater, surface water and harvested rainwater to get fresh water. But in some small islands, the water sources are limited. They import water via pipeline (regular Source), barge or boat [34]. Water security is decreasing. To solve this problem, water governance and management need more attention [34].

21 Civil Aviation

Civil aviation means operating an aircraft by a civilian (a person not in the armed services or the police force). It is very important for a country's economic development and security. It protects the country from dangers created by human beings like terrorism. The PICs (Pacific Island Countries) also operate civil aviation [46]. Both a vulnerability and a chance exist in the Pacific region's regulatory supervision structure for civil aviation [46]. There is also an organisation called The International Civil Aviation Organization, which promotes civil aviation worldwide (ICAO) [100]. Civil aviation authorities generally have three responsibilities: providing public services, such as air traffic control, enforcing operator safety and security, and formulating policies to promote industry growth [97].

The aviation industry is very tightly controlled and regulated [43]. However, airfreight is limited in PICs [106]. Because entering the civil aviation sector needed a sizable upfront capital expenditure, which aids in leasing or buying aircraft and equipment and constructing ground facilities [47]. Civil aviation in the Pacific region concerns Australia and New Zealand [46]. The New Zealand government's Air Division was given management of the two airfields following the war [1]. The Australian government has adopted various initiatives like PASO (Pacific Aviation Safety Office) [46]. However, it is inefficient for PASO to oversee the safety and protection of civil aviation [46]. The Australian government not only saves the PICs from terrorism but also promotes trade and tourism, as PICs' external communication is highly dependent on air transportation [46]. Thus, The South Pacific Regional Civil Aviation Council (SPRCAC) was created to address concerns related to regional transportation [47]. One of the major sources of greenhouse gas emissions is the aviation industry (GHG) [43]. Climate change is a risk associated with civil aviation. A significant greenhouse gas emission source is civil aircraft [100]. In order to combat GHG emissions from civil

aviation, the UN Framework Convention on Climate Change (UNFCCC) was the appropriate platform [43].

22 Economics

Economics refers to the condition of a country as regards material affluence. Because of this area's climate, geography, geology, and inadequate infrastructure, natural calamities tend to expose and harm PICs [62]. The region is still highly vulnerable to natural disasters [23]. Natural disasters have devastated many small South Pacific island countries, resulting in economic collapse in the region [33]. Disasters like cyclones, earthquakes, floods, and drought have hampered economic development in this region [99] Political insecurity and income inequality are also significant barriers to economic growth in this region [31]. Because of expanding globalisation, their commercial sector is not very diverse. Even though this sector can boost economic efficiency, a lack of economic diversity raises financial risk [109]. Successful economic diversification is necessary for the nation's current limited economic base. Gas, oil, copper, and gold are just a few examples of natural resources that could be essential to the region's economic growth [62].

The majority of people in the PICs (Pacific Island Countries) are rural residents who depend on subsistence farming and cash earning. The majority of exports are natural resource-based, including agriculture, marine, forestry, and mining [31]. Due to this, PICs appear to be on a path of slow growth. Real GDP growth in these nations throughout the ten years was just an average of 2% annually [62]. As a result, The Pacific island economies face challenges in achieving sustainable economic growth. Some experts believe that this is due to weak governance and poor monetary policy [42]. Because small island countries' geographies and natural characteristics vary greatly, it is difficult for them to benefit fully from economic globalisation [109].

Both domestic policies and the foreign response will significantly impact economic recovery. The process of financial recovery can move forward rather swiftly where governmental policies and international aid have been effective and well-directed [33]. The development of human resources is crucial for enhancing this region's economic and social situation. This is just another strategy to recover economic growth [23]. PICs today have advanced significantly in many areas of development, including the Millennium Development Goals [62].

Discussion

Many social and Cultural issues stem from the islands' remoteness and limited resources and expertise. Slow actions to mitigate climate change, harsh weather, and local environmental and demographic issues are difficult to manage. Recent cultural transformations produced by the interplay between indigenous village-based societies and the modern economy, such as a trend from self-help to freight dependence on foreign handouts, create more challenges. Climate change is a significant social and cultural issue that influences almost every aspect of future development and presents many challenges for all our organisations and individuals [111]. Religious Views, tradition, isolation from modernisation and a lack of proper education are barriers to overcome to use emerging opportunities.

Mining and dynamiting reefs are common. Coral reef conservation should be part of a climate change mitigation and adaptation package because a healthy reef can adapt better to climate change than a damaged reef. There is compelling evidence that coral reef destruction has reached a level where its continuation, at least in the next decades, is assured [22]. The Pacific Islands' Religion may potentially hinder climate change efforts. From explicit denial of climate change to the belief that Divine Intervention would be a big part of any solution, religion is utilised to postpone and sideline climate policy change enforcement [22]. The diversity of islands, people, and beliefs complicates climate change mitigation. Open and honest communication was often not preferred in the presence of visitors, which may have impacted our study. Because of this, direct community participation is the best way for outsiders to influence environmental decision-making in Pacific Island Nations (rather than top-down input) [22].

Carbon emissions and power generation are interconnected; a rising population and meeting the power demand for them ultimately releases more carbon dioxide into the atmosphere. The positive trend is that the problem has been acknowledged worldwide, and efforts to reduce the emission are ongoing. PICs are aware of and susceptible to climate change, yet most islands only get a tiny amount of their power from renewable sources. Fiji and Papua New Guinea produce hydroelectricity, whereas Tokelau uses solar energy. The Marshall Islands' largest cities, Majuro and Ebeye, are modernising their power grids and adding solar and wind energy. Copra (coconut oil) is another sustainable energy source being considered. If successful, the Marshall Islands' ambition to become carbon-neutral by 2050 may serve as a practical example for other PICs and non-PIC coastal countries and urge other governments to do the same [25]. Pacific Island transit is more challenging than most others due to long routes, tiny economies, asymmetry in incoming and departing loads, financial limits, significant hazards, and expensive infrastructural expenditures. Despite low energy prices, the area has failed to establish long-term, sustainable, and financially feasible maritime transport solutions (UNESCAP, 2010). The University of the South Pacific and the International Union for Conservation of Nature - Oceania Regional Office launched the Oceanic Centre for Sustainable Transport (OCST) in 2013 to promote practical research on this important topic. During the current oil crisis, OCST may learn from the region's creative, sustainable energy maritime transport projects. These efforts focused on village and island commodities, passenger transit, and small-scale fishing [84]. These efforts and changes in the future and the move towards greener energy could mean cheaper transport and minimum emissions, which should be economically viable and even support long-term sustainable development goals and lessen carbon emissions.

The PICs are in a critical situation where only technical development and a perfect plan with the integrated investment of national and foreign resources can help indeed. The World Bank's Pacific Catastrophe Risk Assessment and Financing Initiative (PCRAFI) models threats using PacRIS's 5 million public and private buildings database. This estimates fatalities,

injuries, and damage to hospitals and other facilities. These facilities and programmes can help a country recover quickly from global warming-related natural disasters. Most PICs lack the technical capabilities to create high-quality infrastructures or regional economic development projects and get finance. Most environmental money comes from multilateral technical support organisations, but PICs frequently lack project implementation expertise. Policy solutions include investing in technical skills to secure climate money, sector-specific initiatives to attract resources, and integrating national development objectives with foreign aid and national budgets. The Pacific Islands Forum Secretariat (PIFS) coordinated the Forum Compact - A Pacific Regional Enabling Framework to Promote Sustainable Development Goals; however, PIC's capacity must be increased [25].

Landlocked states and sea-locked states, which depend on foreign facilities and transit arrangements to enter global markets, need cross-border trade logistics coordination. Cross-border cooperation is also a larger logistics issue since many logistical procedures, such as transport and border authorisation, depend on the adequacy of legislation and processes and the construction of acceptable institutions to support global and regional commerce. Cross-border logistics cooperation includes infrastructure, border procedures, and laws [104]. Addressing key logistics-related concerns in the Asia-Pacific environment and worldwide situations that may guide action in the region. Most nations in the Asia-Pacific area are placing a greater emphasis on logistics-related changes in an effort to increase supply chain efficiency. Just as performance differs from nation to nation, so too does the nature of the issues to be addressed. In certain circumstances, physical infrastructure is the primary factor. In certain cases, the issue is regulatory reform and red tape. In still others, it is cross-border collaboration, especially regarding border processes and passage procedures [104]. Sea-locked states are in a situation with barriers. Certain things must be reformed to ensure easy and flexible interconnections among nations. Just logistic support in the cross-border along with sustainable infrastructure implementation must be ensured to avoid complex inter-border transportation between the countries.

CONCLUSION

As a result of being surrounded by the Pacific Ocean, the Pacific Island Countries (PICs) are directly affected by climate change and global warming. The growth in global emissions and their own carbon emissions are somewhat responsible. Due to increasing water levels, these small island nations may cease to exist in the near future if no viable alternative is created [67]. These nations rely on the sea and land for the majority of their revenue and are mostly barren of valuable natural resources. They depend on the export of fish as well as taro, banana, coconut, cacao, and other tropical fruits. Even these exports are affected by price variations on the international market and decreased profitability resulting from transportation costs to the international market [74].

Due to the region's poor wealth and isolation, education and other social benefits are sparse. Rising ocean levels are eroding the coastlines of these islands, putting the people at even greater risk. Due to their geographical location, the islands are susceptible to tropical cyclones, which have disastrous effects on the islanders. Recovery from severe natural disasters requires substantial assistance from outside sources. In the case of natural disasters, infrastructure improvement might help save lives, and taking measures to prevent shoreline erosion would be advantageous. Also, the islands are receiving increasing visitors from other nations and should improve their ecotourism infrastructure to stimulate their economies [67]. PICs must also alter their food preservation practices or face severe consequences. What transpires if rural agricultural output fails during extreme events such as droughts and tropical cyclones if rural areas have a greater impact on the food security of urban centres? Taro or yam snacks may satisfy 21st-century tastes. Additionally, these products may reduce urban food imports. Such activities must be financially and technically feasible for small outlying island communities. Regional food security and intra-regional cooperation are viable alternatives [19].

Further complicating matters is the region's reliance on fossil fuels for transportation and energy production. On the bright side, renewable and green electricity is gaining pace worldwide, and the PICs are also investigating sustainable energy sources such as wind and solar power. Strong Sustainable Development Goals (SDGs) and supporting policies should seek to conserve these natural treasures and improve the quality of life for the local population [59]. Improved education, transportation, and well-planned urbanisation might alter the destiny of these islands and reduce pollution and emissions. Aid from powerful nations and financial institutions such as the Asian Development Bank is a blessing for the survival of these island nations [59].

The paper illustrated that PIC plays a role in the global context; therefore, responsible authorities can further revisit the challenging and warning aspects. The study believes that by overcoming these matters, PICs can make a suitable position in the world economy and for their communities and achieve strong Sustainable Development Goals (SDGs).

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