

NEXUS OF TOURISM AND ENVIRONMENTAL IMPACT ASSESSMENT IN TEHSIL BAHRAIN, DISTRICT SWAT, PAKISTAN: CROSS-SECTIONAL RESPONSE AND PERCEPTION ANALYSIS

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ABSTRACT

Tourism enhances productive activities, it provide earning opportunities and contribute to the local and national economy. Besides, provision of conducive environment to the tourists and generating opportunities for the local people, it also result into adverse consequences. The researches related to environmental impacts of tourism results into mitigating the problems and proposing measures to enhance productive activities. The study focusses on the perceptions of local people and tourists related to impacts of tourism in the localities of Madyan, Bahrain and Kalam. Analysis was based on collecting primary and secondary data from the key stakeholders including individuals, government line departments and private businesses. Factor analysis was used to explore environmental impacts that explain residents' and tourists' perceptions about tourism. The study also focuses on exploring measures for mitigating environmental problems and improvements in tourism industry. Comparative analysis of different variables among the target localities was also made during the study. The results show that the environment is deteriorating due to tourism and local residents. The study also revealed that the residents of the area are aware of the negative environmental impacts. These impacts also include impacts like deforestation, loss of biodiversity, water pollution, air pollution, traffic congestion, and inappropriate disposal of solid waste, diseases associated with, water and air pollution and garbage disposal. The study shows that there is a need to conduct researches related to the theme and attention should be given to mitigate the adverse impacts of tourism which affect environment.

KEYWORDS: Environment, Human Response, Pollution, Tourism

1. INTRODUCTION

Travel is being characteristic of people in history from ancient civilizations (Arshad et al., 2017). At the point when individuals, and groups are going for short time, maximum one year to an area (Ali et al., 2020). A traveller is an individual who moves and visits regions outside of their area with differences in topography and climate for maximum up to an year either for enjoyment, business, or any other purpose (Arshad et al., 2017). Until 1983 the term tourist was used only for foreign tourist, when a person visit another country for rest and relaxation, since then the local people

travelling within the same country for tourism were also considered (Cunha, 2014). It can also be described as any individual who stays behind their normal environment for at least 24 hours (Ali et al., 2020).

According to the world, travel and tourism council (WTTC), it is an action for the aspiration of enjoyment outside the regular environment and their advantages are gotten by both the national economies as well as local communities (Manzoor et al., 2019). This sector has a great perspective for giving service which helps in the decreasing of poverty and sustainable growth (Arshad et al., 2017). Recently, most of the developing countries are giving importance to improving this sector, because it require fewer amounts to invest in it (Ali et al., 2020). With the increasing obstruction among the global tourist region, this sector is prevalent and growing: As in the developing countries, tourism contributes to generating revenue to the other sectors like telecommunication and agriculture as well (Leviski and Bulgaria, 2015).

According to WTO, travel and tourism is an act of wandering for the purpose of relaxation outside the day-to-day atmosphere. The advantages got by local and public economies ought to analyse accordingly (Ali et al., 2020). For economic development, the travel industry has been viewed as one of the driving forces (Manzoor et Al., 2019). The tourism industry is a social-financial agent including the movement of people groups to the spots outside of their locality either for amusement or some other reason (Arshad et al., 2017). The travel industry is related to a few controls and sciences; it is concerned with psychology research, social science, physical education, and geology (Leviski and Bulgaria, 2015). In the present circumstances the tourism industry is a well-established economic activity, every year big number of tourists visit different tourist destinations: according to the world tourism organization (WTO) estimates there were 689 million global travellers in 2001 which account for almost 10% of the total population (Mason, 2003). In the world the tourism industry is sharply developing and with the passage of time turned into foremost economic and recreational activity. In the present day world as one of the major business the tourism industry adds to work, upgrades pay, unwinding time, create opportunities, improve social trade and global fellowship (Egbali et al., 2011). The tourism industry is related to several disciplines and sciences like Psychology, Sociology, Physical education, Hospitality and Geography, respectively (Leviski and Bulgaria, 2015). It is a developed commercial activity which is having a great capacity for creating employment opportunities, enhances tax collection, and improve trade and market demand of local products. Travel is being an important activity of people in history since ancient period. Tourism is considered as an activity for the aspiration of entertainment outdoor in the common environment and their benefits are

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acquired by both the public economies and local communities (Manzoor et al., 2019). The tourism industry became a significant business and is having positive impacts on the financial development of a nation, apart from that the tourism related activity also cause negative impacts on environment and society. The effects of the travel industry can be divided into three significant classes like economic, environmental, and cultural. Certain factors can influence either or not tourism will result in negative environmental impacts. The impacts of tourism depend on the number and the concentration of the tourists, the type of tourism related activity, the kind of environment being affected in terms of sensitivity and the management and planning of the travel activity (Falcon and Munoz, 1999).

Pakistan is one of those countries which can attract travellers from the world due to diversity in topography and unique sceneries including high up mountains, stunning lakes, streams, shoreline domains, deserts, and cultural diversity (Qamar and Baloch, 2017). Pakistan remains a place of pleasure and nature including various perspectives like mountaineering, eco-tourism, hunting and fishing and observing variety of bird and plant species. The beautiful sceneries including fast running streams, waterfalls, untamed life pursuing deserts, trout fishing, and bird watching which pulls in experience and nature lovers to Pakistan (Israr et al., 2009). The mountains of Pakistan with snow-covered peaks and extended forest areas like in the Karakoram range, the second most raised peak of the world (K-2) is moreover orchestrated in Pakistan similarly progressed this region for the tourism-related activities (Qamar and Baloch, 2017). In the mountain areas of Pakistan, the stranded economy and low standard of living were considered to be going towards improvement with the introduction of current communication and transportation structures. In Pakistan the famous tourist destinations are found in Swat, Murree, Chitral, Hunza, Gilgit, Naran and Kaghan (Erwin, 2015). In northern areas of Pakistan, there are valleys admired for both their brand names and social significance pulling a large number of explorers consistently for excitement (Arif et al., 2019). The tourism related attractions further increases because the country is home to antiquated archaeological sites like Gandhara civilization, Indus valley civilization, Harappa, and the Mughal sites which are also making this area famous for pulling in more tourists. The number of tourists came to Pakistan showed an increase in the year 2016-17 after the militancy war and also showed high number of tourists from abroad (Arshad et al., 2017).

Swat valley is situated in the northwest of Khyber Pakhtunkhwa which is famous for scenic beauty with greenery and fast running streams, waterfalls, and rivers (Akbar et al., 2017). The valley is accomplished with natural beauty, rugged mountains, rivers, snowfalls, thick forests, distinct physiographic features, and historical aspects due to which it attracts many

tourists from all over the world (Ali et al., 2020). This region is having easy access to mountains, forests, and glaciers as well. In this region, Kalam is situated at the head of the valley and is considered an important tourists spot due to its unique landscape and variety of hotels (Figure 1 and 2). The valley is having unique natural features and rich cultural heritage. In Swat valley tehsil Bahrain is one of the seven tehsils covering the northern part of the valley, it consist of the most important tourist destinations of Swat valley. In Swat valley, Malamjaba is another important tourist destination with its beautiful landscape and is having easy access to the main road.

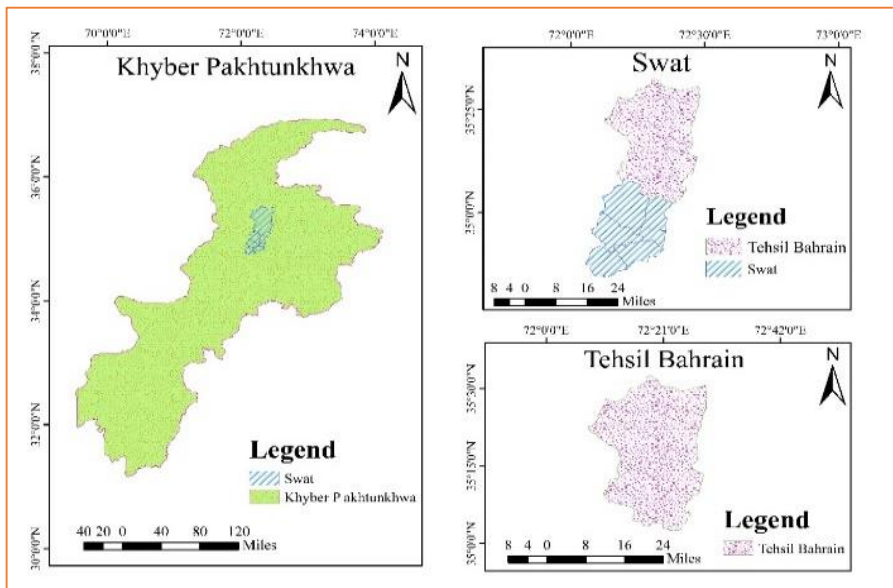


Figure 1. Location of the study area, Swat and Tehsil Bahrain

This region mainly attracts Pakistani tourists but the lower valley with Saidu Sharif is having many signs of Gandhara culture is also being visited by foreigners. Swat valley is having a beautiful natural landscapes with variety of features and different levels of hotels. In the recent years Swat valley shows considerable growth of tourists, the main tourists sites visited are Kalam, Saidu Sharif, Mingora, Miandam valley, Madyan and Bahrain (Erwin, 2015). Swat valley is among major tourists destinations in Pakistan due to its unique physiography and cultural heritage. In swat valley tehsil Bahrain is one of the seven tehsils and situated in the northern part, it is the important tourist destination in swat valley. For this study, tehsil Bahrain situated in the upper swat has been selected including three major tourist regions Kalam, Bahrain, and Madyan attracting many tourists every year. This paper is an attempt to investigate the environmental impacts of tourism in tehsil Bahrain and explore measures for mitigating environmental problems and improvements in the tourism activity as a whole. The

researchers hypothesized that in tehsil Bahrain besides contributions to the economy, tourism industry is adversely affecting the environment.

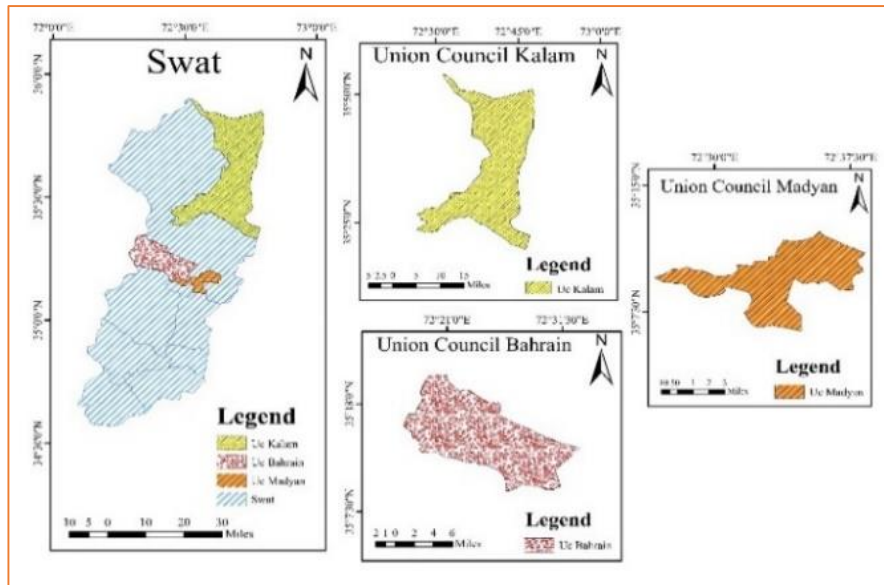


Figure 2. Location of the study area, Swat, Tehsil Bahrain and Target Union Councils

2. MATERIAL AND METHODS

The study was conducted in Tehsil Bahrain, situated in the northern part of Swat district. Besides the towns of Madyan, Bahrain and Kalam the settlements are rural built on mountain slopes, in the form of villages, hamlets and scattered houses. For the research work, three tourists' destinations of tehsil Bahrain were selected including Madyan, Bahrain, and Kalam. The purpose of the study was to explore the environmental impacts of tourism. After getting secondary data from various sources the primary data was collected in the target localities. Secondary data sources including review of research articles, books, journals, and data from the offices of different government departments. Further the data was also collected from different offices, libraries, internet sources, and published sources.

Primary data collection has been done via questionnaire survey, focused group discussions, and key informant interviews. A questionnaire with open and close-ended questions was designed for the collection of primary data from respondents. There were different questionnaires for local residents, tourists, shopkeepers, Tehsil Municipal Administration (TMA) staff members and hotel management. During data collection a total of 150 local residents, 30 tourists, 45 shopkeepers, 30 hotel managers and 10 government department representatives were interviewed. The

respondents were randomly selected during data collection. Among the local respondents the people living close to the tourist spots were interviewed. The data was also triangulated by collecting the same data through different tools. The data analysis has been done through the latest versions of SPSS and MS-Excel. For the analysis and descriptive statistics such as percentages, averages and graphs have been used. Arc GIS was used for mapping and display of various data.

3. RESULTS AND DISCUSSION

During the last few years, the travel industry has developed and diversified, making it an essential component of socio-economic development around the world (Saqib et al., 2019). Today, the importance of the travel industry and the need for directing explorations on it is due to the significant economic, social, and cultural role that it can play is known for everyone. It had to go and to quite possibly the main factor to make abundance, moving individuals and public assets (Egbali et al., 2011). The travel industry similarly upgrades the movement of other service sectors including hotels, restaurants, wholesale trade, retail trade, road and air transportation, and labors, for example, tourist guides (Leviski and Bulgaria, 2015). In Swat valley the tourism industry was brought to destruction during the militancy war in the years 2007 to 2010. After normalizing the situation the tourists were still hesitant to visit the area. The devastating flood 2010 also further deteriorated the tourism due to destruction of several bridges, roads and hotels. It was after 2014 that the national tourists started to visit the area for tourism. During 2015 and 2016 the record number of tourists were observed and since then the tourism sector looks to be restored. The following data is showing the analysis of impacts of tourism on environment.

3.1-Environmental Impacts of Tourism

In Swat valley, Madyan, Bahrain, and Kalam are important tourist destinations with variety of hotels and other commercial activities, receiving a large number of tourists every year. Due to the high inflow of tourists, these destinations are under environmental threat. The environmental problems related to tourism include air, noise, and water pollution, increase in the liquid and solid wastes, and increasing pressure on natural resources especially, forests, fresh water resources, fertile agriculture land and biodiversity. The unplanned construction of hotels, restaurants, retail shops and other built up further aggravate the environment related problems. The following figures show the analysis of various problems according to the perception of local residents and tourists.

3.1.1-Traffic Congestions

Due to tourism activities the inflow of tourists results into increase in the number of vehicles on road, it create traffic congestion. The analysis reveals the views of respondents about the increase in traffic congestion and the problems they face.

Table 1: Perception of respondents about the increase in traffic congestions

Respondents	Madyan				Bahrain				Kalam			
	Yes	%	No	%	Yes	%	No	%	Yes	%	No	%
Local residents	39	95	2	5	36	90	4	10	39	97.5	1	2.5
Tourist	Yes=22 respondent making 73%								No=8 respondents making 27%			

Source: Field survey 2021

The respondents were asked about the problem of traffic congestion due to increase in the vehicles on road due to tourism. Table 01 show, about 95% of the local residents of Madyan, 90% of Bahrain, and 97.5% of Kalam area were of the opinion that traffic congestion increases during tourism season while only 5% local residents of Madyan, 10% of Bahrain, and 2.5% of Kalam valley highlighted that traffic congestions do not increase up to creating nuisance at high level.

3.1.1.1- Problems associated with high traffic congestion

About 78% of local residents in Madyan, Bahrain, and Kalam are of the opinion that traffic congestions affect local transportation, there are problems to school-going children in tourism season while crossing the road, apart from that, local residents face the problem to timely treat and hospitalize their patients because the roads are too small and there is no way for the ambulances to handle the emergency situations on time. Out of the total 5% were of the opinion that, in tourism season, due to heavy traffic the TMA staff face problems in waste collection and other activities and traffic police to manage the congestions and the roads are blocked daily for several hours.

About 30% of the government servants were also of the view that, in tourism season, due to heavy traffic jam they are waiting for a long time on roads and do not reach on time to their schools, colleges, and offices. They further added that heavy traffic jams also create noise, air, and dust pollution in bazaars as well as in the markets. In Bahrain, 35% of local residents told that traffic jams create overcrowding in the region which create different problems for them. They further added that there are no

parking facilities with most of the hotels in Bahrain and tourists park their vehicles on roads which also disturb the adjacent shops and houses. In Bahrain and Kalam 40% of the respondents among local people were also of the view that most of the local residents are residing in the peripheries of commercial areas. They need to go to markets to get the items of daily use, in summers due to high inflow of tourists they take more time to reach to market and to back to home due to traffic jams.

The local people and tourists also told that the bridges in the surveyed localities are also narrow and due to the passage of vehicles from one side at a time create traffic jam and the lines of vehicles wait for longer time to cross the bridges. The local respondents also told that in the surveyed localities especially Kalam the government servants belong to other areas especially the down valleys villages of Swat district. During the high inflow of tourists they face problem to reach their duty stations on time. Ten percent of the local respondents were also of the view that air, and noise pollution, smell, and sometimes loud music in tourists' cars also affects the locals living close to the main road. Other problems faced by local residents highlighted due to heavy traffic jams are sometimes security issues, increase in pollution and temperature increase affecting the health of local people, and the people do not get on time towards their businesses on time because of heavy traffic in tourism season.

3.1.1.2- Noise pollution

Excessive increase in traffic congestions is also creating noise pollution which affect the lives of local communities. Local residents were of the view that noise pollution disturbs the mental conditions of patients in the houses as well as the working hours of both the local people and business communities.

Table 2 Perception of respondents about noise pollution.

Traffic creates noise pollution												
Respo ndents	Madyan				Bahrain				Kalam			
	Yes	%ages	No	%ages	Yes	%ages	No	%ages	Yes	%ages	No	%ages
Local reside nts	38	92.6	3	7.4	33	82.5	7	17.5	25	62.5	5	37.5

Source: Field survey 2021

Among the local residents, majority of them including 92.6% in Madyan, 82.5% in Bahrain, and 62.5% in Kalam region highlighted that traffic creates noise pollution, while only 7.4% local residents of Madyan, 17.5% of Bahrain and 37.5% of Kalam valley are of the view that traffic does not create noise

pollution for them, these people live and work a bit far from road side (Table 02).

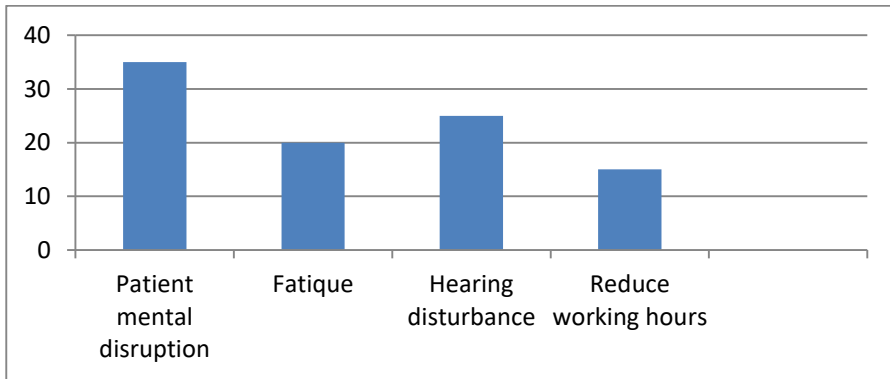


Figure 3: Effects of noise pollution on the health of local residents (Madyan).

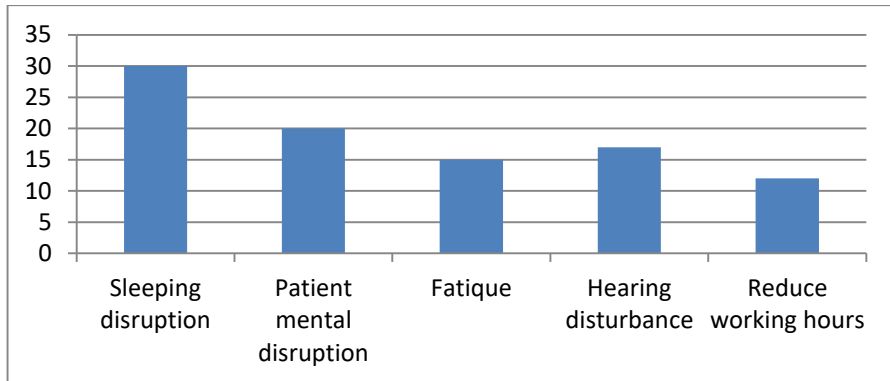


Figure 4: Effects of noise pollution on the health of local residents (Bahrain)

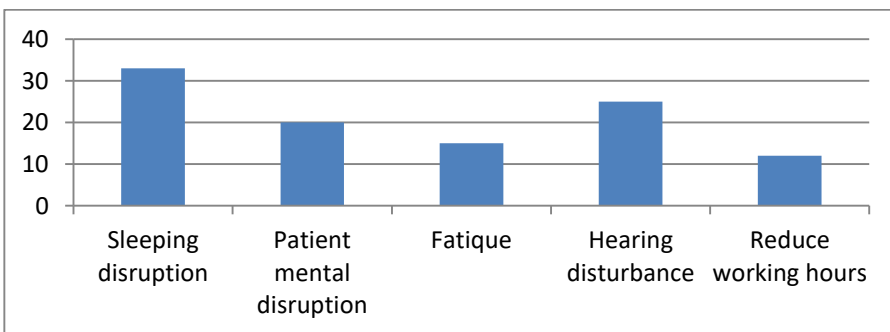


Figure 5: Effects of noise pollution on the health of local residents (Kalam)

Local residents highlighted the effects of noise pollution on their health. In localities including Madyan, Bahrain, and Kalam they marked the impacts like noise pollution disrupt our sleeping hours, the patients in the houses are mentally disrupted because of noise, the people are feeling fatigued, disturb their hearing capacity, and some of them also marked that it reduces

their working hours. In Madyan 85%, Bahrain 75%, and in Kalam 82.5% people highlighted that noise disturbs their sleeping conditions during morning and afternoon in tourism season. Further, 85% of local residents in Madyan, 50% in Bahrain, and 50% in Kalam regions were also of the view that due to noise pollution in tourism season the patients in houses are mentally disrupted and their illness conditions can be further increased. They need to sleep and to take rest but due to extreme noise in tourism season, they are mentally disrupted and their illness increases. Besides, local residents, including 48% of Madyan, 37.5% of Bahrain and Kalam also highlighted that due to noise pollution, they are feeling fatigued in tourism season and the people are not ready to do their work on time because of fatigue. Local community including 70% in Madyan, 42.5% in Bahrain and 62.5% in Kalam regions are also of the view that they are living close to the main road and tourist spots and due to extreme noise in tourism season on roads, bazaars, and tourist spots their hearing capacity is disrupted and they are disturbed during working time in houses, as well as in offices. Some of the local communities including 36% from Madyan, 30% from Bahrain and Kalam regions also highlighted that due to extreme noise during tourism season both in bazaars and tourist spots their work is disturbed in schools, colleges and in offices near to the main road, bazaars and tourist spot (Figure 03, 04 and 05).

3.1.2- Impacts on Solid wastes

Due to the inflow of tourists, the quantity of solid wastes increases in the region affecting the aesthetics and the environment. It was observed that garbage sharply increases during tourism season at tourist spots causing a lot of infectious diseases and smell which also affects the health of local communities.

Table 3 Perception of respondents about garbage increase.

Respondents	Madyan				Bahrain				Kalam			
	Yes	% ages	No	% ages	Yes	% ages	No	% ages	Yes	% ages	No	% ages
Local residents	39	95	2	5	36	90	4	10	38	95	2	5
Tourist	Yes=21 respondent making 70%,								No=9 respondents making 30%			

In the surveyed localities the local residents including 95% in Madyan, 90% in Bahrain, and 95% in Kalam regions highlighted that garbage increases during tourism season especially in summer form June to August. While 5% local residents of Madyan, 10% of Bahrain and 5% of Kalam regions are of the view that garbage does not increase during tourism season, (Table 03), these people mostly live in the peripheries of towns.

3.1.2.1-Impacts of solid wastes on environment

Excessive generation of garbage at tourist spots is having adverse impacts on the environment. It creates smell and affect the normal rate of breathing. It also create breeding points for flies, mosquitos, and insects as well as pollute fresh water resources and blockage of drainage and sewerage lines are also associated with increase in garbage.

Table 4: Impacts of garbage on the environment.

Impacts	Number of respondents	Percentages
Smell	106	75
Insect, mosquito and flies birth	77	55
Infectious diseases	75	53
Others (Water pollution and blockage of waste canals)	17	12

Source: Field survey 2021

Residents of Madyan, Bahrain, and Kalam were of the opinion that garbage increases in the tourist spots in the tourism season. The excessive increase of garbage adversely affects the natural environment. About (75%) of the residents were of the view that with the increase in garbage produce inappropriate smell in the surroundings which create nuisance for people and may also result in several diseases. Besides, 55% of the residents also highlighted that garbage increase is resulting increase in insects, mosquitoes, and flies in the environment which is also affecting the normal atmospheric conditions of the environment. Out of the total 53% respondents also added that with the excessive garbage increase several infectious diseases are also common in the residents living close to the tourist spots. Other 12% of the locals further added that when garbage increases in tourism season at a tourist spot, the garbage and wastes are directly disposed into the river which is resulting into increase in water pollution. Further, they added that with the increase in the garbage the drainage and sewerage lines are filled and blocked. The sewerage waste and other liquid waste flowing on streets and roads and the environment become degraded (Table 04).

3.1.2.2 -Common diseases associated with garbage pollution

The local communities also highlighted common diseases associated with garbage pollution. It include Malaria, typhoid and skin allergies and diseases. The frequencies of malaria and typhoid recorded high as

compared to skin allergy. Other diseases which are common in the local community are diarrhoea, vomiting, tuberculosis, fever, cough, flute, asthma, and hepatitis.

Table 5: Common diseases associated with garbage.

Diseases	Number of respondents	Percentages
Malaria	87	72
Typhoid	94	78
Skin allergy	48	40
Others (Diarrhea, Vomiting, T.B, Fever, Cough, Flute, Asthma and hepatitis.	25	21

Source: Field survey 2021

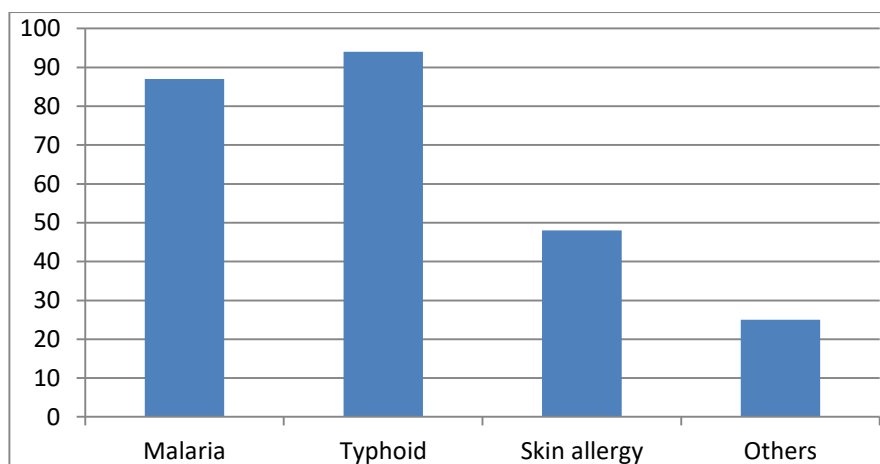


Figure 6: Common diseases associated with garbage pollution

Increase in garbage results into increase in the frequency and intensity of certain diseases. Table 05 and Figure 06 is showing the diseases associated with garbage pollution including malaria, typhoid, and skin allergy. Excessive generation of garbage leads to environmental problems which are causing health issues. The responses against typhoid are recorded which are much higher than Malaria. The other diseases including diarrhoea, vomiting, tuberculosis, fever, cough, flute, asthma, and hepatitis falls in the other category.

3.1.2.3- Solid waste generated in hotels

The amount of garbage that comes out of hotels was also studied during data collection, the garbage of hotel is purely associated with tourism activities. It was observed that the number of garbage increases in the

tourism season in the hotels. The maximum amount of garbage that comes out from hotels reaches up to filling of ten dustbins per day in some hotels, the size of dustbin was taken, the normal dustbin installed by TMA.

Table 6 Garbage comes out from hotels (Per day)

Amount of garbage (Dustbins)	Responses recorded	Percentages
1-5 Dustbins	25	84
6-10 Dustbins	5	16

Source: Field survey 2021

The response of hotel managers regarding generation of garbage from hotels per day was recorded through questionnaires. It was recorded that 84% of the hotel managers were of the view that 1-5 dustbins of garbage is coming out from hotels daily while 16% of them also explained that the garbage comes out from hotels ranges from 6-10 dustbins daily in tourism season (Table 06).

3.1.2.4- Garbage disposal by hotels and shops

The response of the hotel managers regarding the disposal of garbage was also collected through questionnaires. Out of the total 2% responded that the garbage is disposed to an open plot near the hotel, while 26% dispose it to a dustbin installed by TMA, while 4% dispose it to the river, 2% dispose it to a fresh water stream, and only 3% against dumping ground was recorded. Among the shopkeepers 55.5% of the shopkeepers were of the view that the garbage is disposed to a dustbin installed by TMA. The remaining 44.5% of them told that there is no dustbin near the shop and they dispose it to the main road directly or nearby plot and water stream (Table 06).

Table 7: Areas of garbage disposal

Area of disposal	Number of observations			
	Hotels	Percentages	Shopkeepers	Percentages
Open plot	2	6		
Dustbin	26	87	25	55.5
River	4	13		
Stream	2	6		
Others	3	10	20	44.5

Source: Field survey 2021

3.1.2.5- Garbage collection:

The garbage collection from the main road and designated points and dustbins is the responsibility of TMA Bahrain. In this regard the 87 % of the surveyed hotels responded that the TMA collect solid waste regularly on

daily basis. The remaining were of the opinion that the waste is being disposed by the hotel staff or village council.

Mainly very low frequencies of local bodies and the own staff of hotels are recorded which is less than 7% each (Table 08). Apart from that among the residents 54% are of the view that TMA collects wastes timely on daily basis during non-tourist months (September to May) while 46% of them also highlighted that TMA does not collect wastes on time in the non-tourism season. Besides 66% of the residents also added that TMA collect wastes on daily basis during tourism season (June to Aug) while only 34% of them oppose the opinion and said that TMA does not collect wastes timely during tourism season.

Table 8: Garbage collection from hotels

Staff collecting garbage	Number of observations	Percentage
TMA	26	87%
Village Council	2	6.5%
Own staff	2	6.5%

Source: Field survey 2021

3.1.2.6- Role of Tehsil Municipal Administration (TMA) in solid waste management

The data related to solid waste collection and disposal was collected from the staff members of TMA Bahrain through questionnaires and interviews. The TMA staff members reported that besides economic benefits of tourism there is also drastic increase in solid wastes during the summer season which is considered tourists season. According to the estimate of TMA staff members the garbage increases by 50% to 70% during the peak tourists' season, normally the waste collected on daily basis is almost 3 tons while during the tourists' season it reaches up to 5 tones.

They also reported that in the tourism season the cost of waste collection and disposal increase by 20 %, it include more trips and fuel charges of vehicles used for waste collection. Besides cost, the summer season is more intensive to work long hours and high workload for the staff members responsible for waste collection. According to TMA staff members there is no any scientifically designed waste disposal sites, but they allocated different points in the whole areas for solid waste disposal. These are mostly depressions, open plots a bit far from settlements. They also reported that the disposal of sewerage and sewage waste directly to the river and other fresh water resources is a common practice by hotels and houses which pollute water and degrade the environment.

3.1.3. Other environmental problems

During data collection the responses related to general environmental problems related to tourism was also recorded. According to table 09, 22% respondents told the tourism activities indirectly results into deforestation, 34 % told it increase problems for biodiversity by disturbing their habitats, and the people also reported the environmental problems including air pollution, water pollution, soil pollution, unplanned construction of commercial activities especially hotels, and increase in water borne diseases. Out of the total respondents 91% told that tourism causes air, noise and water pollution, and 87 % were of the opinion that tourism negatively affect the aesthetics of the area.

Table 9: Other environmental threats associated with tourism activities

Environmental threats	Number of responses	Percentages
Deforestation	27	22 %
Loss of biodiversity	41	34 %
Generation of wastes	61	50 %
Air and noise pollution	53	91 %
Unplanned construction of resorts and restaurants	61	44 %
Others (Waterborne diseases)	2	1.6 %

Source: Field survey 2021

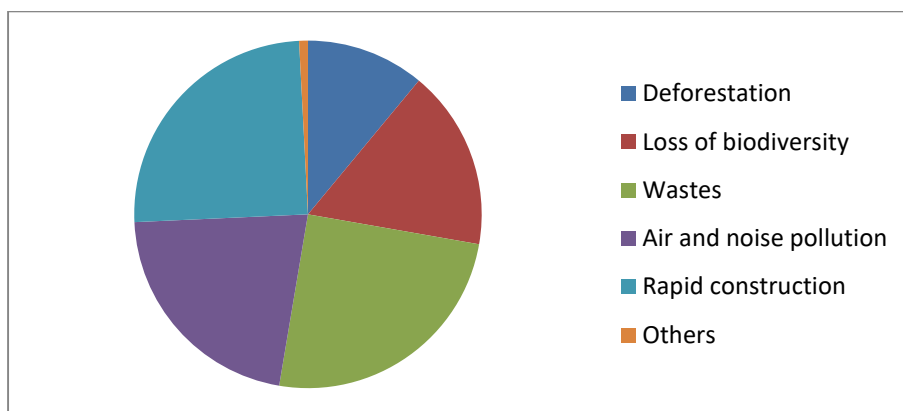


Figure 7: Other environmental threats associated with tourism activities

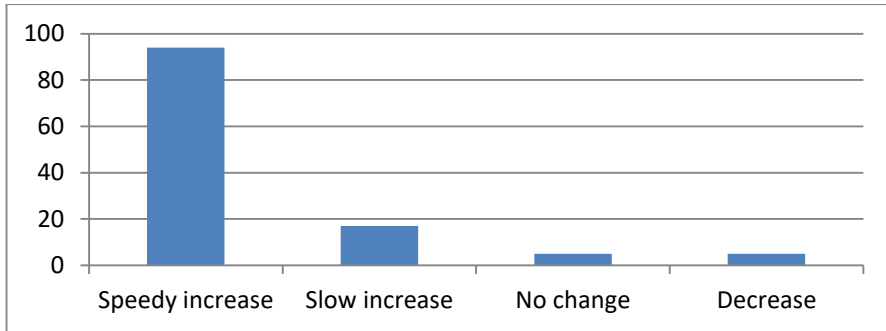


Figure 8: Tourism infrastructure restaurants and parks

During the survey 78% of the respondents were of the opinion that with the passage of time the infrastructure related to tourism is sharply increasing including hotels, parks and other recreational and commercial activities. Out of the total, 14% told that the increase in tourism related infrastructure is slow while less than 2% were of the opinion that there is no change recorded in tourism related infrastructure. The responses were recorded in different areas and the changes in the responses show the situation in the specific locality.

4. CONCLUSION

Tourism is considered a productive activity for recreation and socioeconomic development. Besides that due to lack of planning and proper management the tourism activities results into environmental degradation. The tourism industry also required to have good infrastructure, good law and order situation and political stability. In Pakistan due to some unanticipated natural calamities and poor law and order situations the tourism sector shows ups and downs in development. Swat is famous for unique scenic beauty throughout the world, and possess great potentials for tourism. In Swat valley the tourism sector is playing very important role in the local economy, it create business and job opportunities and contribute to the socioeconomic development of the region. Apart from that the tourism sector also result into environmental degradation due to increase in traffic, solid and liquid wastes, pollution, unplanned built up. The study also assessed the problems faced by tourists and their perception related to environmental impacts of tourism. More than 90% tourists faces the problem of traffic congestion to reach to different tourist destinations. The tourists also recorded the problem of inappropriate management of solid and liquid wastes, they were also of the opinion that due to inappropriate waste disposal the aesthetic value of tourist spots is negatively affected.

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Apart from having opportunities related to socioeconomic development, the local people also faces different types of environmental and social problems due to the inflow of tourists. The traffic jams during tourist season disturb their routine life to go to work places, hospitals and economic activities. The loud music, sometimes dancing on roads and smoking at public places also create problems for them to travel with women and children. The local shopkeepers were also of the opinion, however due to tourist inflow the sales increases but environment and culture is adversely being affected. The tourists don't care to properly dispose solid wastes and to value local culture at public places. Due to increase in different environmental issues including inappropriate waste disposal, air and water pollution result into multifaceted health problems including water borne diseases, malaria, typhoid and skin related problems. The tourists activities also result into illegal built up of commercial activities including encroachment towards river, streams and public property. The encroachment towards water bodies make the tourists vulnerable to flash floods, while the construction on mountain slopes can increase the risk of land sliding. The government line departments including local administration, tehsil municipal administration and police are managing the activities. They are having their own limitations and the high inflow of tourists during peak seasons further enhances the problems. The sewerage and sewage waste is also being disposed to the river or streams by the hotels which causes water pollution. In the last it can be summarized that tourism is an important activity for socioeconomic development and recreation. But there is a dire need to frame appropriate policies, plans and to have effective implementation strategies for enhancing the productive activity and mitigating the adverse environmental impacts. It will preserve the precious resources including water, forests and aesthetics and will further improve tourism by attracting international tourists.

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