



# International Journal of Multidisciplinary Research and Growth Evaluation.

## Some recommendations in tourism development to adapt to climate change in the Mekong Delta

**Vu Hai Thien Nga**

Thu Dau Mot University, Vietnam

\* Corresponding Author: **Vu Hai Thien Nga**

---

---

### Article Info

**ISSN (online):** 2582-7138

**Impact Factor:** 5.307 (SJIF)

**Volume:** 05

**Issue:** 02

**March-April 2024**

**Received:** 20-02-2024;

**Accepted:** 22-03-2024

**Page No:** 898-904

### Abstract

Climate change is becoming increasingly fierce and unpredictable on a global scale, seriously impacting all aspects of socio-economic life. In Vietnam, the Mekong Delta is a locality strongly affected by climate change, such as saltwater intrusion, flooding, riverbank erosion, etc. In this article, the author focuses on researching and analyzing climate changes in the Mekong Delta and the effects of climate change on tourism activities, thereby making recommendations to develop tourism to adapt to natural changes.

**DOI:** <https://doi.org/10.54660/IJMRGE.2024.5.2.898-904>

**Keywords:** Climate change, tourism, Mekong Delta, natural disasters, sustainable development

---

---

### 1. Introduction

Society is increasingly developing, socio-economic life is increasingly improved thanks to scientific and technical advances. Those are the positive aspects of the economy. But economic development does not go hand in hand with environmental protection, causing the natural environment to become increasingly degraded and climate change to increase. It is a contributor to the greenhouse effect, including emissions from industrial activities, traffic, and population growth; wastewater from factories and enterprises into the water environment; Chemical fertilizers change the properties of soil, etc. This has created a series of changes that have negative consequences for the natural environment, leading to increased Earth temperatures and rising sea levels. If there are no timely measures to limit, minimize and adapt, the consequences will be huge.

According to the World Bank, Vietnam is one of the countries most heavily affected by climate change. Coastal areas and deltas, especially the Mekong Delta, are often seriously affected by sea level rise, saltwater intrusion, floods, droughts, etc. It is inherently an area with a rich ecosystem. Diverse, with unique natural beauty, combined with the rich culture of the Kinh, Khmer, Chinese, Cham... ethnic groups, combined, creating a rich treasure trove of tourism resources. However, climate change has been affecting the region's treasure trove of tourism resources, especially natural tourism resources, causing difficulties in tourism development in particular and the daily life of local people in particular. Therefore, the need for measures to respond and adapt to climate change is an issue that needs attention.

### 2. Research Methods

To have recommendations for tourism development to adapt to climate change in tourism development in the Mekong Delta, the author researched the issue on the basis of collecting documents on tourism and climate change. Queen; synthesize and analyze documents to have a theoretical basis for the research problem; At the same time, collect data and figures related to climate change and tourism development in the Mekong Delta, thereby analyzing and evaluating the impact and consequences of climate change. For tourism development in the Mekong Delta. With the current situation of the problem assessed, the author proposes a number of recommendations in tourism development to adapt and sustainably develop tourism in the Mekong Delta.

### 3. Theoretical basis of the research

#### 3.1. Climate change and its effects on tourism

##### 3.1.1. Climate Change

Climate change is a change in the state of the climate compared to the general stability of the climate that has remained stable for a long time.

Climate change is a complex phenomenon, affecting and influenced by many factors, including economic development, poverty, population growth, resource management and sustainable development. Therefore, approaches to managing climate change and climate risks come from a multitude of disciplines and are often divided into two categories: mitigation and adaptation (ADB, 2012) <sup>[1]</sup>.

Climate change represents a long-term change in the statistical distribution of weather patterns (e.g. temperature, precipitation, etc.) over decades to millions of years. The climate on Earth has changed on all time scales even long before human activity could have played a role in its transformation. But the United Nations Framework Convention on Climate Change (UFFCCC) defines "*Climate change as a change in climate that is attributed, directly or indirectly, to human activities that alter the composition of the global atmosphere, and in addition to natural climate variability observed over comparable time periods*". The Intergovernmental Panel on Climate Change (IPCC) definition of climate change includes change due to natural variability along with human activity. The Australian Government Department of Climate Change, Energy, Environment and Water (DCCEE) in its website describes – "our climate is changing, largely due to observed increases in man-made greenhouse gases absorb heat from the sun in the atmosphere and reduce the amount of heat released into space, this additional heat is thought to be the main cause of the observed changes in climate system in the 20th century". Muhammad Ishaq-ur Rahman (2013) <sup>[7]</sup> describes "climate change is mainly a change in modern climate caused by human activities. And adverse human activities such as burning fossil fuels, deforestation, etc. considered capable of causing change in some aspects of climate".

Thus, climate change is an unusual change compared to the rules of weather and climate, which is manifested by global warming, or the phenomenon of rising sea levels due to melting ice. or extreme changes in weather factors, atmospheric circulation processes, water circulation, biogeochemical cycles, etc. Climate change has many major consequences for human life, such as: coastlines are gradually disappearing, icebergs and glaciers are shrinking, some islands are in danger of disappearing; Ecosystems are being destroyed by rapidly increasing levels of carbon dioxide, seriously affecting ecosystems, fresh water supplies, air, fuel, clean energy, food and health. Climate change also causes biodiversity loss: about 50% of plant and animal species will be at risk of extinction by 2050 if the Earth's temperature increases by 1.1 - 6.40C. All of these consequences come from two groups of causes:

- Group of subjective causes: According to scientists, human impacts on the natural environment (deforestation, slash and burn farming, fertilizing fields, exploiting resources...), or the development of industry, urban areas, transportation, etc. are the causes of climate change. The essence is that increasing CO2 gas is the cause of climate change.

- Group of objective causes: Changes in nature itself, such as changes in the activity of the Sun, the Earth's orbit, the movement of continents... are also causes of global climate

change.

The group of subjective causes is the main group of causes leading to climate change. Therefore, it is necessary to have measures for people to adapt, cope and improve nature to maintain sustainable development.

##### 3.1.2. Tourism and the effects of climate change on tourism

###### a. Tourism

Travel is an activity to experience and explore new lands, to relax, entertain, learn, experience culture, or to learn about the world around. It can include visiting scenic spots, relaxing at the beach, visiting big cities or villages, or even participating in dangerous activities such as mountain climbing, scuba diving, or travel to explore wild nature... Travel brings relaxation, reduces stress, expands knowledge and creates memorable experiences for participants.

In today's era, with strong economic development, people's material lives are becoming more and more complete; developed means of transportation; The need for entertainment, relaxation, learning and exploring the world... is a great human need. Therefore, today's tourism activities are increasingly developing, it is gradually becoming an inevitable need. To satisfy people's increasing demand for tourism, tourism resources play an important role in that development. Tourism resources include many types, such as: natural resources (sea, forest, lake, mountain, flora, rivers, etc.), human resources (historical relics, parks, etc.), architecture, culture, art, ethnic cultures, customs, etc.), or social resources (political, economic, cultural, social events). Tourism resources are the "soul" of tourism.

###### b. Impact of climate change on tourism

Tourism is considered an economic sector sensitive to natural environmental conditions, and one of the sectors strongly affected by climate change. That can be clearly seen in the impact of climate change on tourism resources, or even in the group of factors related to facilities serving tourism.

Tourism resources play an important role and are a basic factor for the development of the tourism industry. Any fluctuations in the quality and quantity of tourism resources affect the tourism development process. There is little research on economic impacts, including impacts on tourism, mainly at a global or regional scale. For example, a study by Bigano *et al.* (2006) simulated the impact of development and climate change on tourism. The model predicts a shift in international tourist flows towards higher altitudes and latitudes. Climate change could negatively affect countries and regions that rely heavily on income from tourism and could also benefit locations that are not currently attracting tourists. The authors use a statistical model (Hamburg Tourism Model, version 1.2.) with the goal of describing, at a high level of geographical disaggregation, the behavioral responses of tourists to change climate, both in terms of changes in their behavior (domestic and international) quantities and changes in their spending decisions. On the other hand, we see that: all tourism resources are affected by weather and climate factors. According to the law of unity and completeness of the geographical crust, any change in natural components will also lead to changes in other natural components. Therefore, when climate factors fluctuate, other natural resources in the group of tourism resources also change (Plamen Mishev and Milkana Mochurova, 2008) <sup>[9]</sup>. Climate change can have a number of impacts on the tourism industry depending on geographical location and type of

activity. High-altitude regions in Asia, including the Tibetan Plateau and the Himalayas, are facing ongoing consequences of climate change such as glacial lake outbursts, glacier floods, and melting glaciers (Mool *et al.*, 2001, Che *et al.*, 2004; Pradhan *et al.*, 2012). The Himalayas are said to have shown a decline in glacier cover (Murtaza and Romshoo, 2016) and a decrease in extreme rainfall and variability in Nepal (Duncan *et al.*, 2013). Similarly, 5000 glaciers studied in China are reported to have shrunk rapidly in recent years and as a result have caused glacial floods in low-lying areas (Li *et al.*, 2005; Liu *et al.*, 2006). Furthermore, countries such as Taiwan that have natural attractions (National Parks) may see a decrease in tourism due to unusual rainfall (Liu, 2016). Some Middle Eastern countries such as Iran are affected by rising temperatures that can cause water supply problems and severe heat waves leading to reduced tourist arrivals (Yazdanpanah *et al.*, 2016). Concerns are growing that a 2°C temperature rise could change seasonal snow cover depths across Austria, leading to restrictions on ski tourism due to shortened ski seasons (Breiling and Charamza, 1999).

Besides, climate change causes changes in the laws of evolution of climatic factors, such as temperature, humidity, etc., which will affect growth, development, and even survival of many ecosystems, rare and endemic species of tourism value; or climate change will affect the development conditions of resort tourism.

In human resources, climate change causes extreme weather phenomena such as storms and floods, and the consequences of prolonged flooding can have serious consequences, even causing the loss of many cultural and historical relics.

Thus, from the perspective of natural tourism resources or human tourism resources, climate change has direct impacts that affect the quantity and quality of resources, which will have a major impact to tourism development.

In addition to tourism resources, climate change also affects tourism infrastructure, such as road systems, transportation, accommodation, cuisine, and services for cultural and recreational activities entertainment, store network, tourism security services... It can be seen typically that the influence of climate on the transportation system is closely related to tourism development activities: Transportation is the bridge that transports tourists to tourism activities. Climate change disruptions in traffic also mean disruptions in tourism activities (According to statistics from the World Tourism Organization, over 60% of international tourists participate in air travel - a type of transportation that is closely affected by fluctuations in weather and climate). Or extreme weather phenomena also affect the supply of electricity and water for tourism needs. In the dry season, freshwater resources are reduced, saltwater intrusion due to rising sea levels combined with excessive groundwater exploitation affects the quality and ability to supply water. Not only that, climate change causes erratic rains and floods, affecting construction projects such as hotels, architectural works serving tourism, etc.

Thus, it can be seen that climate change with manifestations of changes in weather rules, the increasing appearance of extreme weather phenomena, in terms of intensity and scale, will have unpredictable impacts small to tourism development activities. Currently, climate change is a major environmental concern and has negative social and economic impacts. The major threats to the tourism industry are increasing the risk of species extinction, reducing the amount of fresh water, increasing health and life instability, increasing accidents due to forest fires, and increasing heat

waves and increased risk of disease. Unfavorable climatic conditions for attractive tourist destinations can even become a reason why people avoid traveling to those places. People don't want to travel to a place where their lives are in danger and could bring them new diseases. Likewise, the increasing risk of wildfires may limit tourists' choices for their tracking and hiking destinations. In this regard, Asian countries are most at risk because biodiversity is mainly located in Southeast Asian countries. Coastal change and island loss may contribute to worsening situations in developing countries because people have few resources to manage and mitigate ongoing impacts. Climate change is a growing concern for the tourism industry, which requires further attention, research, and comprehensive management steps to mitigate its impacts in the long term (Samreen Siddiqui and Muhammad Imran, 2018) <sup>[10]</sup>.

### 3.2. Some details about the Mekong Delta

The Mekong Delta is a part of the Mekong Delta, about 40,000 km<sup>2</sup> wide, located in the southernmost region of Vietnam. The Mekong Delta is also known as the Southern or Western Delta. Naturally, the Mekong Delta is formed from alluvial deposits of the Mekong River, with an average height above sea level ranging from 3 to 5 meters, with some places only 0.5 meters high. Therefore, this is a land that is considered low. This is also the reason why this area suffers from saltwater intrusion every time the sea level rises. Regarding climate, the Mekong Delta is located in the sub-equatorial climate area, with an average temperature of about 24 - 27°C, with 2 rainy and dry seasons. The rainy season is from May to October, this is the time when the delta receives a lot of fresh water from rainwater, and water flows from the source. The large amount of water combined with the intricate river system creates conditions for water streams to weave throughout the delta. The rainy season is also the time when the Mekong Delta is susceptible to flooding in some low-lying areas. In the dry season, the delta lacks fresh water. At that time, the sea level rose and flooded deep into the delta, leading to salinity of the land. The combination of these natural factors has created ecological diversity in the Mekong Delta, creating biosphere reserves, national parks, and nature reserves with high biodiversity, such as: Ca Mau Cape National Park (Ca Mau province), U Minh Thuong (Kien Giang province), U Minh Ha (Ca Mau province), Tram Chim (Dong Thap province), Phu Quoc (Kien Giang province), Bac Lieu birds (Bac Lieu province), Dong Thap bird garden (Dong Thap province)... These are valuable resources for ecotourism development. Besides, the whole region also has more than 700 km of coastline and more than 145 large and small islands and many beautiful, pristine beaches: Mui Nai, Hon Chong (Kien Giang province); Hon Khoai (Ca Mau province); Ba Dong (Tra Vinh province).

In terms of population, population and ethnicity: According to statistics from the General Statistics Office, the population of the Mekong Delta in 2022 is 17,432 thousand people (accounting for 17.5. The people of the Mekong Delta are honest, quality people) very gentle, friendly and hospitable. These are the beautiful features of the culture, which are the factors that create attraction for tourism, leaving visitors with a very affectionate impression when coming to the river delta. The Mekong Delta is also a settlement area for many different ethnic groups, such as Kinh, Chinese, Khmer, Cham. The unique cultural features of each ethnic group have created diversity in culture culture of the people of the Mekong Delta.

Every year, hundreds of large and small festivals of ethnic groups are held, such as Ok Om Bok, Chol Chnam Thmay, Sen Dolta, etc. The Mekong Delta is the cradle of the Mekong Delta amateur folk music, “Cai Luong” art, shadow dance, rom vu dance, fishing festivals, worshipping My Long beach. Not only that, this place also has many historical and cultural relics and works architectural art, such as: Khmer Theravada Buddhist temples, or ancient Vietnamese houses.

Thus, it can be affirmed that the Mekong Delta is a land with rich tourism resources, with typical types of tourism such as garden, river, island, floating market, and cultural eco-tourism indigenization and spirituality.

In recent times, along with the country's trend of innovation and international integration, and to promote its inherent tourism potential, the Mekong Delta has strongly developed infrastructure to serve tourism needs service for tourism. In 2014 and 2015 respectively, the 5-star luxury resort Vinpearl Phu Quoc (Phu Quoc island district, Kien Giang province) and the 5-star Muong Thanh hotel (Can Tho city) came into operation. This is a mark of evaluating the development of tourism services in the Mekong Delta. At the same time, localities have increased the construction of new humanistic tourism resources to enrich existing tourism resources such as: investing in cable car projects, building the largest Maitreya Buddha statue on Cam Mountain, and building a statue of Maitreya Buddha on Cam Mountain. The largest Shakyamuni Buddha on Sam Mountain in An Giang; Bac Lieu province built a memorial area for late musician Cao Van Lau, Ba Non La Theater, Nha Mat tourist area... Besides, traffic issues are also focused. Also in 2014, Vietnam Airlines opened routes Phu Quoc - Singapore, and Phu Quoc - Siem Reap (Cambodia); VietJet opens direct flight Can Tho - Da Nang, Vasco cooperates with Vietravel to open direct flight Can Tho - Da Lat.

**3.3. Impact of climate change on the Mekong Delta**

Climate change is causing many negative impacts on the Mekong Delta, clearly shown through changes in climate indicators, such as temperature and rainfall; or extreme weather phenomena, such as storms, floods, land subsidence, sea erosion, river bank erosion, lack of fresh water, saltwater intrusion.

In the Mekong Delta, according to statistical data from 1980 to 2017, the average temperature in many years ranges from 23 - 28°C, the temperature tends to increase at an average rate of about 0.027°C/year; Rainfall has an unclear increasing - decreasing trend. (Hong, 2019) [4].

Statistics from the General Statistics Office of Vietnam, taking Ca Mau as the monitoring unit, also show that climate indicators have large fluctuations:

**Table 1:** Climate change indicators in Ca Mau province

Climate index	2006	2022
Average annual air temperature (°C)	27,6	27,8
Total rainfall (mm)	2387	2918,5
Air humidity (%)	83	78,67

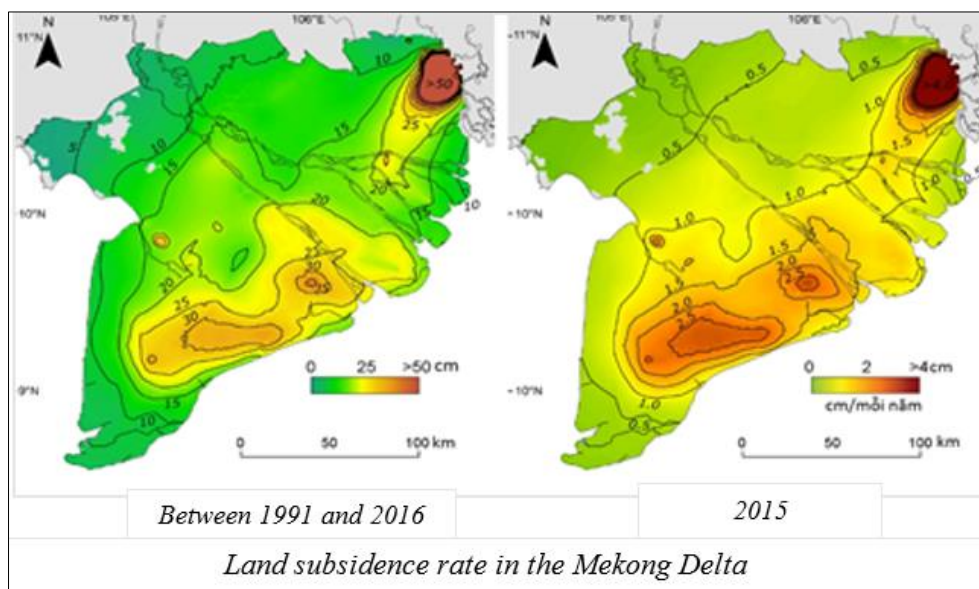
Resource: gov.vn

Climate change indicators in Ca Mau also partly reflect an increasing trend in temperature, an increase in total rainfall, but a decrease in air humidity. These climate indicators reflect climate extreme trends.

**Table 2:** Water levels of some main rivers divided by Station (Unit: cm)

Water levels in some main rivers	Highest		Lowest	
	2006	2022	2006	2022
Mekong River - Tan Chau Station	417	364	-34	-45
Mekong River - Chau Doc Station	371	334	-47	-45

Resource: gov.vn



**Fig 1**

Water level indicators at two monitoring stations show that water levels tend to decrease, both at the highest and lowest levels. Besides the water level index, an ongoing phenomenon in the Mekong Delta is the overexploitation of groundwater leading to quite obvious subsidence: the average

subsidence rate is about 0.96 cm/year. And if according to the forecast of the Ministry of Agriculture and Rural Development, if the sea level rises by 1 meter, about 70% of the land area in the Mekong Delta will be subject to saltwater intrusion; Many localities will be submerged in water, such

as: Ben Tre loses 1,131km<sup>2</sup> (more than 50% of the area), Long An loses 2,169km<sup>2</sup> (nearly 50%), Tra Vinh loses 1,021km<sup>2</sup> (nearly 46%), Soc Trang loses 1,425km<sup>2</sup> (nearly 44%).), Vinh Long lost 606km<sup>2</sup> (nearly 40%)... According

to this scenario, the time of flooding in the Mekong Delta could last from 4 to 5 months, 38% of the delta area would be submerged, 90% of the area would be submerged. The delta can be saline (Hanh, 2014) <sup>[3]</sup>.

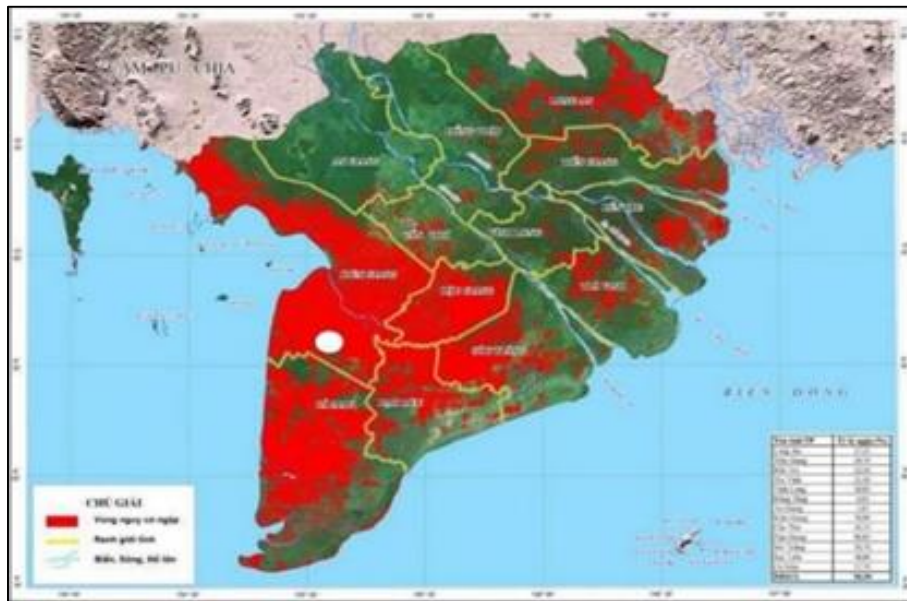
**Table 3:** Climate change scenarios in the Mekong Delta region

Scenario	Early 21st century		Mid-21st century		Late 21st century	
	Temperature	Amount of rain	Temperature	Amount of rain	Temperature	Amount of rain
RCP4.5 <sup>1</sup>	Increase 0,6 - 0,8 <sup>0</sup> C	Increase 4,4 - 22,4%	Increase 1,4 - 1,6 <sup>0</sup> C	Increase 5,8 - 20,6%	Increase 1,8 - 2,0 <sup>0</sup> C	Increase 9,6 - 23,8%
RCP8.5 <sup>2</sup>	Increase 0,7 - 0,9 <sup>0</sup> C	Increase 6,7 - 17,9%	Increase 1,7 - 2,1 <sup>0</sup> C	Increase 10,8 - 20,7%	Increase 3,3 - 3,5 <sup>0</sup> C	Increase 12,6 - 23,7%

Resource: Hong, 2019.

The above climate change scenario shows that: in both the RCP4.5 and RCP8.5 scenarios, temperature and precipitation indexes both increase from the beginning of the century to the end of the century.

Thus, climate change has been seriously affecting the Mekong Delta. Climate change will greatly affect the natural ecosystem, thereby affecting living and production activities, not excluding tourism development.



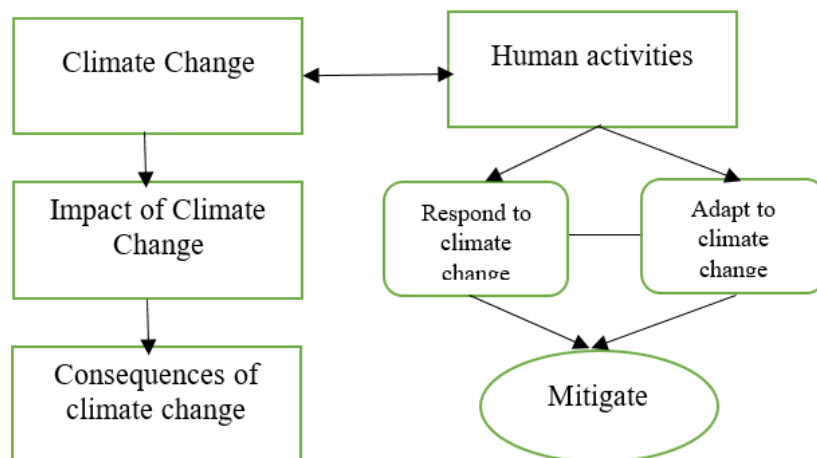
Source: Tran Thuc

**Fig 2:** Flood risk map of the Mekong Delta when sea level rises 100 cm

**3.4. Some recommendations for tourism development to adapt to climate change in the Mekong Delta**

Responding to climate change means we know how to handle

and react to the negative effects of climate; Adaptation means we learn to get used to new environments and know how to deal competently with new changes in the environment.



**Fig 3:** Diagram of the relationship between climate change and human response and adaptation activities

<sup>1</sup> RCP4.5: Medium-low stability scenario with radiative forcing not exceeding 4.5 Wm<sup>-2</sup> and stabilization after 2100.

<sup>2</sup> RCP8.5: high scenario with an increase in radiative forcing up to 8.5 Wm<sup>-2</sup> by 2100.

With the developments and scenarios of climate change in the Mekong Delta, and its consequences, the tourism industry will be directly affected, and face many difficulties and challenges. Therefore, there needs to be ways to respond and adapt to developments in climate change.

Firstly, conservation, exploitation and reasonable use of resources: Climate change is the cause of threats to tourism resources, especially natural tourism resources. Therefore, preserving and developing existing resources is to maintain sustainable development in tourism. However, conservation does not mean not exploiting and using. The problem is the exploitation and use of resources for tourism in a reasonable manner, without harming the risk of disrupting the balance of the natural system, without exceeding the threshold of affecting the ecosystem. It is the responsible exploitation of those involved in tourism, such as tourism workers, tourists. Second, encourage and promote sustainable forms of tourism development, environmentally friendly forms of tourism, such as garden tourism, agricultural tourism, spiritual tourism, culinary tourism, to support and reduce pressure on tourism that purely exploits natural resources. These forms of tourism are also strengths of the Mekong Delta.

Third, minimize waste discharge into the environment. Waste from production activities, human activities, and even waste from tourism activities are also factors that have a negative impact on the environment, on the ecosystem, affecting the health of the soil and water environment, etc. Climate change is warming the Earth, sea levels are rising, many areas of the Mekong Delta are suffering from alum contamination, salinity, flooding, etc. The natural environment is being negatively changed, so there should not be any more factors that are harmful to the environment.

Fourth, in places where tourism resources are exploited, managers need to calculate capacity in each tourist destination, set limits on the number of tourists to reduce pressure on tourist destinations, and keep the natural environment from being overloaded; Distribute tourists to different locations to avoid overcrowding. In localities at risk of serious impacts of climate change, such as flooding in Ca Mau, Kien Giang, Can Tho, etc., there needs to be a response such as building a dyke system to prevent floods; Plant protective forests to block waves and prevent erosion on coastlines, river banks, etc.

In addition, regulations on the exploitation and use of resources for tourism are introduced. At the state level, these are legal policies; At the local level, tourist attractions, etc. are the rules, regulations, instructions... for resource users to follow; Encourage energy saving; Use alternative energy such as solar energy, wind energy, etc. to save energy and reduce emissions into the environment; Respect the natural laws of tourism resources, avoid excessive intervention that affects the natural laws of resources. For example: do not block water flow, bend the flow... Propaganda and education to increase awareness of people and tourists about the environment and how to protect the environment; Shared management responsibility: close cooperation between the Government, tourism businesses and the community, to share responsibility for managing and protecting tourism resources; Strengthen international and regional cooperation to have consensus in environmental protection and response to climate change; At the same time, take advantage of learning and international help on responding and adapting to climate change in tourism.

Fifth, regarding infrastructure, increase the use of vehicles

and equipment that emit less CO<sub>2</sub> into the environment. For example: Instead of transporting tourists by car, it is possible to promote transportation by horse-drawn carriages (in eco-tourism areas), boats (under water), and cyclos (in urban areas). Urban. Accommodation facilities can promote the development of motels close to nature, such as farmstay (a type of accommodation including farms and resorts), bungalows (houses made from rattan material), bamboo, wood.

#### 4. Conclusion

Faced with growing challenges from climate change, responding and adapting in tourism development in the Mekong Delta is an urgent task; It is a warning bell to warn people against negative impacts on nature; It is also an opportunity to create a sustainable tourism model, deeply connected to culture and the environment.

Responding and adapting to climate change are ways of implementing measures to mitigate the consequences of climate change. However, these are measures that require synchronization, consensus, and joint efforts from everyone, from the participation of the Government to the people and tourism participants. With that consensus, Mekong Delta tourism will certainly maintain and promote its strengths to bring about a sustainable tourism industry.

#### References

1. ADB, Climate Change, 2012. <https://www.adb.org/sites/default/files/linked-documents/Linked-Document-1-Literature-Review.pdf>
2. Tran Van Chung, Bui Hong Long. The influence of temperature and unusual changes in water level in the East Sea related to climate change. *Journal of Marine Science and Technology*. 2016; 16(3):255-266.
3. Le Thi Hong Hanh, Truong Van Tuan. The impact of climate change on the natural ecosystem in the Mekong Delta. *Scientific magazine of Ho Chi Minh City University of Education*, 2014; 64:155-162.
4. Nguyen Van Hong, Phan Thi Anh Tho, Nguyen Thi Phong. Climate change and its impacts on sustainable development of the Mekong Delta coastal ecological sub-region. *Hydrometeorological Journal*, 2019, 11-19.
5. Nguyen Van Liem. Basic knowledge about climate change. Vietnam Environmental Resources and Map Publishing House, 2018.
6. Tran Thi Xuan Mai. Mekong Delta tourism: Potential and solutions for development. *Industry and trade magazine*, 2017. Accessed on July 11, 2017, at <https://tapchicongthuong.com.vn/bai-viet/du-lich-vung-dong-bang-song-cuu-long-tiem-nang-va-giai-phap-phat-trien-48421.htm>.
7. Muhammad Ishaq-ur Rahman, Climate Change: a Theoretical Review, *Interdisciplinary Description of Complex Systems*. 2013; 11(1):1-13, [https://www.researchgate.net/publication/269851189\\_Climate\\_Change\\_a\\_Theoretical\\_Review](https://www.researchgate.net/publication/269851189_Climate_Change_a_Theoretical_Review)
8. Phan Quang. Mekong Delta. Labor Publishing House, 2014.
9. Plamen Mishev, Milkana Mochurova, Impacts of Climate Change on Tourism, *Global Environmental Change: Challenges to Science and Society in Southeastern Europe*, 2008, 193-200, [https://www.researchgate.net/publication/226500268\\_Impacts\\_of\\_Climate\\_Change\\_on\\_Tourism](https://www.researchgate.net/publication/226500268_Impacts_of_Climate_Change_on_Tourism)

10. Samreen Siddiqui and Muhammad Imran. Impact of Climate Change on Tourism, Research Anthology on Environmental and Societal Impacts of Climate Change, 2018, 1519-1534, [https://www.researchgate.net/publication/357494471\\_Impact\\_of\\_Climate\\_Change\\_on\\_Tourism](https://www.researchgate.net/publication/357494471_Impact_of_Climate_Change_on_Tourism)
11. Ngo Luc Tai. The Mekong River or Mekong River with global climate change. Ho Chi Minh City General Publishing House, 2017.
12. Nguyen Quang Thuan, Ha Huy Ngoc, Pham Sy An. Solutions to adapt to climate change in the Mekong Delta in a new context. Vietnam Social Sciences Journal. 2019; (3):3-16.
13. Tran Van Thuong, Pham Van Ngoc, Dao Ngoc Hung. Manifestations of climate change and sea level rise in Tien Giang province in the period 1978 - 2015. Scientific magazine of Ho Chi Minh City University of Education. 2016; 9(87):188-200.
14. General Statistics Office of Vietnam, 2022, gov.vn.