

CZECH UNIVERSITY OF LIFE SCIENCES PRAGUE

Faculty of Economics and Management

Department of Management



Bachelor Thesis

Impact of natural disaster on tourism – flooding in Mekong

River Delta region

Author: Ngoc Quynh Nguyen

Supervisor: Ing. Richard Selby, Ph.D.

© 2021 CULS PRAGUE

BACHELOR THESIS ASSIGNMENT

Ngoc Quynh Nguyen

Economics and Management

Economics and Management

Thesis title

Impact of natural disaster on tourism – flooding in Mekong River Delta region

Objectives of thesis

Analyze the impact of flooding on the tourism industry in the Mekong Delta, thereby determining the fluctuations and triggers that affect the tourism of the Mekong Delta.

The analysis of data will be used to propose solutions as well as reasonable remedies, in order to bring tourism more efficiently to the region.

Methodology

The theoretical part of this thesis will comprise a review of current literature and will be a source of secondary data on the number of tourists, tourism revenue, and other data related to the research topic.

The practical part will be based on primary data to be gathered from questionnaire and structured interviews collected from accommodation managers about the impact of flooding on their businesses, on the local economy. The analysis of data will be used to propose solutions as well as reasonable remedies, in order to bring tourism efficiently to the region.

The proposed extent of the thesis

Approx 40-50 pages

Keywords

tourism, flooding, vietnam

Recommended information sources

Dvořáková J. (2007) The Prague floods of 2002, The Paper Conservator, Vol: 31 No: 1, 57-61, DOI: 10.1080/03094227.2007.9638654

Helmer, M., Hilhorst, DJM 2006, 'Natural disasters and climate change', Disasters, vol. 30, no. 1, pp. 1-4. <https://doi.org/10.1111/j.1467-9523.2006.00302.x>

Krasnozhan LO., Rothschild DM., (2010), Lessons from post-flood recovery of New Orleans and Prague, chapter in 'The Political Economy of Hurricane Katrina and Community Rebound', Chamlee-Wright E., Storr VH. [Eds], Cheltenham UK.: Edward Elgar Publishing Ltd., ISBN-13: 978-1848442382

Nguyen H.P., 'Advantages and Challenges For Tourism in the Mekong Delta, Vietnam', in International Journal of Scientific & Technology Research, Vol. 8, Issue 9, pp. 1364-1368. ISSN: 2277-8616. Accessed 07 March 2020.

Expected date of thesis defence

2020/21 SS – FEM

The Bachelor Thesis Supervisor

Ing. Richard Selby, Ph.D.

Supervising department

Department of Management

Electronic approval: 16. 2. 2021

prof. Ing. Ivana Tichá, Ph.D.

Head of department

Electronic approval: 17. 2. 2021

Ing. Martin Pelikán, Ph.D.

Dean

Prague on 18. 02. 2021

Declaration

I now declare that I have done this thesis entitled "Impact of natural disaster on tourism – flooding in Mekong River Delta region" independently. I have used only the sources mentioned at the end of the thesis. As the author of the bachelor thesis, I declare that the thesis does not break any person's copyright.

Ngoc Quynh Nguyen

Prague 12th March 2021

Acknowledgment

I want to send the sincerest thanks to my supervisor Ing. Richard Selby, Ph.D., for his assistance, guidance, support, and sincere advice during this thesis. I would also like to thank my dear family, my boyfriend, friends, and colleagues for supporting, encouraging, and motivating me throughout this challenging academic journey. That all helped me to complete the study abroad dream in the Czech Republic.

Impact of natural disaster on tourism – flooding in Mekong River Delta region

Abstract

Geographically located in the Lower Mekong region, the largest river in Southeast Asia, along with diverse and unique ecosystems, plus many incentives of nature, the Mekong River Delta is assessed as one of the seven specific tourist regions in Vietnam. One problem that has a significant impact on tourism here is flooding. Floods in the Mekong Delta river bring many benefits to the people in the area. However, floods also cause significant damage to people and property of the people here, affecting livelihoods and socio-economics activities, especially tourism.

This bachelor thesis aimed to explore the perceived flooding impact on tourism sectors such as economics and management. Thus, to determine whether floods have any significant impact or constraint on the Mekong River Delta region's economic and management aspects.

The selected study area on this topic at tourist sites in the Mekong River Delta region is Can Tho, Kien Giang, Ben Tre and, Tien Giang. These are the Mekong River Delta's key tourist destinations and attract many tourists every year.

Keywords: natural disaster, tourism, Vietnam, Mekong River Delta, flooding impact.

Dopad přírodní katastrofy na cestovní ruch - záplavy v oblasti delty řeky Mekong

Abstraktní

Geograficky umístěný v regionu Lower Mekong, největší řece v jihovýchodní Asii, spolu s rozmanitými a jedinečnými ekosystémy a mnoha přírodními podněty, je delta řeky Mekong hodnocena jako jedna ze sedmi specifických turistických oblastí ve Vietnamu. Jedním z problémů, které mají významný dopad na cestovní ruch, jsou záplavy. Povodně v řece Mekong Delta přinášejí lidem v této oblasti mnoho výhod. Povodně však také způsobují značné škody na lidech a majetku obyvatel zde, což má dopad na živobytí a sociálně-ekonomické aktivity, zejména na cestovní ruch.

Tato bakalářská práce si kladla za cíl prozkoumat vnímaný dopad povodní na odvětví cestovního ruchu, jako je ekonomika a management. Tudíž k určení, zda mají povodně nějaký významný dopad nebo omezení na ekonomické a správní aspekty oblasti delty řeky Mekong.

Vybranou studijní oblastí na toto téma na turistických místech v oblasti delty řeky Mekong jsou Can Tho, Kien Giang, Ben Tre a, Tien Giang. Jedná se o klíčové turistické destinace delty řeky Mekong a každoročně přitahují mnoho turistů.

Klíčová slova: přírodní katastrofa, cestovní ruch, Vietnam, delta řeky Mekong, dopad povodní.

Table of contents

1.	Introduction	12
2.	Objectives and Methodology	13
2.1	Objectives.....	13
2.2	Methodology.....	13
3.	Theoretical part	15
3.1	The tourism industry: flooding impacts and recored situations	15
3.1.1	Flooding impacts on tourism industry.....	15
3.1.2	Recored situations	18
3.2	Challenges from flooding impacts on the tourism industry and tourism accommodation sector	20
3.2.1	Economic point	20
3.2.2	Management point.....	21
3.3	River tourism development	24
3.4	Flood management, measures and the adaptation of the tourism accommodation sector	25
3.4.1	From tourist accommodation managers	25
3.4.2	From the local and municipal, central governments	28
3.5	Likert scale	30
4.	Practical part	31
4.1	Selecting the study area	31
4.1.1	Selected regions	31
4.2	Perspectives and the perception of floods by tourist accommodation managers.....	33
4.3	The potential for water tourism development in the Mekong Delta region .	37
4.3.1	Definition and features	37
4.3.2	Rate of tourism development through the numbers	38

4.4	The impact of floods on tourist accommodation.....	40
4.4.1	Bookings and rates	40
4.4.2	Tourist length of stay.....	43
4.5	Adaptation measures and the responsibility of tourist accommodation and local managers	47
4.5.1	Advantage and challenges for tourist accommodations and responsibility of flood risk management.....	47
4.5.2	Adaptation measures from tourist accommodation manager	49
4.5.3	The impact of floods on the surrounding local communities and solutions of local and municipal governments.....	50
5.	Discussion and proposals	55
5.1	Discussion	55
5.2	Proposing flood management solutions.....	56
6.	Conclusion.....	57
7.	References	58
8.	Appendix	66

List of tables

Table 1: Financial costs incurred when floods affect	20
Table 2: Adaptation measures for tourism accommodation.....	27
Table 3: Adaptation measures of local and municipal governments.....	30
Table 4: Likert scale variations measures	31

List of figures

Figure 1: Selected regions	32
Figure 2: Flood Frequency Scale	33
Figure 3: Total visitors to the Mekong River Delta region from 2016-2019	39
Figure 4: Tourism revenue in the Mekong River Delta from 2016-2019	40
Figure 5: The scale of effect on accommodation bookings and rates	41
Figure 6: Number of tourists in the flood season	42
Figure 7: Tourist accommodation managers handle the room rates.....	43
Figure 8: The impact of floods on tourist length of stays during flood season.....	45
Figure 9: The responsibilities of flood risk management.....	48

1. Introduction

Floods often cause severe consequences for people and the development of each nation. However, there are positive aspects that it brings to many other industries. Can the tourism industry be developed based on the flood element? Indeed this hypothesis looks pretty skeptical. Nevertheless, there are concrete evidence and developments which are very surprising and convincing.

In addition to being famous as fertile land, with one of the most developed tourism industries in Vietnam, the Mekong River Delta also has a familiar and dear name as "the land of the west and the rich river." Referring to this nickname, everyone will probably think that the Mekong River Delta is a region mainly composed of water and river. Indeed, nature has given here natural elements to develop tourism quickly and effectively. Tourism develops so that the material life of local people is also enhanced. Thanks to tourists' attraction, more and more accommodation facilities such as hotels, resorts, and homestays are invested and developed in the Mekong River Delta, providing job opportunities for many workers.

However, along with the rapidly increasing level of human industrialization and development, climate change is a hot issue and has a significant impact on tourism development. Many of the negative impacts of flooding on tourism have been recorded around the world. As one of the specific destinations of river tourism, the Mekong River Delta tourism industry in general and tourist accommodation establishments here, in particular, have been affected both positively and negatively by floods. The data, as well as the recorded information of the survey in this thesis, will provide a more general and detailed overview of how floods impact tourist accommodation business activities in the Mekong River Delta, as well as flood management and adaptation measures of tourist accommodations and the local and municipal, central governments. The survey focused on giving questions mainly on tourist accommodation managers in four cities: Can Tho, Kien Giang, Ben Tre, and Tien Giang.

2. Objectives and Methodology

2.1 Objectives

This thesis's main objective is to analyze the impact of flooding on the Mekong River Delta region's tourism, thereby determining the fluctuations and triggers that affect the Mekong River Delta's tourism and assessing the tourist's management situation accommodation sector. Collect data on tourism revenue and annual tourist arrivals to the Mekong River Delta based on that general analysis of tourism development speed. Finally, propose some more suitable solutions and remedies reasonably to bring tourism efficiently to the region.

2.2 Methodology

This Bachelor thesis used qualitative and quantitative data collection methods that included structured interviews through an online survey and telephonic conversations; referred to the theory from online books, literature sources, and websites to apply in theoretical and practical parts. The Likert scale chart was referred to and used to synthesize and analyze information and data from the survey responses.

The practical part will be based on primary data gathered from 51 tourist accommodation managers in selected study areas about the impact of flooding on their businesses and local tourism. The online survey mainly focused on Can Tho, Kien Giang, Ben Tre, and Tien Giang cities to explore the perceived flooding impact on tourist accommodation in those regions, particularly the Mekong River Delta in general. Due to the low response rate, 51 tourist accommodation businesses across the study regions were approached to participate in the survey. From there, 51 tourist accommodation managers participated in the survey by answering structured interview questionnaires and telephonic conversations, including multiple-choice and essay questions that could collect more answers and opinions from tourist accommodation managers.

Data analysis will analyze the secondary data like the number of total tourist arrivals, tourism revenue, and the primary data, which is the answers from online questionnaires, and telephonic conversations. This approach involved sorting and organizing data into separate categories, collected data, calculate the percentage of choices through the synthesis charts. Thereby recommending appropriate adaptation measures, such as maintaining and developing tourism strength in the region, besides recognizing weakness that was affected by the impact factor to improve and handle better.

3. Theoretical part

3.1 The tourism industry: flooding impacts and recored situations

3.1.1 Flooding impacts on tourism industry

The tourism industry immensely plays a significant role in the economic development of each country. Along with the development and progress of humanity, tourism is always one of the essential human needs. It is defined as one of the most economically viable sectors globally, as it counted for 10.3% of the world's gross domestic product (GDP) in 2019 (Leonard et al, 2021, Theme 3, Chapter 9).

One article state that climate change will not only be manifested through slow changes in average climatic conditions over a long period of time; it will bring about a series of extreme phenomena such as droughts, floods, and heat waves that we must prepare for (Helmer, Hilhorst, 2006, p. 1). Flood is also on the list of three extreme phenomena that can significantly affect human life and the tourism industry.

Floods are natural disasters that have a serious impact on domestic and international tourism and affect local tourism (Sunlu, 2003, p. 267). When the local tourism industry is affected, certainly, tourism businesses from large to small will also encounter difficulties and challenges. Floods bring negative consequences on the environment and weather and generated many difficulties and disorders for tourism businesses, tiny tourism businesses whose scale is not large. (Bernard, Cook, 2014, p. 308).

More specifically, flooding also affected the geographical setting, landscape, activities, and attractions of the tourism accommodation sector (Southon, 2018, p. 3). Furthermore, floods have adverse impacts on the social system, the natural system, or the built

environment (Merz et al., 2010, p. 509). With the current climate change situation, it is defined as one of many important processes affecting future flood risk (Merz et al., 2010, p. 514). Flooding is also considered one of the extreme events related to rainfall and is of greater concern, especially in the short term. The occurrence of intense flooding can lead to closing down a tourist site during that time and can also lead to lasting damage.

Storms and heavy rains are increasingly damaging tourism in South Africa. The tourist accommodations are located near the beach and the eastern half of the country, so they are affected by tropical cyclones. The floods have prevented access to tourist destinations and blocked tourism in Nigeria, the Okavango Plain in Botswana, and the Limpopo Province and South Coast of South Africa (Hoogendoorn, Fitchett, 2016, p. 8). Many tourist destinations both coastal and inland, have been exposed to natural disasters such as flooding (Ghaderi et al., 2014, p. 400). From the negative effect and bad climate change situations, it is predicted that by 2050, the global tourism sector will experience substantial climate change impacts, with fluctuations in tourist numbers as tourists opt for better-suited locations (Fitchett et al., 2016).

For example, tourists will be more likely to choose tourist destinations that are not be affected by flooding or under bad weather. Therefore, there will be damage or negative consequences that flood-affected areas will experience, such as a loss in the tourist accommodation business, a decrease in the tourist number mentioned above, infrastructure damages, so incur additional costs for recovery and repair. Perceptions of flooding impacts are based on local tourist accommodation managers' personal and objective perspectives and higher-level managers in the tourist destinations where they live and work (Wyss et al., 2014, p. 1-6).

According to the national tourism agency in England, flooding has been deemed a danger that can disrupt normal tourism activities. It can lead to serious events that impact tourism businesses directly and interrupt their business activity whilst they have to handle the damage. Furthermore, the attractiveness of a tourist destination can be affected by flooding when it damages the public infrastructure. These negative impacts can significantly

affect tourists' perceptions of their personal safety, access, accommodation availability, and the disruption to their travel plans (VisitBritain, 2021).

The tourism industry is believed to be highly vulnerable to natural disasters such as floods because the income and profits are entirely dependent on its ability to attract tourists. Not only are small-scale tourist accommodation establishments affected, but large-scale hotels and tourism businesses suffer much more in terms of infrastructure, especially when the local government is unable to remedy and repair such damages effectively. These effects can be summarized as follows:

- The demolition and reconstruction of roads and bridges obstructs and makes it difficult for tourists to access tourist accommodation, tourist sites they intend to go to; this can lead to loss of business.
- The disadvantage of tourism is the absence of direct compensation from the government for damages caused by natural disasters. Meanwhile, some other industries obviously received such damages.
- Coverage for additional insurance costs is also one of the certain disadvantages of tourist accommodation establishments. Not only are they not fully reimbursed for the damage caused by the disaster, but they also have to pay an additional fee to the insurer. The reason for the premium is the high degree of risk that natural disasters occur to them. As a result, many accommodation establishments have had to stop their businesses because they cannot afford to maintain operations and pay for other expenses such as repairs and upgrades.

However, the tourism industry is believed to remain resilient to economic recovery after the floods. It is a good foundation and sufficient funds to withstand floods and natural disasters. Even so, with climate change likely to worsen, tourism's resilience is expected to decline systematically and, worse, likely to collapse (Hoogendoorn, Fitchett, 2016, p. 6-7).

3.1.2 *Recorded situations*

Flooding impacts on the tourism industry, especially the tourism accommodation sector not happened in a few places, but it had a global impact from different times (Arnell, Gosling, 2014, p. 391-398). The 21st century has already witnessed several destructive floods with many disastrous flood events in Europe (Kundzewicz et al., 2012, p. 2). Flooding had affected the number of visitors to the Arquis Querquennis Complex in Spain from 2011 to 2018; the number of visitors is high or not depends on the flood level, with the fact that the months in the highest number of visitors correspond to the lowest level of water in the reservoir, so the floods had significantly reduced the number of tourists in the months with a high level of water (Vila et al., 2019, p. 5-12).

Several floods that happened from 1997 to 2010 in the Czech Republic brought much damage to people, tourism, and the economy of the Czech Republic; especially a flood in August 2002 affected the western part of the Czech Republic and claimed 19 victims with material damage estimated at approximately 73 billion Czech crowns (~2.35 billion USD) (Brázdil et al., 2012, p. 1). This flood is said to be unprecedented 500 years ago. It has affected the entire Vltava river basin, one of the most beautiful tourist attractions in Prague's capital city. Many libraries and museums have been affected. In response to this flood disaster, national bodies had to set up a consultation center for flood-affected agencies that included dissemination and guidance via the internet, pamphlets, and word of mouth (Dvořáková, 2010, p. 57-61). It even reduced the visitor numbers by one-third with the cancellation of 30 000 reservations for national airline flights (Southon, 2017, p. 3).

Flooding in Prague in 2002 has damaged many important businesses in the tourism industry of Prague, such as retail shops, bars, restaurants, and clubs. These are all important places of the tourism industry and bring many economic benefits to the locality and the state. Other tourist attractions, such as the National Museum, the National Gallery, the Jewish quarter, the Kampa Museum and the Trója Zoo, and other historic buildings, were closed through September. In addition to the damage mentioned above, the Prague tourism industry also suffered from a severe tourist drop; In July 2002, there were 250913 tourists to Prague, by August 2002, that number had dropped to 185724 and dropped to 127792 by December

2002, which was the lowest number on record during the Christmas season in Prague. As a result, tourism revenue decreased significantly (Krasnozhon, Rothschild, 2010, p. 148-149).

Climate change in Africa caused excessive rains and flooding and reduced tourists' arrivals in Kenya and Tanzania; flooding and severe rainfall also disrupted tourism activities as infrastructure is destroyed, with many tourism resorts across Africa becoming inaccessible (Dube et al., 2019, p.2027).

The Kota Tinggi flood in December 2006 and January 2017 in Malaysia caused heavy damages for the local tourism like dropped almost 90% from usual tourist arrival, the cancellation of tourist visits and hotel reservations brought negative impacts to the travel agency, the resort businesses; accommodation tourism sector had a 90% decline in occupancy rate, causing all major operators to suffer from huge losses (Jusoh et al., 2012, p. 27-29).

Many countries in Asia have also suffered from floods, especially in 2011, when the Asian Summer Monsoon has been the worst in decades, causing significant floods in Thailand, Cambodia, the Philippines, and Vietnam; the floods caused over 700 deaths and impacted more than eight million peoples. Domestic tourism in Thailand has dropped by 30% since the floods started. Floods that plagued Cambodia in 2011 have caused a lot of business loss for affected tourism destinations; tourists stocked in the tourist destination because of flooding, festivals are canceled, causing economic and tourism damage to the country. The Philippines was a different case in 2011 when the flooding has impacted agricultural land areas not typically visited by tourists. The result showed that tourism in this country is not likely to be significantly impacted by floods. Another different and exceptional case belongs to Vietnam when this country has tried to embrace the flood tourism at that time in 2011; because the water has tended to be calm and receded so the tourism industry has capitalized on the annual floods; it was only likely to have a minor impact on tourist arrivals (EuroMonitor, 2011).

3.2 Challenges from flooding impacts on the tourism industry and tourism accommodation sector

3.2.1 Economic point

The main economic point here focuses on the increase and decrease in tourism revenue over the years. How is the change in the number of tourists in an area in the flood season and the non-flood season.

Aside from the nature and severity of the threat posed by natural disasters, the tourism industry's financial strength is the potential to successfully and sustainably adapt to the threats of climate change to tourism. Since climate change threats are rarely isolated, it is considered one of the greatest difficulties in adapting to each climate change threat. A concrete example can be seen that a tourism destination threatened by sea-level rise may also face challenges related to changes in rainfall and rising temperatures (Fitchett, Hoogendoorn, 2016, p. 10).

In addition to human and personal, and municipal infrastructure damage, local businesses which were interviewed in Africa also believe that flooding also has a series of impacts on the tourism industry, such as financial costs incurred in the short, medium, and long term during and after the flood; the number of bookings decreased due to tourists' perception of flooding at the tourist destination they intend to visit. The financial costs incurred are divided into 3 categories according to the table below. Each type of these financial costs is defined and illustrated with specific examples (Hoogendoorn, Fitchett, 2016, p. 2-6).

Table 1: Financial costs incurred when floods affect

	Short-term costs	Medium-term costs	Long-term costs
Definition	Expenses incurred for a short period of time and within 24 hours after the floods.	Expenses incurred for one month for one month after the flood occurred.	Expenses incurred for one or more than one year after the flood occurred.

Example	Infrastructure damage.	Business losses in both private and municipal infrastructure reconstruction phase.	Loss of income due to over one- month closing.
	Loss of personal belongings arising in the direct response to floods. → These costs are borne by individual accommodation establishments because of the damage that happened to their infrastructure.	Costs incurred by having to stay elsewhere during infrastructure repairs and rising costs to get food and fresh water in the area while city repair works are underway.	Changes in insurance premium due to increased flood risk probabilities.
	Costs related to the damage to infrastructure of the local municipalities: damage to bridges, water pipes, substations and power lines, and sewerage and sanitation networks.	Costs of repairing all vehicles, generators, geysers, refrigerators and air conditioners, structural damage to the building's infrastructure.	
	Loss of tourism revenue due to lack of tourists during floods.	Additional medium-term cost: cost incurred due to the need to clean the area after floods such as hiring cleaning workers.	

(Fitchett, Hoogendoorn, 2016) – edited by author

3.2.2 Management point

The management point in this thesis focuses on how the tourist accommodation managers handle the situation during flood season and other times. On the other hand, the manager, the government regulators' perception of flooding and preventive measures, and the management plan they handle.

The difference in perceptions among tourists and tourism operators on climate change on the African continent is believed to be a concern for the sustainability of the tourism industry. It seems that tourism operators have been somewhat subjective in assuming that tourists are not very interested in and really consider climate change. This can lead to a decrease in the number of tourists. Of course, at the current rate of development, people will pay more and more attention to climate change. Travel demand is one of the essential needs for everyone, which is why tourists tend to go to tourism operator locations that are more

fully equipped with tourism services that focus on environmental protection due to climate change, especially those tourism operators that consider their ecological footprint (Hoogendoorn, Fitchett, 2016, p. 12).

Typically, the establishment and development of green tourist accommodations, such as the Ecobnb booking website, offers many environmental protection services for tourists. With the current climate change situation, each of us, when traveling, must think of our footprints. Travel operators like Ecobnb bring customers to ecological hotel booking through Ecobnb, conscious shopping, eating in local and organic restaurants, holiday experiences at green hotels. Starting with such small steps, both the tour operator and the tourist have contributed to protecting the environment and minimizing climate change's harmful effects. If such management plans are focused on exploiting and developing more, the planet will be increasingly protected, and people will also suffer less from the consequences caused by natural disasters (Mecialova, 2018).

Infrastructure repair, reconstruction, and dyke building

Tourism accommodation's adaptation strategies are often applied both before and after a flood occurs. These strategies are explored to determine the effect of direct damage in providing more proactive adaptation approaches. Faced with the damage caused by the floods, proactive responses from a tourist accommodation's perspective are perceived to be truly necessary instead of relying on the resilience of the municipality's infrastructure. Preventive measures are emphasized as a necessity rather than adaptive and responsive measures as tourist accommodation has to deal with infrastructure rebuilding and costs incurred without insurance support.

Hostels and tourist accommodation in South Africa often have measures that focus on improvements to facilities such as building thicker walls, repairing, constructing, and disposing of additional outdoor facilities to reduce the risk of flooding, and improving the structural integrity of tourist accommodation facilities. Some tourist accommodation and motels located near rivers use flood protection dykes, which is to place sandbags along the rivers and across the motels' boundaries. Tourist accommodations located along the river

canals choose to relocate their buildings to a safer distance in the event of a flood (Fitchett, Hoogendoorn, 2016, p. 5).

Adaptation on human safety

Besides, several other tourist accommodation establishments in South Africa have adaptive measures that focus on people's safety, especially the safety of their staff and tourists. Their adaptation measures include developing and implementing clear evacuation plans. More in-depth, accommodation facilities also prepare backup for diesel generators and rechargeable batteries to prevent power outages during floods; install spare drill holes to prevent water shortages and water loss in the future if the city's infrastructure fails. Participating in local organizations that aim to understand the situation and respond to floods is also a beneficial and practical action that tourist accommodation establishments should consult and apply. By enrolling in such organizations, tourist accommodation managers receive the most effective relief services before, during, and after a flood occurs; Besides, they receive the first flood emergency warnings and easily evacuate people and prevent damage to facilities. After a flood occurred, local organizations also took rapid action, such as constructing temporary roads and liaising with transport and ambulance to ensure the safe evacuation of people trapped by the flood (Fitchett, Hoogendoorn, 2016, p. 5)

The political, institutional, and financial architecture are also seen as barriers that have hindered efforts to develop communities on climate change and natural disasters. An example of the cause of flooding in the Philippines also clarifies that the focus on sea-level rise related to global climate change has been put in place to mask political attention. The overexploitation of groundwater that is lowering the government's land surface is the main cause of flooding in the country (Helmer et al., 2006, p. 2-3).

Therefore, disaster management will reduce vulnerability more, and this is more urgent than ever. It will increase people's capacity, resilience, and adaptation to climate change as the frequency and extent of the devastation caused by natural disasters increases. Community-based approaches get more attention when a locality is affected by a disaster. Climate change non-governmental also have an important role to play as they use their

experience to plan, design, and implement local adaptation strategies. The study of climate change-related disasters is emphasized as the need for improvement. Multilateral approaches to climate change-related natural disasters are discussed and outlined as follows:

- Better coordination between development communities on climate change and natural disasters
- Greenhouse gas mitigation and climate change-related risks need equal attention, including strengthening disaster management.
- Improve methods related to understanding, approaches, and local disaster response while simultaneously addressing underlying complex and partly global processes (Helmer et al., 2006, p. 2-3).

3.3 River tourism development

Water always plays an important role in all aspects of human life. Water tourism is derived from the development of rivers and is also derived from water. For example, the power and image of many different civilizations, for example, the development of river tourism, is intrinsically linked to the successful exploitation of water resources (Henriques, 2010, p. 2).

Tourism is a range of human activities which have always been linked very closely to the rivers. So much evidence shows that a lot of the land affected by flooding has certain advantages, or that the floods bring production and tourism in the area to be more developed and richer, such as favorable for rice cultivation, dividing walls with salt production, and fish farming (separated by water salinity level), attracting the interest and curiosity of tourists. However, there must still be protective measures such as building dykes and dams in case of danger (Henriques, 2010, p. 3).

Many great rivers in the world have actually brought splendid developments to many regions that are now famous tourist destinations, including the Indus, Nile, Tigris, Euphrates,

Mekong, Rhine, Danube, Yangzi, and Yellow rivers. In the modern world, they continue to be closely associated with great cities and, in the contemporary era, have become a significant tourism resource. With the urban-development, rural, and other less-developed regions, rivers have retained their natural characteristics, creating interest in rivers as ecotourism and nature-based resources (Prideaux et al., 2009, p. 1).

Thanks to the development and the rich ecosystems around rivers, river tourism has really developed. Nevertheless, there will be special factors that significantly influence the maintenance nourishment of those rivers. That is why flooding is defined as a key element in river ecosystem maintenance and facilitates the deposition of sediments and nutrients that support plant communities in river flood plains. On the other hand, flooding may replenish groundwater structures that support plant communities during the year's remainder (Prideaux et al., 2009, p. 11).

The Greater Mekong Subregion (GMS) (including Vietnam, Laos PDR, Thailand, Cambodia, Myanmar, and Yunnan province) is seen as the area to be exploited and developed new tourism region of the Mekong River. Thanks to its rich ecosystem, historical, and natural resources, river tourism is considered to have extremely potential for development. When rivers are the main source of supply for the population and the development of tourism, people's lives will be much improved, facilitative to income and employment generation for the local people, from where it can contribute to the economic development of the region. In 2003, GMS tourism resources attracted about 17 million international tourists and around \$10 billion in receipts (Laws, Psemone, 2009, p. 55-61).

3.4 Flood management, measures and the adaptation of the tourism accommodation sector

3.4.1 From tourist accommodation managers

The tourist accommodation business management will be divided into two different aspects: the first one is when there is in the non-flood season, and the second one is in the flood season. Of course, these two aspects will be different and also have separate points. When there is no flooding, hotels, motels, and homestays can still maintain their operation

and management methods. However, when flooding occurs during the tourist season, which can be moderate or dangerous, tourist accommodation managers will have to develop specific preventive and remedial measures more effectively! For example, changing room rates, updating and reporting, assessing the weather conditions of an ongoing tourist site, providing medium and high flood protection options while supporting tourists to keep them safe and enjoy their stay, while also preserving tourist accommodation's reputation and responsibility.

Changing management practices in South Africa's tourist accommodations when facing the negative effects of climate change is a fairly practical example. Tourist accommodations on the South Coast of South Africa were diversifying their beachfront service by providing board games and satellite television for rainy days. On the days under the bad weather condition without tour operators' involvement, tourists can often look for alternative activities such as finding nearby museums and game farms to visit. While these interim measures can be applied during typhoons or floods, prolonged periods of poor climatic conditions would likely reduce tourist arrivals. Tourists can accept a change of their trip plans for a few days, but it cannot last for too long.

The allocation of responsibilities in response to natural disasters such as floods and climate change is also an important issue. It is seen as a challenge for the tourism industry to adapt to climate change successfully. The Governments are considered responsible for ensuring adequate adaptation to climate change threats, for example, in Botswana and South Africa. Tourist accommodation managers will receive warnings about any threats from natural disasters or bad weather that could affect their business and tourists. Thanks to the combination of climate forecasts and economic models, it is possible to make predictions viability of a tourism destination based on climate change. From there, it can be seen that the support from the government in disaster management and response is essential and meaningful to tourist accommodation establishments. They can have access and handle more quickly and efficiently when a natural disaster strikes (Fitchett, Hoogendoorn, 2016, p. 8-11).

Synthesis of adaptation measures

Table 2: Adaptation measures for tourism accommodation

<p>Assessing the situation</p>	<p>Be affected directly or indirectly (business is still possible or is completely inoperable)</p> <p>Access to local sources of information on flood impacts (traffic conditions, travel agencies, ...)</p>
<p>Working with others</p>	<p>Liaise, work with and support local tourist accommodation establishments, local tourism organizations (both keeping up with the situation, information, and timely plans)</p>
<p>Keep close contact with customers</p>	<p>Keep in touch with customers (provide tourists with all necessary, timely, and safe information for their trip: weather, traffic, activity at the property), ensure make everything as clear, authentic, and positive as possible.</p>
<p>Cancelations and Refunds</p>	<p>This may lead to compensation for the customer. Therefore, it is essential to plan, timely notify and prepare alternative handling methods (helping customers choose other alternatives).</p> <p>If a customer cancels a booking though the operating conditions of the accommodation during floods are still at a safe level, the operator should consider whether or not to apply a cancellation fee, in conjunction with Consult with other local institutions and local tourism authorities' laws.</p> <p>Provides the customer with a cancellation policy when floods occur when a customer makes a new booking.</p>
<p>Consider the future impact on your business</p>	<p>Carefully consider the need for advertising and promotions (to save businesses' costs and use them more effectively at appropriate times).</p> <p>Promote the property's image as a safe destination by working with local tourism and trade associations. There is no need to apply too high discounts. Instead, apply value-added incentives (2 for 1, 3 for 2, and more ...).</p> <p>Make business products more appealing to reassure customers and attract the next tourists: relocate tours out of a flooded area, emphasizing the most reasonable amenities when floods occur, changing the program to greet customers most realistically.</p>

Returning to normal	<p>Update your business website when everything is back to normal after the flood.</p> <p>Thanks for the support of visitors, and ready to welcome them with their next support.</p> <p>Consider tourist accommodation's marketing activities: focus on local products and customs, engage in other local area recovery activities.</p> <p>Provides regular media newsletters, advertises credible stories, distribute fact sheets, encouraging high-profile visitors.</p>
---------------------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

Source: (VisitBritain) – edited by author

3.4.2 From the local and municipal, central governments

From a local level of management, flood adaptation and flood risk management will focus on preventive measures, flood risk prevention, flood defense, flood risk mitigation, flood preparation, and flood recovery. These preventive and protective measures primarily focus on reducing the risk of flooding, the dangers to humans, the environment, and society (Hegger et al., 2016, p. 2).

These things also influence tourism, so taking these precautions greatly protects tourism and the tourism industry.

Governments at different levels are known for the key actors responsible for their construction, financing, and maintenance. Whilst food risk mitigation is developed and implemented on a local or regional level. Flood preparation is implemented by taken in advance to ensure an effective emergency response. Flood preparation methods are often tooling to warn, forecast, disseminate warnings to subordinates, localities, and respond to requests from end-users to capture more of the situation. There will be emergency organizations and services in an emergency and high risk to take any action and are responsible for evacuation, providing maximum safety (Dieperink et al., 2016, p. 4473-4475).

Based on the lesson from Prague's post-flood recovery, rapid recovery after disasters is a critical part of disaster management everywhere in the world. Although it was severely affected by the flooding, the Prague government, businesses, and residents cooperated and brought a rapid recovery to Prague. After two months of flooding, Prague's tourist attractions have been reopened with little evidence of damage. The public transport system - one of the strengths of tourism here has quickly returned to normal operation within three months. Their government has focused on providing goods and restoring confidence in public order, while private agencies have focused on rehabilitation at the local levels (Krasnozhan, Rothschild, 2010, p. 143-152).

The millennium floods have hit the economy of Prague and its most important historical downtown. Since the historical center of Prague serves as the main tourist attraction and the central business district, its rapid recovery was crucial for revitalizing Prague's economy. The key to effective response and recovery by the city of Prague is attributed to the government's efforts to increase people's trust and overcome the disaster's psychological effects (Krasnozhan, Rothschild, 2010, p. 143-152).

Local managers' responsibilities for flood protection are considered essential and important by tourist accommodation managers. Of course, each small to large management party must have its own responsibility to help that locality prevent and overcome the consequences of floods in the best way. Nevertheless, local government's long-term adaptation measures and plans really have a large impact on improving flooding.

Adaptation measures that tourist accommodation managers deem necessary and need improvement on the city and local government management focused on bridge repairs, power supply problems, water resources, rebuilding infrastructure, and improving communication. People in the face of disasters really need nothing more than electricity, water, and shelter to survive. Besides providing tourism facilities with such essentials, ensuring connectivity in communications is also a pretty important means of giving people and business owners warnings. Accurate risks so that they can promptly respond and grasp government evacuation plans in the fastest and safest way. These are all essential and most

important issues that need to be closely implemented and improved by local and municipal government regulators to provide safety and peace of mind for residents, tourists, and accommodation establishments, and tourist businesses when floods occur (Hoogendoorn, Fitchett, 2016, p. 5-6)

Synthesis of adaptation measures

Table 3: Adaptation measures of local and municipal governments

Support for tourism business	<p>Providing support packages for tourism businesses affected by floods to help the local tourism industry recover quickly.</p> <p>Ensure timely emergency assistance from police, fire and rescue parties, and the national park authority.</p> <p>Encourage larger businesses to support smaller businesses.</p>
Infrastructure and flood defense	Assess, evaluate and repair the damaged infrastructure such as local highways, bridges, and apply the local flood prevention system.
National Flood Forum	Additional support is provided through national agencies and charities such as the national flood forum and the environment agency.

Source: (VisitBritain) – edited by author

3.5 Likert scale

The Likert scale is defined as a five to seven-point scale. Likert scale can measure all the variations such as frequency, importance, likelihood, etc.... (McLeod, 2019)

Table 4: Likert scale variations measures

Frequency	Importance	Likelihood	Likelihood
Always	Very important	Almost Always True	Definitely
Often	Important	Usually True	Probably
Sometimes	Moderately	Occasionally True	Possibly
Rarely	Slightly important	Usually Not True	Probably Not
Never	Unimportant	Almost Never True	Definitely Not

Source: (McLeod, 2019) – edited by author

Data from a Likert scale can be analyzed by summarizing then displaying the distribution of observations in a bar chart. The Likert scale's strength is that it allows for degrees of opinion and even no opinion at all. After that, quantitative data is obtained and analyzed with relative ease (McLeod, 2019).

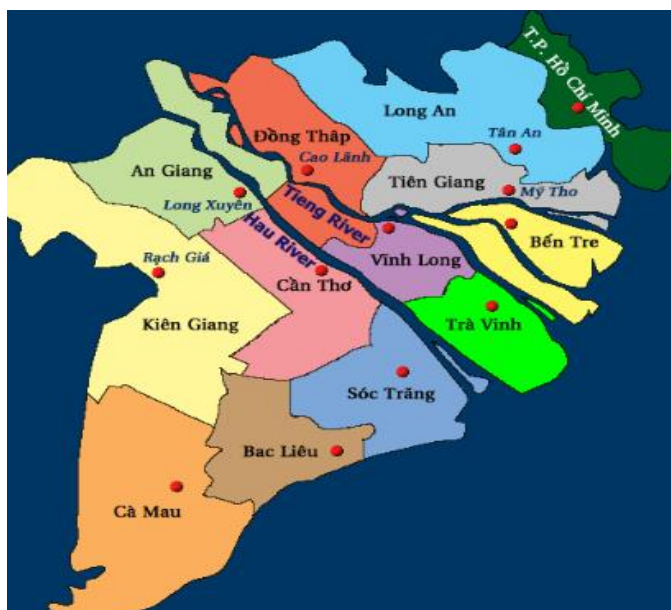
4. Practical part

4.1 Selecting the study area

4.1.1 Selected regions

The study area is selected on this topic at tourist sites in the Mekong Delta region such as Can Tho, Kien Giang, Ben Tre, Tien Giang. These are places where projects are concentrated and a large number of domestic and foreign tourists when traveling to the Mekong Delta region.

Figure 1: Selected regions



Source: <https://www.vntrip.vn/cam-nang/ban-do-mien-tay-nam-bo-26681>

Four selected cities are marked color as the map above. Can Tho city (marked in pink) and Kien Giang province (marked in light yellow) be contiguous, of which Can Tho city is located in the center of the Mekong Delta region, the lower part borders with Kien Giang province in the West. Ben Tre (marked in yellow) and Tien Giang (marked in grey) are located in the north of the Mekong Delta. The southern part of Tien Giang province borders with Ben Tre province.

In August or September (lunar calendar) every year, water from the Mekong River's upstream rapidly runs to this place with lightning speed. Water runs to An Giang (light green on Figure 1), Dong Thap (marked in orange) first, then run down the Mekong Delta provinces such as Tien Giang, Vinh Long, Can Tho, Kien Giang... (Far East Tour, 2016)

In particular, two of the four selected cities, Can Tho and Kien Giang, are located in the Mekong Delta's Focal Economic Region, located at the southernmost tip of the country. The selected region is also the region with the most developed tourism background in the Mekong Delta, located in the central tourist clusters with its types of tourism and key tourism products. Can Tho is known as the Mekong River Delta's political, economic, cultural, and transportation center. Besides, Kien Giang province is favored by nature with so many

landscapes, beautiful sites, and a favorable climate with fewer natural disasters, which is quite abundant for living and production (TRAVEL VIETNAM)

The third selected city – Ben Tre, is one of the most characteristic water – orchard culture cities along Hau and Tien rivers in the Mekong Delta. Differing from the other three cities, in Ben Tre province, the dense original water body provides the land with abundant aquatic and irrigational resources (Pillai et al., 2018, p. 3).

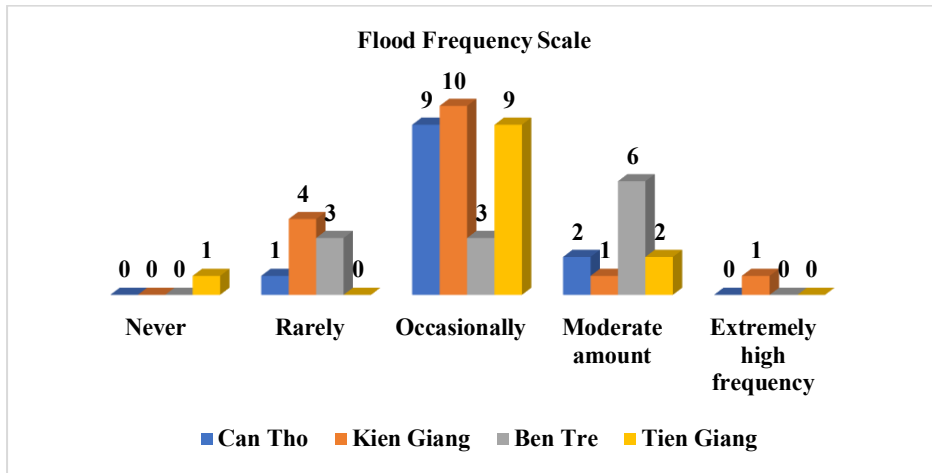
Tien Giang province is also famous for water tourism development in the Mekong Delta region. It is an area abundant in agricultural and aquatic products. This is also based on the characteristics of the flood seasons in the Mekong Delta region that develop river tourism models such as floating markets where hundreds of boats and canoes gather to sell and buy the local products (Le, 2005).

4.2 Perspectives and the perception of floods by tourist accommodation managers

Like other natural disasters, floods are defined amongst the most devastating natural hazard and can inflict major losses on people and damage to infrastructure, the environment, and public services. Traditionally, flood management approaches concentrated on flood defense to reduce the probability of flooding (O'Neill et al., 2016, p. 3).

The figure below shows how the tourist accommodation managers perceive floods through the frequency of floods in Can Tho, Kien Giang, Ben Tre, Tien Giang. The flood frequency scale was applied based on a five-point Likert scale survey questionnaire with the following scales of frequency: Never; Rarely; Occasionally; Moderate amount; and Extremely high frequency. Using this Likert scale helped shape the frequency of floods in selected regions.

Figure 2: Flood Frequency Scale



Source: own processing based on the survey results

According to tourist accommodation managers, floods occur in the selected regions with mostly occasional frequency, followed by a moderate amount, then rare. Only two frequency "Never; Extremely high" is the least amount.

The Mekong River floods overflowing every year, causing inundation on a large area of Vietnam's largest granary: inundation nearly two million hectares, lasting four to six months, flooding 0.5-4.0m deep. Flood in the Mekong Delta is mainly a natural phenomenon and occurs every year, bring many benefits to this area such as providing aquatic resources, sedimentation for the delta, giving many potentials for river tourism development for the Mekong River Delta (Pham, Truong, 2016, p. 158-159).

Based on tourist accommodation managers' responses in four selected regions in the Mekong River Delta, 27.5% of respondents described floods in the locality where they work as an annual natural phenomenon during the flood season, with moderate and non-permanent water levels. Some responses show that flood is considered a development strength for river tourism in the Mekong River Delta. However, more than 19% percent of respondents say that they see flooding sometimes occurs with high frequency due to climate change, which could be dangerous and hinder people's lives, affecting the tourism industry in the locality. 11.8% of people answered that flooding was more severe due to the bridge structure and rapid concreting. Furthermore, the remaining 42% of people shown that floods are both an annual phenomenon and a natural disaster when it happens at great magnitude.

"Floods during the flood season in Tien Giang can be said as a natural phenomenon here. With moderate water levels, floods bring more seafood, shrimp, and fish to the region, enriching food sources for the region's tourism development." (Mekong Rustic Cai Be, Respondent 11, Questionnaire)

"Flood is a natural phenomenon every year in the flood season in Kien Giang, but the frequency of rain is not too much. Kien Giang is not affected by storms, but the rainfall is quite large. Therefore, the annual floating water season is a natural phenomenon here. In 2019, Phu Quoc island suffered a big flood with 10 days raining, which caused many obstacles for peoples." (Nha Quynh Hotel, Respondent 10, Questionnaire)

"Floods cause inconvenience for traveling a little bit. However, this is an annual natural phenomenon and does not last long." (Queenies House Can Tho homestay, Respondent 2, Questionnaire)

"Not only is it a natural phenomenon every year, but it also changes and happens like natural disasters. The reason is because of the effects of climate change." (Lan Vy Hotel, Respondent 51, Questionnaire)

On the other hand, when floods happen with a high frequency, it also brings difficulties and danger to the region. The main reason causing the danger is that climate change brings many storms across the Mekong River Delta, causing widespread flooding in this area (Pham, Truong, 2016).

"It only happens when heavy rain lasts for many days. The reason could be due to the fast concreting process (the continual emergence of buildings) that public infrastructure (drainage systems) cannot keep up." (Phuong Binh House, Respondent 13, Questionnaire)

"In Phu Quoc, heavy rainfall with the drainage system is not upgraded to the equivalent of construction works; this leads to local flooding." (Fusion Resort Phu Quoc, Respondent 12, Questionnaire)

"Because the global warming phenomenon leads to climate change, so the weather may be very volatile, leading to floods with high frequency." (Emerald Boutique Homestay, Respondent 5, Questionnaire)

Through the survey, perceptions of floods from the tourist accommodation managers are divided. Besides the majority of respondents to the perception that flooding is both a natural phenomenon and a disaster, more than a quarter of people do not perceive this as a danger. The reason is that floods with high intensity may not appear much in that locality, so it shows a subjective part about managers' awareness. Although it can be a characteristic of tourism development for the Mekong Delta, the impact more or less when floods happen dangerously is completely present; Therefore, the management of the tourist accommodation establishment should still have a more objective view of the impact of floods in order not to be subjective but to suffer damage in the future.

Through a reference to a survey on perceptions of tourism accommodation businesses in the city of Can Tho about climate change, it is clearer about the managers' perceptions of climate change. The perception of floods from tourist accommodation managers in Can Tho is almost basic but lacks universality and expertise. Raising awareness about climate change and the impact of floods is considered essential to preserve and promote the sustainable development of the Can Tho tourism industry in particular and the entire Mekong River Delta region. In addition to regular information updates from newspapers, radio, the internet, tourist accommodation managers must participate in some climate change training courses and sustainable tourism development organizations provided by the local, municipal, and central government (Dao et al., 2017, p. 19-26). An understanding and awareness of the dangers of disasters are prerequisites for protecting a tourism business's activity and the local tourism industry from the new challenges of climate change.

The Mekong River Delta is considered the area dependent on the benefits of annual flooding and suffering from the negative impacts of flooding, such as changes in characteristics, hydrological regime of the area, and climate change. According to the Vietnamese Ministry of Construction, the statistics record show that the floods that occurred

from 1996 to 2005 have brought a lot of serious consequences to the Mekong River Delta, such as a large number of deaths and the destruction of houses. Therefore, it is necessary to combine preserving and developing real benefits and having a solution to deal with damage and loss (GIZ, 2018).

4.3 The potential for water tourism development in the Mekong Delta region

4.3.1 Definition and features

According to many farmers and scientists in Vietnam, floods in the Mekong River Delta region are defined not only as a "disaster." Since ancient times, the annual floods have always been associated with the Mekong River Delta's nature, although sometimes, they still can cause damage to people's life and property. There are so many benefits that annual floods bring to the Mekong River Delta. The diversity and growth of crops and fruits are due to the number of natural fertilizers from fertile silt that floodwaters bring. The flood also brings people an abundant source of fish and shrimp, special kinds of aquatic products and vegetables that are only available in the flood season, contributing to increasing local income from trading activities in the market and the consumption of the tourism industry. Besides, there are benefits to the ecosystem and biodiversity for the Mekong River Delta's nature (Le et al., 2007, p. 37-39).

The Mekong River is considered a key tourism resource and contributes to the Mekong River Delta economy's development. It helps to connect river cultural communities thanks to river networks to transport and support people living in the river tourism area. It is defined as the unique cultural heritage of Vietnam with accompanying tourism values. The Mekong River Delta is also known for its richness of biodiversity. It is an area rich with thousands of orchards, hundreds of different types of fruit. Furthermore, it also has three biosphere reserves, five national parks, and dozens of other protected areas. Eleven floating markets are the main tourist feature that increases the whole region's value, causing excitement and curiosity for tourists who love the river tourism culture of the Mekong River Delta. (Huynh, 2018, p. 35-38).

"Tourists really love this feature of the Mekong River Delta. Many people enjoy the experience of interesting natural phenomena, as well as the famous dishes that only appear in the flood season." (Song Tien Hotel, Respondent 9, Questionnaire)

"Tourists are very excited to see the high tide." (Nam Bo Boutique Hotel, Respondent 8, Questionnaire)

"Tourists are interested in traveling in the flood season to enjoy the Mekong River Delta's typical river tourism. The weather in this season is quite cool, not sultry, making tourists feel relaxed and comfortable." (Nha Quynh Hotel, Respondent 10, Questionnaire)

"Tourist is very excited to explore the floating water season tourism in Tien Giang." (Mekong Rustic Cai Be, Respondent 11, Questionnaire)

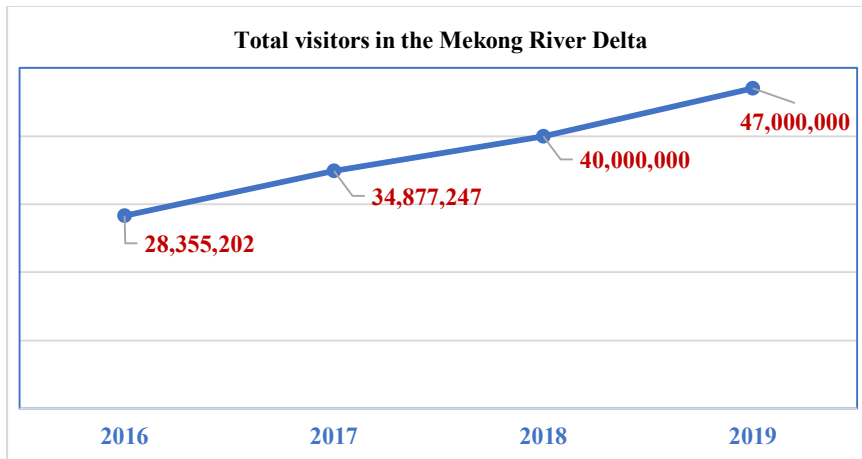
"Tourists who love experiencing and exploring said that they find it very interesting and lucky to travel at the right time of the flood season. This is the period when visitors can enjoy many delicious dishes made from seafood that they can only taste until the flood season." (Bambusa Resort, Respondent 12, Questionnaire)

Tourism is a new but rapidly increasing industry in the Mekong Delta with annual development of 16.4% (Huynh, 2018, p. 35-38).

4.3.2 Rate of tourism development through the numbers

Number of tourist arrivals

Figure 3: Total visitors to the Mekong River Delta region from 2016-2019



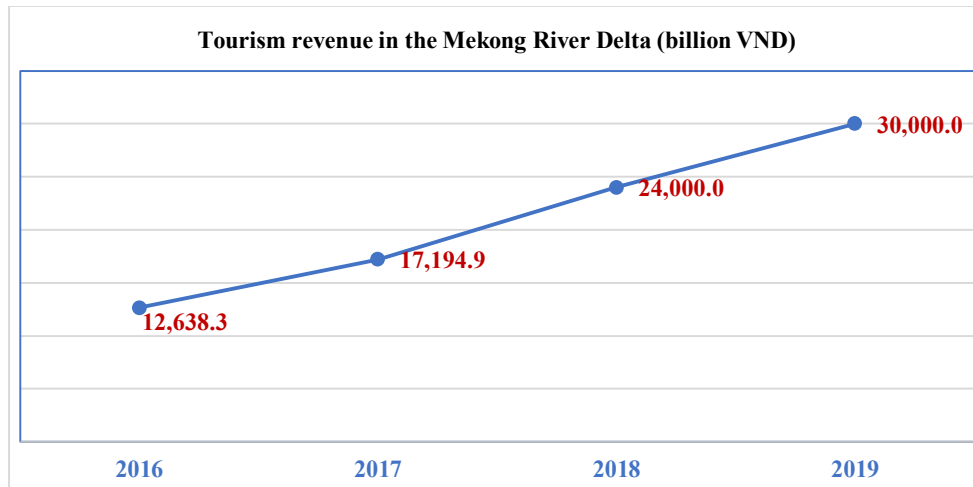
(Tran et al, 2018-2019) – edited by author

From 2016 to 2019, the number of tourists to the Mekong River Delta increased quite rapidly. In 2016, the whole region had more than 28 million tourists visiting. In 2017, the number of tourists increased to more than 6.5 million people, reaching 34,877,247 arrivals. In 2018, tourists to the Mekong Delta reached 40 million people and increased to 47 million in 2019.

According to tourist performance reporting sites, in 2017, Can Tho city was on the list of typical localities with high tourist arrivals rates. Tien Giang is the locality that attracts the most international visitors, with more than 7.3 million visitors. The highest tourism revenue belongs to Kien Giang with 4.6 billion VND (Tran, 2018).

Number of tourism revenue

Figure 4: Tourism revenue in the Mekong River Delta from 2016-2019



(Tran et al, 2018-2019) – edited by author

In terms of tourism revenue, the Mekong River Delta has an average increase of about 5.8 billion VND per year from 2016 to 2019. 2017 to 2018 was the period with the highest growth rate, reaching 28.4%. However, the increase in tourist arrivals is not very high. By 2019, the Mekong River Delta's total tourism revenue is about 30 billion VND, which is not a large number compared to the 47 million visitors coming here in 2019 (Trong, 2019).

The Mekong River Delta has a growing tourism base, although it is not superior to the more famous tourist destinations in Vietnam. Nevertheless, this place will increasingly attract tourists and further economic growth thanks to its charm and growth rate.

4.4 The impact of floods on tourist accommodation

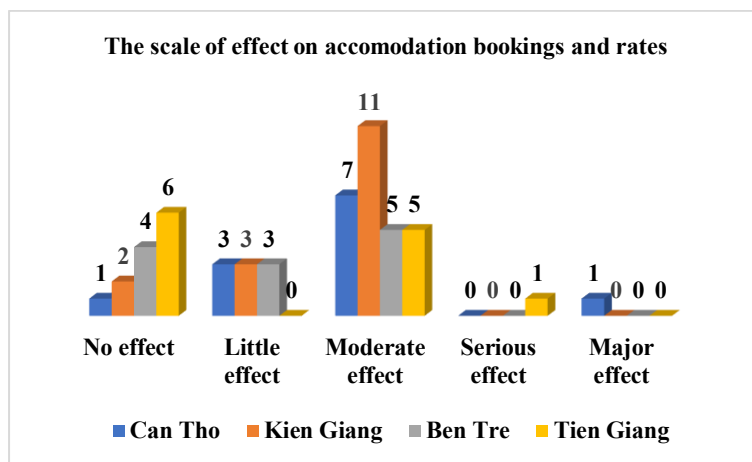
4.4.1 Bookings and rates

When occurring, floods will also have some negative impacts on the tourism industry, such as a decline in the number of tourists, resulting in loss of business, damage to local infrastructure, and the cost of restoration. The damage is classified into two categories: direct and indirect. Direct damage includes disruptions to business operations due to the direct physical effects of floods on facilities. On the other hand, indirect damage is caused by floods

but not occurring simultaneously or in the same place where the natural disaster occurred (Vila et al., 2019, p. 1-3).

Surveying the effect of floods tourist reservations and bookings is also an essential part. It shows the influence of floods on tourist accommodations. Besides the key factors such as room quality, room rates, and hotel service quality, tourists’ experiences in the local region also play an important role in their booking decision. Figure 5 below keeps using the five-point Likert scale with the following frequency: no effect, little effect; moderate effect; serious effect; and major effect. These frequencies show the importance of determining the extent of floods when affecting tourist accommodation bookings and rates.

Figure 5: The scale of effect on accommodation bookings and rates



Source: own processing based on the survey results

Tourist accommodation managers decided to choose that floods have a mostly moderate effect on their bookings and room rates, follows by many selections on “No effect.” “Little effect” frequency accounts for a few, and the remaining two frequencies are “Serious effect; Major effect” accounts for a tiny proportion.

The frequency of floods on bookings and room rates shows how the number of tourists changes during the flood season in the four selected regions in figure 4 below. Up to 45.1% of tourist accommodations decrease the number of tourists during the flood season; this is a relatively high number. Following that, 47.1% of tourist accommodations do not have much

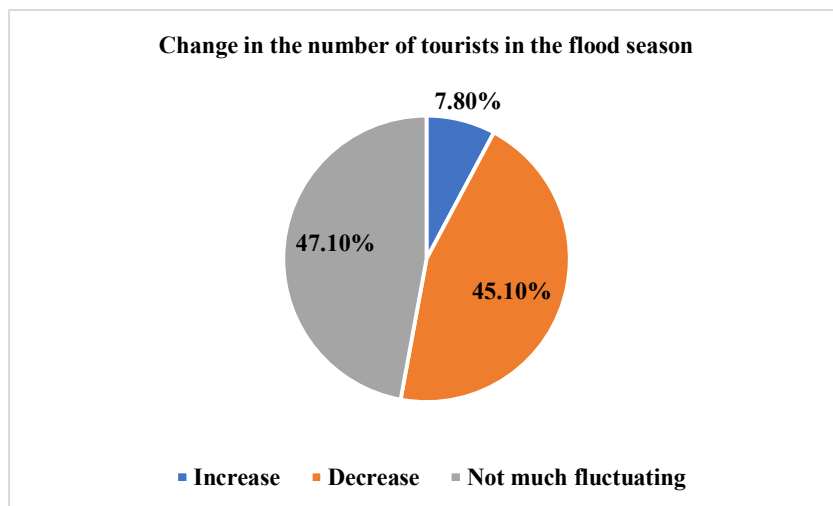
fluctuation in the number of tourists in the flood season. However, up to 7.8% of tourist accommodations also increase the number of visitors during the flood season. It shows that floods both create a development advantage for tourism in the Mekong River Delta and cause certain obstacles to the increase and decrease of tourist numbers.

“The advantage of Queenie House in the flood season is the location. Queenie House is located on the central road of Can Tho city, has a relatively good height, so during the flood season, it is not flooded as deeply as other streets. However, the generally difficult situation during this period was that the number of tourists decreased slightly.” (Queenie House, Respondent 2, Questionnaire)

“The impacts of floods reduce hotel revenue because of the reduction of tourist number.” (Ben Tre Mekong Hotel, Respondents 4, Questionnaire)

“Because the location is far from the city center, it will have little effect on tourist’s travel plans, making them tend to book a shorter duration of stay. However, for those who like to go to the countryside, close to nature, like the quiet place, there is not much fluctuation.” (Hung Long hotel, Respondent 6, Questionnaire)

Figure 6: Number of tourists in the flood season

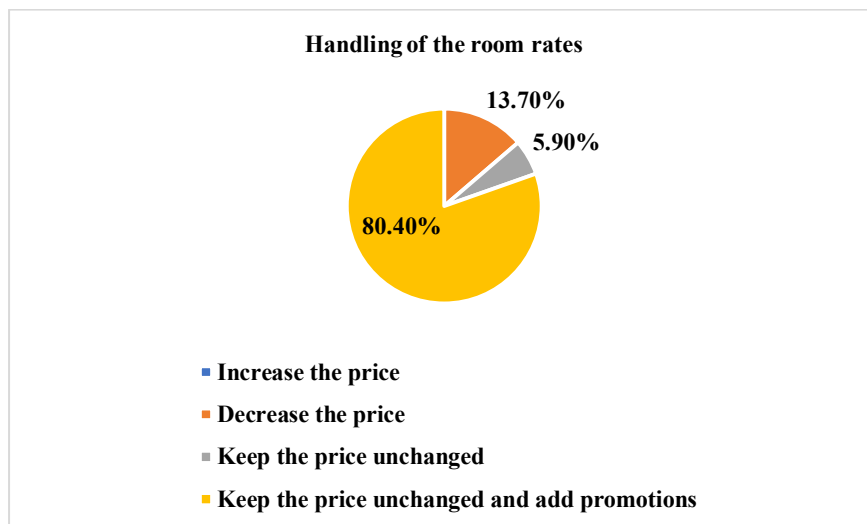


Source: own processing based on the survey results

Therefore, the focus on room price treatment is also an important solution for tourist accommodation managers. The increase and decrease in room rates during floods also partly affect the tourist accommodation revenue. However, it shows the quickness of how tourist accommodation managers handle the situation, helping to bring certain benefits to both visitors and tourist accommodation.

Figure 5 below shows four ways to handle the room rates in tourist accommodation managers' flood season. Through the survey statistics, no one chooses to increase the room rates at this time. That can be explained because the number of tourists decreased during the flood season (up to 45.1% in figure 4 above). There are 13.7% of managers who choose to discount their room rates at this time, hitting tourist's thrifty mentality. Only 5.9% of tourist accommodations keep their room rates unchanged due to the floods' minor impact. Finally, the solution's dominance is to keep the price unchanged and add promotions (80.4%). It can be said that this is the best solution according to the selection of the tourist accommodation managers. As a result, the revenue will not be affected too much, and tourists are often impressed by attractive promotions from tourist accommodation.

Figure 7: Tourist accommodation managers handle the room rates



Source: own processing based on the survey results

4.4.2 Tourist length of stay

The Economic Theory pointed out that a vacation's duration is a constraint on the demand imposed by available time. It is shown that the length of stay is a determinant of destination demand rather than a demand characteristic. Therefore, length of stay is an important factor that needs more attention (Barros, 2010, p. 692-695). The tourist length of stay contributes significantly to the benefits of tourist accommodation. From a personal point of view, if visitors book a longer stay, then hotel revenue will also increase. It is the income from bookings and other additional services such as restaurant, bar, entertainment, laundry, vehicle rental, etc.... of the tourists during their stay at the tourist accommodation. Each of those small services also contributes significantly to increasing revenue for the tourist accommodation, creating a rhythmic rhythm in the tourist accommodation operation even during the tourist-less season of the year.

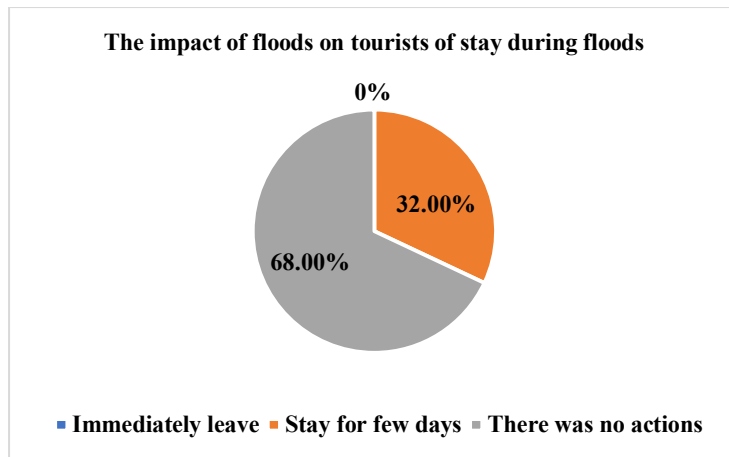
Besides, the tourist average length of stay is observed to decrease in today's tourist markets. There is a perception that length of stay is one of the most important factors in tourists' decision-making and great importance to tourist destinations. Disadvantages of a shorter length of stay can be seen as causing higher administrative costs for some tourist accommodation. Promotional campaigns must be adjusted according to a tourist's decision-making concerning the length of time they spend in a destination (Lisa, 2010).

Figure 8 below shows how the tourists react during the flood season in both situations: the natural flood season with no heavy rain in the destination, and with heavy rains, high-intensity floods occur, causing many obstacles. There are three selections for the tourist accommodation managers: Tourists immediately leave, Stay for a few days, and There were no actions.

There is a positive signal to be found here: there are not any tourists immediately leaving during floods. This ensures the maintenance of tourist length of stay, ensures their safety, and helps tourist accommodation avoid trouble processing visitors' bookings. If tourists leave immediately, problems such as cancellation, refund money happens very easily. Next, up to 32% of tourist accommodation managers choose that their customers stay for a few days during the flood season. This can be said to two factors: one is because of their love of river tourism experience that they want to stay for a few more days; secondly,

when there is a sudden flood, tourists decide to stay more days to ensure their safety. In the end, more than 67% of tourist accommodation managers choose that tourists have no actions when floods occur. It is possible that floods caused no danger at that time, and they are still experiencing holidays during the flood season in the Mekong River Delta.

Figure 8: The impact of floods on tourist length of stays during flood season



Source: own processing based on the survey results

“There are many cases when visitors want to leave immediately because of the bad weather. However, there are also many different cases that visitors want to stay because widespread rainfall is regional. It still rains when they fly to other areas, so they will still stick to the original plan.” (Phuong Binh House, Respondent 14, Questionnaire)

“Tourists really enjoy their trip to the Mekong River Delta during the flood season thanks to enjoying the dishes that they can only try in the flood season. It is only slightly difficult for them to travel if the high tide rises in urban areas.” (Nha Quynh Hotel, Respondent 10, Questionnaire)

“With a level of safety like the annual flooding season, tourists are very excited and love the travel experience in the Mekong River Delta. Nevertheless, when the flood comes at a dangerous level, it also somewhat confuses and worries tourists. However, due to the timely adaptation of the adaptive measures taken by both the hotel side and the local management, tourists are still assured of the safety of their trip.” (Lavender Hotel, Respondent 50, Questionnaire)

“At first, they were quite scared and confused. But fortunately, accommodation facilities together with local managers contribute to bringing safety and comfort to tourists.”
(Mekong Rose Hotel, Respondent 49, Questionnaire)

4.5 Adaptation measures and the responsibility of tourist accommodation and local managers

4.5.1 Advantage and challenges for tourist accommodations and responsibility of flood risk management

"When floods occurred as natural disasters with great destruction, our tourist accommodation suffered financial losses such as reduced income, incurring costs of infrastructure repairs, flood barriers are equipped to prevent floods outside the hotel door, the cost of buying insurance. Besides, the management activities were hastier because some problems are not be handled in time. Then we all have to ask for the help of the local government management parties." (Mekong Rose Hotel, Respondent 49, Questionnaire)

"Due to the local tourist attraction, the number of tourists has not been reduced too much. Plus, disaster assistance programs and policies from the local government can still ensure attentive service to tourists during their stay." (Lan Vy Hotel, Respondent 51, Questionnaire)

"The advantage we have is the timely information support and relief from the management government from the local to the city and central level. The financial situation faces some difficulties such as lower revenue, additional expenses such as buying generators, repairing water pipes, and incurring insurance costs." (Lavender Hotel, Respondent 50, Questionnaire)

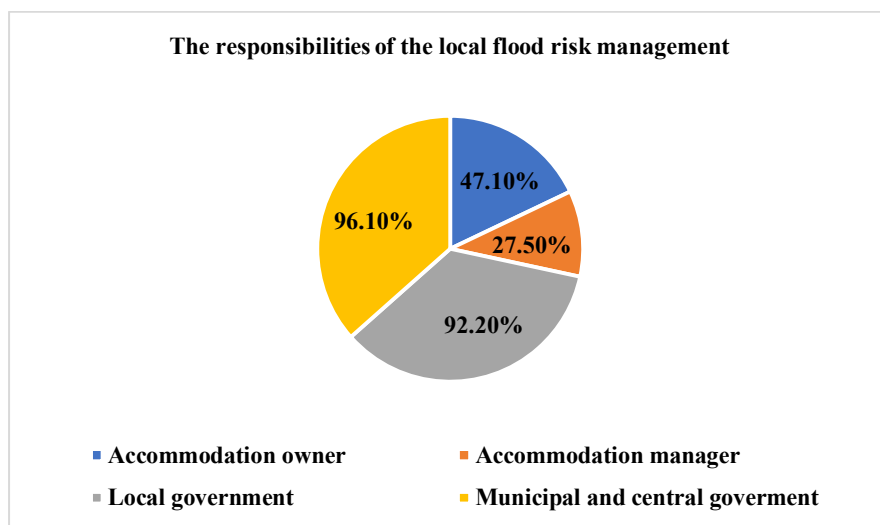
"When floods happen with moderate intensity, all business activities are very ok. However, when a flood happens like a natural disaster, it harms the local area's life. Tourism revenue decreases incur additional costs such as repairing infrastructure, buying more generators, supplies for tourists; Furthermore, we had to purchase more insurance cost for our hotel." (Nesta Hotel, Respondent 48, Questionnaire)

"The hotel revenue has decreased slightly compared to the busy tourist season, but at a negligible level. The advantage is that because it is located in Phu Quoc Island - one of the

most famous tourist destinations in Vietnam, tourists' attraction is quite high. The difficulty is that when the flood suddenly happened with great intensity, the hotel did not prepare on time the response method, so it was a bit of a hurry." (Anise Hotel, Respondent 43, Questionnaire)

“Regarding the financial situation, only slight fluctuations in tourism revenue due to the less tourist season in the flood season. In terms of management activities, when the 2019 calendar flood occurs, accommodation facilities are also quite struggling with the problem of providing arising services for tourists such as boats, canoes to move, laundry services, serving food was also busier because of the long rain, so guests could not go out.” (Ha Phat Hotel, Respondent 42, Questionnaire)

Figure 9: The responsibilities of flood risk management



Source: own processing based on the survey results

Flood risk management includes segments from a situation assessment to the preparation of adaptation measures. Through a survey question on Figure above about local flood management responsibilities, tourist accommodation managers made the following allocation: 27% of people chose the responsibility go to them, 47.1% of the votes were given to tourist accommodation owners, local government, and municipal, central governments are selected as having the highest responsibility for flood management by the number of 92.2% and 96.1%.

4.5.2 *Adaptation measures from tourist accommodation manager*

Additional situational questions have been asked of some tourist accommodations regarding adaptation measures before, during, and after floods. Only a few answers were given, but it also showed a full range of tourist accommodation business owners' preparation aspects in the four selected cities in the Mekong River Delta.

"Because every year around the time before the rainy season comes, our hotel, as well as other tourist accommodations locally, are notified by the Provincial Department of Tourism and required to prepare for the prevention against storms, floods, natural disasters, so all coping options are prepared in advance even when floods may not happen at dangerous levels. The first task that we have to top priority is to canvass the status of the entire facilities, take measures to reinforce flood protection, allocate workforce, and prepare as fully as possible equipment and necessities for tourists." (Hung Long Hotel, Respondent 5, Questionnaire)

"Because of its proximity to the sea, we always have to prepare evacuation and relocation options, ensuring absolute safety for tourists in the event of floods happening at dangerous levels. If not affected by normal business operations, we always ensure adequate electricity, water, and necessities for tourists." (Bambusa Resort, Respondent 11, Questionnaire)

"We always keep a positive attitude to convey to tourists the most useful and reassuring. We always update local tourism information on the hotel's website to let customers see clearly and put their trust in us. Foodservice, laundry, and vehicles will be guaranteed to operate 24/24h whenever tourists need." (Fusion Resort, Respondent 12, Questionnaire)

What about the situation after floods?

"The post-flood recovery period is also quite important to us. It is time for tourism businesses in the region to recover from the consequences and bring tourists back to enjoy

their trips because of the previous disruption. Our hotel focuses on cleaning and stabilizing in the fastest way. Then provide tourists with all other services such as visiting tourist sites, offering gratitude programs, promotions, and thanks for the support and trust of tourists." (Phuong Binh House, Respondent 13, Questionnaire)

"In addition to stabilizing the business situation and providing services to tourists, we also updated our website, bringing new and more positive information and services to attract and satisfy tourists." (Mekong Lodge, Respondent 31, Questionnaire)

"We focus on completing the cleaning works of the hotel area first. The next step will be to negotiate and re-provide services to flood-affected tourists, such as resuming the tour they have booked, arranging, preparing, and getting ready to welcome the next tourist arrivals. Because of our available hospitality as well as locals in each of the regions of Vietnam, tourists always feel secure and love when traveling to the Mekong River Delta." (Phuong Thang Hotel, Respondent 45, Questionnaire)

Tourist accommodations in the four selected regions have shown their rather organized and efficient management. They both follow management instructions from the government leaders and prepare their own flood adaptation measures and plans. The most important goal is towards tourists' safety and satisfaction and thereby promoting local tourism, improving the standard life, tourism revenue, and prestige of tourist accommodation establishments.

4.5.3 The impact of floods on the surrounding local communities and solutions of local and municipal governments

With a survey questioning the effects of flooding on the other side than the impact of tourist accommodation, most tourist accommodation managers responded that flooding also affects the environment, people's daily life, and transportation. Other aspects such as natural landscapes, agriculture, aquaculture, local economic, and public constructions are angled to be also affected by floods.

"If the floods occur with high frequency, it will affect the environment, ecosystem, and inconvenience people to travel. Tourist managers and other authorities should have preparedness measures, as well as refer to research model that could predict and easier to manage floods risks." (Stellar Hotel, Respondent 16, Questionnaire)

"When the danger level occurs, floods will affect people's daily life, cause environmental pollution, power outage, and water loss." (Cona Hotel, Respondent 19, Questionnaire)

"If flooding occurs at dangerous levels, it will affect the environment, people, and public constructions." (Minh Kieu Hotel, Respondent 27, Questionnaire)

"It harms the environment such as water pollution, natural landscape, disturbance to people's lives." (Nesta Hotel, Respondent 48, Questionnaire)

"If this happens at high intensity, it will hinder the movement of tourists, slow traffic, and disturbance of local people." (Lan Vy Hotel, Respondent 51, Questionnaire)

With unpredictable climate change shortly, floods in the Mekong River Delta are defined as dangerous natural disasters, difficult to predict and without limit. Until now, the people living in the Mekong River Delta have been so familiar with the flood season, and the floods also helped people in their living, fishing, and develop tourism activities. However, if in the unpredictable climate change situation, when floods happen at a dangerous level, the local managers, as well as the government, must have their own response measures to "live with floods" safely while maintaining people's live activities smoothly and productively (Duong, 2005, p. 2-9).

When be asked more about the implementation of flood prevention and adaptation measures by local and municipal governments, several tourist accommodation managers answered that there are many measures from local government were deployed, such as strengthening the dyke system to prevent floods, improving the development of flood

warning models, and actively propagating and informing the people as well as tourism businesses in the fastest and most effective manner.

A wide range of flood risk management and mitigation measures and programs have been proposed and implemented by committees, ministries, and agencies in the Mekong River Delta. The recommendation to develop an early flood warning system is considered a top priority for the region and has been proposed by the Mekong River Commission. The ministries of agriculture and rural development, provincial people's committees, and specialized agencies are also fully responsible for water management in the provinces, districts, and hamlets of the Mekong River Delta (Le et al., 2007, p. 42-48).

Flood forecasting works are done by the General Department of Meteorology and Hydrology. Along with that, the main flood control works such as flood drains, canals, and dikes are surveyed, designed, approved, and supervised by the Ministry of Agriculture and Rural Development. After that, these works will be managed and exploited by provincial officials; the local authorities then maintain it at the district and commune levels. Non-governmental organizations will help implement other non-structural measures (Le et al., 2007, p. 42-43).

Tourist accommodation establishments and local people receive flood information through mass media such as television, radio, newspapers, and People's Committee notices from the commune level, district to the provincial level. The highest responsibility for directing disaster-related activities naturally rests with the National Committee for Flood and Storm Control and Search and Rescue. Other sources of information, such as flood level data, are also updated by the National Weather Service and the internet (Le et al., 2007, p. 42-43).

Flood control measures such as computer modeling and mathematical modeling have also been widely used since the 1960s. They have a role in determining, forecasting the situation, and applying options for flood control. Thanks to that, the loss of lives and property of the people in the Mekong River Delta is also greatly reduced. Along with the support and assistance from the authorities from local to the state through the construction of dykes and

irrigation development, the Mekong River Delta people are also ready for flood prevention. Public awareness campaigns about floods also play a significant role. A flood risk mitigation plan was mentioned as follows: "Avoid floods, live together and control floods" (Le et al., 2007, p. 45).

"Avoiding the flood" is seen as a second alternative. This measure is intended to warn and evacuate areas at high risk of floodwater level.

"Living with the flood" is an integrated solution. This is also an adaptive measure to protect and maintain human lives and property.

"Controlling the flood" focuses on the construction of technical infrastructure to protect the stability of production activities and ensure safety for local people.

Thereby, flood in the Mekong Delta is still defined as a natural phenomenon, one of the typical features of this river region. Nevertheless, when it happens at a great intensity with a dangerous level, flooding will still be a natural disaster. Then, the property of great value and human lives is in danger. Flood warning systems and management plans are essential to minimize flood-related risks.

Due to the Mekong River Delta's conceptual aspect of flooding, the flood management practices here are also different from other tourist destinations in Vietnam. Therefore, the strategies of mitigation or "living with floods and controlling flood" with specific solutions such as building water supply irrigation systems, constructing dykes, and planning residential clusters are considered suitable strategies for the Mekong River Delta (Le et al., 2007, p. 45).

From tourist accommodation opinion, the local managers and government should refer to project like "Mekong Delta flood warning and motoring system" to raise the capability of warning and forecasting flood and inundation to serve the prevention and mitigation of natural disasters in the Mekong River Delta, for example, the existing hydrodynamic

HYDROGIS model was developed by Dr. Nguyen Huu Nhan and is used for inundation mapping, flooding forecasting in Viet Nam. (Duong et al., 2005, p. 2-8).

The flood warning manual is also a method that provides quite complete and detailed concepts and parameters of the early flood warning system in the Mekong Delta, helping local authorities and cities to grasp the situation in a way quickly and from there transmit information to people, businesses, tourist accommodation establishments in the area to all make decisions and timely response measures. The three phases that the early flood warning handbook covers are: Flood hazard forecast by the Hydrometeorological Forecasting Center; Receive and transmit flood warning information to provinces, districts, and communes; Community response to flood warning information. In addition to flood preparedness and response, planning after the flood recedes is also extremely important. Those tasks include local rehabilitation, electrical safety checks, relief work, and returning people to the localities where they live. Since then, socio-economic activities will gradually return to the normal development pace, helping the locality be more stable sooner (ADPC, 2013).

5. Discussion and proposals

5.1 Discussion

The survey results in four selected tourist destinations in the Mekong River Delta region show that tourist accommodation establishments grow their business activities based on the benefits of annual floods; their perceptions, opinions, and responses, as well as Local and other government parties in the event of natural disasters such as floods, are also clear and effective. The attraction of tourists to tourism at those places is emphasized quite a lot. It is also the Mekong River Delta tourism industry's strength, contributing to sustainable tourism development there.

However, tourist accommodation managers need to have an objective perspective and truly see the negative side effects of flooding on the tourism industry. In addition to the answers recording the negative impact of flooding, some responses only identify the positive side. This can lead to not responding to floods in time because prevention and adaptation measures are not taken in time. The protection and support of government managers from local to city and central levels are always available and in scale, but tourist accommodation establishments should still be more proactive in flood management.

Tourism's revenue and profits are both derived from tourism activities. The tourism accommodation sector is also developing more and more because of demand and the number of tourists' bookings. Hotels, homestays, and resorts are highly profitable or not are depend on the number of visitors each year. Dangerous levels of flooding will disrupt all business activities, directly affecting declining tourist arrivals and tourist accommodation revenue. The flood treatment and adaptation measures of tourist accommodation establishments in the four regions of Can Tho, Kien Giang, Ben Tre, and Tien Giang have many strengths such as ensure safety and provide all essential things for tourists like electricity, water, food, equip sandbag to reinforce the water level rises. However, their flooding adaptation measures have to add some additional points to be more effective. Below are some given proposals that main aim at environmental protection.

5.2 Proposing flood management solutions

- Strengthen awareness among tourist accommodation managers about climate change and the negative effects of flooding on tourism. Managers should actively participate in government courses and organizations on climate change to acquire international knowledge and thinking.
- Tourist accommodation managers need to consider purchasing insurance. The problem of insurance in Vietnam is still inadequate, so sometimes tourism businesses do not really care and appreciate its importance.
- Direct tourism services in tourist accommodation establishments to more protect the environment and the earth. Flood danger is not 100% caused by nature. All habitation activities and exploitation of human beings contribute to climate change. Hotels, homestays, and motels should use natural and environmentally friendly materials and products.
- Tourist accommodations should also consider building infrastructure to avoid rapid local concretion. This issue has been mentioned by many tourist accommodation managers about the cause of the flooding. With the heat of climate change and the growing scale of propaganda programs and implementation of environmental protection, a few businesses in the Mekong Delta have focused on exploiting and building accommodations tourism from familiar and environmentally friendly materials that attract the attention of tourists; this number needs to be further expanded in the future.
- Local governments should also have policies to support more tourist accommodation establishments in the region. In addition to the support and assistance in natural disasters, the investment and improvement in both facilities and workers' quality in accommodation establishments are also significant.

6. Conclusion

A natural disaster is a dangerous factor and leaves many influences on nature and people and the development of human life, economy, and society. One of the common disasters caused by natural disasters in Vietnam is flooding. It affects the dwellings, but it also directly affects the life activities associated with people, such as social work, and especially the local economy. Vietnam is a country with a developing economy, especially tourism development, which contributes significantly to its budget.

Take the Mekong Delta as a typical example. The West land with the peaceful, poetic river, with what is simple and truest. River tourism and floating season tourism are associated with the Mekong River Delta and bring the region's economy to a great development compared to the whole country. However, every factor always has two sides. When the amount of rainfall occurs too much, the flood water accumulates too long, and it could make people's lives disorder. Since then, local and central governments are the organizations that can provide the most needed help, effective solutions, and remedies.

Tourist accommodation establishments in the Mekong River Delta are one of the main businesses based on developing the tourism industry here. So, when flooding occurs positively or negatively, there must always be vigilance, preparation, and strict management measures to ensure business operations, bring trust and satisfaction from tourists, contributing to the sustainable development of local tourism.

Moreover, from that management point, when all flood management plan is carefully prepared and effectively implemented by both tourist accommodation managers and the local and other government parties, all flood risks will be handled very quickly. Since then, tourism activities will develop normally, effectively, increase productivity and quality for the tourism industry. Tourists feel more comfortable and want to have a longer stay, discover new travel experiences. Tourism accommodation establishments are closely managing and profitable, increasingly attracting more tourists, making the Mekong River Delta tourism

industry more and more developed, becoming one of Vietnam's unique tourism development areas.

7. References

Arnell, N. and Gosling, S., 2014. *The impacts of climate change on river flood risk at the global scale*. Climatic Change, [Online]. DOI 10.1007/s10584-014-1084-5, 401p. Available at: <https://link.springer.com/content/pdf/10.1007/s10584-014-1084-5.pdf> [Accessed 1 February 2021].

Bao Anh Viet Nam. 2005. *Tien Giang Province, a beautiful and rich area*. [ONLINE] Available at: <https://vietnam.vnnet.vn/english/tien-giang-province-a-beautiful-and-rich-area/1422.html>. [Accessed 1 October 2020].

Barros, C. and Machado, L., 2010. *The length of stay in tourism*. *Annals of Tourism Research*, [Online]. 37, 692-706. Available at: <https://www.sciencedirect.com/science/article/abs/pii/S0160738310000022> [Accessed 2 October 2020].

Bernard, K. and Cook, S., 2014. *Luxury tourism investment and flood risk: Case study on unsustainable development in Denarau island resort in Fiji*. *International Journal of Disaster Risk Reduction*, [Online]. 14, 302-311. Available at: https://www.researchgate.net/publication/267928534_Luxury_tourism_investment_and_flood_risk_Case_study_on_unsustainable_development_in_Denarau_island_resort_in_Fiji [Accessed 16 February 2021].

Brázdil, R., Řezníčková, L., Havlíček, M. and Elleder, L., 2012. *Floods in the Czech Republic. Changes in Flood Risk in Europe*, [Online]. DOI: 10.1201/b12348-12, 198. Available at: https://www.researchgate.net/publication/289260241_Floods_in_the_Czech_Republic [Accessed 2 February 2021].

Dao, N., Cao, M. and Dao, V., 2017. *NHẬN THỨC CỦA CÁC DOANH NGHIỆP KINH DOANH LƯU TRÚ DU LỊCH Ở THÀNH PHỐ CẦN THƠ VỀ BIẾN ĐỔI KHÍ HẬU*. *Tạp chí Khoa học trường Đại học Cần Thơ*, [Online]. 48, 19-26. Available at: <https://sj.ctu.edu.vn/ql/docgia/tacgia-3890/baibao-38621.html> [Accessed 5 October 2020].

Dieperink, C. et al, 2016. *Recurrent Governance Challenges in the Implementation and Alignment of Flood Risk Management Strategies: A Review*. *Water Resources Management*, [Online]. 30, 4467-4481. Available at: <https://link.springer.com/article/10.1007/s11269-016-1491-7> [Accessed 14 February 2021].

Dube, K. and Nhamo, G., 2019. *Climate change and potential impacts on tourism: evidence from the Zimbabwean side of the Victoria Falls*. *Environment Development and Sustainability*, [Online]. 21(4):2025–2041, 2041. Available at: https://www.researchgate.net/publication/323354632_Climate_change_and_potential_impacts_on_tourism_evidence_from_the_Zimbabwean_side_of_the_Victoria_Falls [Accessed 4 February 2021].

Duong, 2005. *MEKONG RIVER DELTA FLOOD WARNING AND MONITORING SYSTEM SUB-PROJECT. ENVIRONMENTAL IMPACT ASSESSMENT*, [Online]. 4. Available at: <http://documents1.worldbank.org/curated/en/588711468134070504/pdf/E11020v40eav014.pdf> [Accessed 2 October 2020].

Dvořáková, J., 2010. *The Prague floods of 2002*, [Online]. Vol: 31 No: 1 DOI: 10.1080/03094227.2007.9638654, 4. Available at: <https://www.tandfonline.com/doi/abs/10.1080/03094227.2007.9638654> [Accessed 2 February 2021].

Ecobnb. 2018. *Tourists: what is their ecological footprint?* [ONLINE] Available at: <https://ecobnb.com/blog/2018/03/tourists-ecological-footprint/>. [Accessed 8 February 2021].

EuroMonitor. 2011. *Floods Threaten Tourism in Southeast Asia*. [ONLINE] Available at: <https://blog.euromonitor.com/floods-threaten-tourism-in-southeast-asia/>. [Accessed 7 February 2021].

Far East Tour. 2016. *CUU LONG DELTA IN THE FLOODING SEASON*. [ONLINE] Available at: <https://www.fareastour.asia/destination/detail/cuu-long-delta-in-the-flooding-season-61.html>. [Accessed 1 October 2020].

Fitchett, J., Grant, B. and Hoogendoorn, G., 2016. *Climate change threats to two low-lying South African coastal towns: Risks and perceptions*. *South African Journal of Science*, [Online]. 112(5-6), ISSN 1996-7489. Available at: http://www.scielo.org.za/scielo.php?script=sci_arttext&pid=S0038-23532016000300017 [Accessed 10 January 2021]

Ghaderi, Z., Som, A. and Henderson, J., 2021. *When Disaster Strikes: The Thai Floods of 2011 and Tourism Industry Response and Resilience*. *Asia Pacific Journal of Tourism Research*, [Online]. 20(4), 415p. Available at: https://www.researchgate.net/publication/271929316_When_Disaster_Strikes_The_Thai_Floods_of_2011_and_Tourism_Industry_Response_and_Resilience [Accessed 10 January 2021].

Hegger, D., et al, 2016. *Toward more flood resilience: Is a diversification of flood risk management strategies the way forward?* *ECOLOGY AND SOCIETY*, [Online]. 21(4) DOI: 10.5751/ES-08854-210452, 19p. Available at: https://www.researchgate.net/publication/311741917_Toward_more_flood_resilience_Is_a_diversification_of_flood_risk_management_strategies_the_way_forward [Accessed 14 February 2021].

Helmer, M. and Hilhorst, D., 2006. *Natural Disasters and Climate Change*, [Online]. 30, 4. Available

at: https://www.researchgate.net/publication/7264789_Natural_Disasters_and_Climate_Change [Accessed 5 October 2020].

Henriques, E., B. (2010). *Water and tourism: resources management, planning and sustainability*. Centro de Estudo Geográficos, Universidade de Lisboa, 2010, 269p. ISBN 9726362032, 9789726362036.

Hoogendoorn, G. and Fitchett, J., 2016. *Economic Costs of the 2012 Floods on Tourism in the Mopani District Municipality, South Africa*. *Transactions of the Royal Society of South Africa*, [Online]. 71(2), 8. Available at: https://www.researchgate.net/publication/301286988_Economic_Costs_of_the_2012_Floods_on_Tourism_in_the_Mopani_District_Municipality_South_Africa [Accessed 31 January 2021]. ISSN: 0035-919X.

Hoogendoorn, G. and Fitchett, J., 2016. *Tourism and climate change: a review of threats and adaptation strategies for Africa*. *Current Issues in Tourism*, [Online]. 21(7), 18. Available at: https://www.researchgate.net/publication/303018317_Tourism_and_climate_change_a_review_of_threats_and_adaptation_strategies_for_Africa [Accessed 10 January 2021]. ISSN: 1368-3500.

Huynh, 2018. *An evaluation of impacts development in the A thesis submitted in fulfillment of the requirements for the Degree of Doctor of Philosophy at the Western Sydney University impacts of climate change on tourism in the Mekong Delta region of Vietnam*. *Western Sydney University*, [Online]. 1. Available at: [https://researchdirect.westernsydney.edu.au/islandora/object/uws%3A52115/datastream/PDF/view%20\(2.3.1\)](https://researchdirect.westernsydney.edu.au/islandora/object/uws%3A52115/datastream/PDF/view%20(2.3.1)) [Accessed 2 October 2020].

Jusoh, H., Ahmad, H., Buang, A. and Azima, A., 2012. *Flood disaster, impacts and the tourism providers' responses: The Kota Tinggi experience*. *Advances in Natural and Applied Sciences*, [Online]. 6(1):26-32. ISSN 1995-0772, 26-32. Available at: https://scholar.google.com/scholar?hl=vi&as_sdt=0%2C5&q=Flood+Disaster%2C+Im

pacts+and+the+Tourism+Provider%E2%80%99s+Responses%3A+The+Kota+Tinggi+Experience&btnG= [Accessed 4 February 2021].

Krasnozhan, L. and Rothschild, D., 2010. *Lessons from post-flood recovery of New Orleans and Prague.*, [Online]. DOI: 10.4337/9781849806541.00018, 158. Available at: https://www.researchgate.net/publication/289208662_Lessons_from_post-flood_recovery_of_New_Orleans_and_Prague [Accessed 3 February 2021].

Kundzewicz, Z., Pińskwar, I. and Brakenridge, G., 2012. *Large floods in Europe, 1985–2009. HYDROLOGICAL SCIENCES JOURNAL*, [Online]. 58(1), 7. Available at: <https://www.tandfonline.com/doi/epub/10.1080/02626667.2012.745082?needAccess=true> [Accessed 1 February 2021].

Le, T., Chu, T., Miller, F. and Bach, T., 2007. *Flood and salinity management in the Mekong Delta, Vietnam.*, [Online]. 1. Available at: https://www.researchgate.net/publication/305377337_Flood_and_salinity_management_in_the_Mekong_Delta_Vietnam [Accessed 2 October 2020].

Leonard, L. and Ebhuoma, E., 2021. *Factors influencing tourism accommodations' lack of preparedness for flooding in Lagos, Nigeria. Sustainable Urban Tourism in Sub-Saharan Africa*, [Online]. ISBN: 978-1-003-02429-3, 111. Available at: <https://books.google.cz/books?id=F20LEAAAQBAJ&pg=PT22&lpg=PT22&dq=Sustainable+Urban+Tourism+in+Sub-Saharan+Africa:+Risk+and+Resilience+theme+3+chapter+9&source=bl&ots=SUNJG06vQY&sig=ACfU3U2eXUvrObD1O6PIRKvBrgDxhddK8A&hl=vi&sa=X&ved=2ahUKEwj uwYK8vK7vAhXok4sKHakDCtQQ6AEwBXoECAsQAw#v=onepage&q&f=false> [Accessed 22 February 2021].

MASTER OF ARTS IN TOURISM DESTINATION MANAGEMENT. 2010. *Length of stay in tourism – 'Please, stay a little longer'*. [ONLINE] Available at: <http://www.tourism-master.com/2010/09/24/length-of-stay-in-tourism-please-stay-a-little-longer/>. [Accessed 2 October 2020].

McLeod, S. A. (2019, August 03). *Likert scale*. Simply Psychology, [Online] <https://www.simplypsychology.org/likert-scale.html>. [Accessed 12 March 2021].

Merz, B., Hall, J., Disse, M. and Schumann, A., 2010. *Fluvial flood risk management in a changing world*. *Natural Hazards and Earth System Sciences*, [Online]. 10 (3), 19. Available at: https://www.researchgate.net/publication/43047538_Fluvial_flood_risk_management_in_a_changing_world [Accessed 10 January 2021].

O'Neill, E., Brereton, F., Shahumyan, H. and Clinch, J., 2016. *The impact of perceived flood exposure on flood-risk perception: the role of distance*. *Risk Analysis*, [Online]. 10.1111/risa.12597, 3. Available at: https://www.researchgate.net/publication/299653364_The_Impact_of_Perceived_Flood_Exposure_on_Flood-Risk_Perception_The_Role_of_Distance#pf30 [Accessed 1 October 2020].

Pham, T. and Truong, V., 2016. *Floods in Mekong delta - causes and solutions*. *HO CHI MINH CITY UNIVERSITY OF EDUCATION - JOURNAL OF SCIENCE*, [Online]. 3(81). Available at: <http://journal.hcmue.edu.vn/index.php/hcmuejos/article/view/372/364> [Accessed 2 October 2020].

Pillai et al, 2018. BEN TRE Resilience Assessment Technical Study. *City Resilience in the Mekong Delta*, [Online]., 60. Available at: <http://documents1.worldbank.org/curated/zh/106851550049657601/BEN-TRE-Synthesis-Report-Final.docx> [Accessed 8 March 2021].

Prideaux, B., Cooper, M. and Timothy, D., 2009. *Introducing River Tourism: Physical, Ecological and Human Aspects*. *River Tourism*, [Online]. ISBN-13: 978 1 84593 468 2 book, 265. Available at: <https://books.google.cz/books?hl=vi&lr=&id=EpEvuRK4CHUC&oi=fnd&pg=PR5&dq>

=water+tourism+prideaux&ots=7k4MLWt6hw&sig=kTg2McTCC-f6MnA-iEEuzWVR6mE&redir_esc=y#v=onepage&q=water%20tourism%20prideaux&f=false [Accessed 9 February 2021].

Southon, M., 2018. *Flooded with risks or opportunities: Exploring flooding impacts on tourist accommodation*. *African Journal of Hospitality, Tourism and Leisure*, [Online]. 7(1), 27. Available at: https://www.ajhtl.com/uploads/7/1/6/3/7163688/article_36_vol_7__1__2018.pdf [Accessed 1 February 2021].

Sunlu, U., 2003. *Environmental impacts of tourism*. *Environmental impacts of tourism*, [Online]. 57, 9. Available at: https://www.researchgate.net/publication/275349611_Environmental_impacts_of_tourism [Accessed 5 October 2020].

TRAVEL VIETNAM. 2012. *KIEN GIANG*. [ONLINE] Available at: <https://www.travelvietnam.com/administration-units/kien-giang.html>. [Accessed 1 October 2020].

Vila, N., Toubes, D. and Brea, J., 2019. *Tourism Industry's Vulnerability upon Risk of Flooding: The Aquis Querquennis Complex*. *Environments*, [Online]. 6(12):122, 15. Available at: https://www.researchgate.net/publication/337619114_Tourism_Industry%27s_Vulnerability_upon_Risk_of_Flooding_The_Aquis_Querquennis_Complex [Accessed 1 February 2021].

VisitBritain. 2021. *Dealing with floods*. [ONLINE] Available at: <https://www.visitbritain.org/dealing-floods>. [Accessed 24 January 2021].

Wyss, R., Abegg, B. and Luthe, T., 2014. *Perceptions of climate change in a tourism governance context*. *Tourism Management Perspectives*, [Online]. 11(C):69-76, 8. Available

at: https://www.researchgate.net/publication/259643564_Perceptions_of_climate_change_in_a_tourism_governance_context [Accessed 10 January 2021].

8. Appendix

Flooding impact on tourism in the Mekong River Delta region Survey

"Dear managers of tourist accommodations in the Mekong River Delta region. My name is Nguyen Ngoc Quynh; I am currently a last-year student in Economics and Management at the University of Life Sciences in Prague, Czech Republic. I am finishing my Bachelor's thesis with the title: "Impact of natural disaster on tourism - flooding in Mekong River Delta region". This survey is practiced to cater to my research for this graduate thesis.

The survey includes 17 questions (multiple choice and personal opinion) related to the research topic and to collect additional objective views of each tourist accommodation. All information will be kept confidential, and the data will not be used for any other purpose.

I want to send my sincere thanks to everyone for your participation and contribution to this survey!"

Questionnaire

1. Which city in the Mekong Delta region does your tourist accommodation belong to?

- Can Tho
- Kien Giang
- Ben Tre
- Tien Giang

2. What is the name of your tourist accommodation? (i.e., Vinpearl hotel, Queenie's homestay, Sao Mai hostel, etc...)

3. When is the most crowded time of the year at your tourist accommodation?

- January – March
- April – June

- July – September
- October – December

4. When is the quietest time of the year at your tourist accommodation?

- January – March
- April – June
- July – September
- October – December

5. When does the annual rainy season start and end in the locality where you work?

6. How is the number of tourists changed during the rainy season in your tourist accommodation compared to other times of the year?

- Much smaller (decrease about 50%)
- Decrease about 30%
- Not much fluctuating
- Increase

7. How often do floods occur in the area of your tourist accommodation?

- Never
- Rarely
- Occasionally
- Moderate amount
- Extremely high frequency

8. What is your opinion on floods occurring in the tourist area where you work? Is it just an annual natural phenomenon, or can it change at any time?

9. How do you handle the reservation cost in your tourist accommodation in the flood season?

- Increase the price
- Decrease the price

- Keep the price unchanged
- Keep the price unchanged and add promotions

10. How is the number of tourists in your accommodation changed in the flood season?

- Increase
- Decrease
- Not much fluctuating

11. How is the impact of floods on accommodation bookings and rates changed?

- No effect
- Little effect
- Moderate effect
- Serious effect
- Major effect

12. Through question 11, could you please analyze a little bit about that effect? What are the advantages and disadvantages that your tourist accommodation has?

13. What about the tourist's actions during the time of flooding?

- Immediately leave
- Stay for a few days
- There were no actions

14. Through question 13, could you please give some specific examples? How do tourists react when they travel in the flood season?

15. With the potential for water tourism development in the Mekong Delta region, do you think floods are advantageous for this development? What is your opinion about this view?

16. In your opinion, who is the responsibility of the local flood risk management plan?

- Accommodation manager

- Accommodation owner
- Local government
- Municipal and central governments

17. According to you, in addition to the main impact on tourist accommodation areas, does flooding that occurs locally also affect the surrounding local communities? (environmental issues, population, work, labor ...)

Additional question

What about your tourist accommodation plan after floods?