Chapter I

Outline of the Research
1.0 Introduction:

The Shi-Ahmad wildlife refuge in Iran is established 10 years back to maintain biodiversity. However, it is facing problems due to conflict between local people and Department of Environment in Iran. It can be resolved with proper conflict management technique. Can ecotourism be a solution for this issue? To what extent it would be useful to benefit local people? Is it feasible in the given circumstances? With these research questions in mind the present study entitled, “Feasibility of ecotourism for conservation of environment and economic incentives. A case study: The Shir-Ahmah wildlife refuge has been undertaken. It is an attempt to find out answers to such questions on the basis of information gathered from various sources and the data collected by the researcher himself. It may be quite in place to review meaning, definition and practices of ecotourism, tourism and their impact on protected areas in the beginning of the study.

1.0.1 Tourism and Ecotourism:

Ecotourism has become popular industry in the world over last 15 years not only in the service sector, but also in the government sector and academic areas (Kitzinger, 1995; Blamey, 1997). Proposed definitions vary from very general to highly specific. The most accepted definition was introduced by Honey (1998) in her book; “Ecotourism and Sustainable Development: Who owns the paradise”, is the most comprehensive overview of worldwide ecotourism practices today. There are several other considerations of ecotourism definitions some of which are listed below:

Hetzer (1965) claim that ecotourism is tourism based principally upon natural and archaeological resources such as birds and other wildlife, scenic areas, reefs, caves, fossil sites, archaeological sites, wetlands, and areas of rare or endangered species.

Valentine (1991, 1993) defined ecotourism as nature-based tourism that is ecologically sustainable and is based on relatively undisturbed natural areas; is non-damaging and no degrading; provides a direct contribution to the continued protection and management of protected areas used; and is subject to an adequate and appropriate management regime.
Bjork, (1995) concluded that ecotourism can be express as a tourist activity or visiting the natural area for research and study or amused by existing nature and culture, when not disturbing resources and helpful for conservation of genuine environment.

Other authors like Ceballos-Lascurain (1993) believed that ecotourism must improve the economy of the local host community. Definitions presented more recently have often been of a multi-focus character. For example, the importance of customers, i.e., tourists, must not be forgotten but it is also important to include local people in the development plan. The Tourist Authority of Iran provides the following definition of ecotourism:

"Ecotourism is visiting of tourism from a national park, wildlife, protected area and totally natural environment when enjoying the nature, learn about natural resources, and protect the environment as well as participation of local people in tourism management, for example, participation in decision making about the tourism business or providing other services which helpful to income in proportion to the degree of their involvement" (Tourism Authority of Iran, 2011).

The mentioned definition has been accepted by many countries in the world. Several studies have been done regarding tourism and ecotourism, its economic benefits for local community or strategy to maintain the operation of all kinds of protected area system (Ballantine, 1991; Fennell, 1990; Blangy and Wood, 1992).

The most recent definition of ecotourism is any tourism that takes place in relatively undisturbed areas and which satisfies the following principles:

- Minimize impact.
- Build environmental and cultural awareness and respect.
- Provide positive experiences for both visitors and hosts.
- Provide direct financial benefits for conservation.
- Provide financial benefits and empowerment for local people.
- Raise sensitivity to host countries' political, environmental, and social climate (The International Ecotourism Society, 2007, p.2).

As much as there are several definitions for the term "ecotourism", there are also several definitions for the term "ecotourist". Ballantine and Eagles (1994), has suggested
one of the most precise operational definition of ecotourists, using three criteria to identify them: (1) they must have stated that learning about nature is very or somewhat important to them in a questionnaire, (2) they must have stated that wilderness / undisturbed nature is very or somewhat important to them and (3) they must have spent at least one third of their vacation on Safaris in Kenya (the latter criterion was for one specific study and can be modified in dependence of the research specifics).

Kerstetter, Hou and Lin (2004), in their study on ecotourism in Taiwan, defined ecotourists as individuals engaging in responsible travel that conserves natural resource areas in Taiwan, operationalize them as visitors to sensitive coastal wetland areas. Blarney and Braithwaite (1997) defined ecotourists as "members of society who have an interest in spending some of their holidays in the next 12 months increasing their understanding and appreciation of nature". The experiences in Indian scenario have shown that ecotourism is beneficial and hence ecotourism policy has been designed. It is also observed in micro level study of Pune district that local population can be benefited if ecotourism principal of followed (Jaybhaye, 2008). He has also proved that ecotourism can enhance satisfaction index of tourists as well as local villagers. The concept of establishing alternative travel circuit routes can reduce crowding at certain destinations that it may be any national parks, protected area, wildlife refuge, etc.

1.0.2 Tourism and Ecotourism in Iran:

The landscape of Iran is diverse, providing a wide range of activities from hiking and skiing in the Alborz Mountains, to beach holidays by the Persian Gulf and the Caspian Sea. Over the next five years a number of tourism-friendly infrastructure projects will be undertaken on the Persian Gulf island of Kish, which at present attracts around 1m visitors per year, the majority of whom are Iranian (Iran Travel and Tourism Forecast, 2008). According to the Iranian official mentioned 1,659,000 tourist visited Iran in the year of 2004 that consists of visitors of natural area, religious pilgrims and family visitor. Most of these visitors came from Central Asia, North America, Europe countries such as Germany, Italy, French, Bulgaria, Belgium and etc. and even from India, Pakistan and China. The most popular tourist destinations are Esfahan, Mashhad, and Shiraz. There is
undoubtedly great scope for increased visitors from the Islamic world, and possibly also from non-Muslim countries with which Iran is developing business and political links, such as China and India. Most of the tourism visas that generated by Iran, obtained by Asian Muslims who intended to visit important pilgrim's sites like Mashhad and Qom. Also many tour organizations from Germany, Italy, French and etc. came to Iran to visit archaeological sites and monuments.

Between years of 2004-2008 number of foreign tourism in Iran was growth 100 percent and reached up to 2.5 million specially visitors from Germany. Tourism industry in Iran, despite prevalence of the initial backgrounds for its development including culture, civilization, history and specific nature, still has not been successful in gaining its appropriate place in the list of world tourism destinations. Under the present conditions in the world, tourism industry, after the oil and auto manufacturing industries is considered among the most high-income industries. For this reason, in the battle of attracting tourists and capital in the world, countries would not hesitate to benefit from any such opportunity.

Ecotourism activities are gradually becoming popular in Iran. Although Iran with diverse climate and extraordinary biodiversity, lakes, tourism educational program have contributed to the slowing of the development of ecotourism in the country. Considering Iran in one of those countries who have highest biodiversity's in the world, has 514 birds, 172 mammals, 199 reptile, 20 amphibian, 173 fishes and 900 plants species (Environmental statistic, 1994).

Iran Cultural, Heritage, Handcraft and Tourism organization (ICHHTO) in 2006, created a committee of ecotourism as a special team focusing on ecotourism in the country that consists of Cultural, educational and ecotourism activists. At the moment, 29 provincial ecotourism committee that representatives of 29 provinces in Iran are active on ecotourism issues.

The snow covered mountains, tropic climate in the Persian Gulf and Sea of Oman area, the rainforest near the Caspian Sea, the deserts and mountain ranges spread all over
the country offer so much diversity is that could be observed in many countries put to
getter. In short, we have, 8000 species of wild plants, 174 species of fishes, 20 species of
amphibians animals, 206 species of reptiles, 514 species of birds, 168 species of
mammals, 25,000 species of insects, 358 species of butterfly mainly observed in 16
national parks, 13 national natural monument, 33 wild life refuges, 90 protected areas, 88
no hunting zone, 22 international wetlands, 9 biosphere reserves and 91 forest reserves.
The Islamic republic of Iran comprises a land area of 1.64 million km². It is classified in
the 17th largest country in the world. It lies in the northern part of the temperate zone
(Department of Natural Resources-Iran report, 2012). The average altitude is over
1200m. The relief and climatic variation have given rise to five biomes according to
following regions:
1- Arid and semi-arid plains and desert.
2- Arid and semi-arid mountains.
3- Semi arid Zagros Mountains.
4- Semi humid and humid Arasbaran and Hyrcanian mountains and Caspian plain.
5- Dry southern coastal plains with high humidity.

Thus, brief definition regarding tourism and ecotourism has been clarified.
Generally tourists are attracted to the living part of nature and environment. They try to
be responsible so that environmental conservation may be achieved. Of course it requires
increasing the level of environmental awareness among all the stakeholders. Ecotourism
involve travel to destination that have natural attraction like flora, fauna, cultural
heritage, etc. Usually these destinations would be National parks, Protected areas,
wildlife Refuges, etc. Following paragraph provides definition for some of these
protected areas for better understanding different tourism destination.

1.0.3 National Parks:

Dower in 1945 had defined national park in his report that forwarded to the UK
governments. He described a national park as: "an extensive area of beautiful and
relatively wild country in which, for the nation's benefit characteristic landscape beauty is
strictly preserved while established farming is effectively maintained" (Dower, 1945.)
His definition was later embellished, primarily to reveal the full extent of the aims of national parks:

"A national park is an area of natural and unusually unenclosed country, which has been protected by law against spoliation, and in which facilities have been provided for its enjoyment by the public." (Chessell, 1946, p.16).

The International Union for Conservation of Nature that held in New Delhi- India definition regarding national parks, globally was approved in 1969. The Assembly identified three essential characteristics of a national park and defined it as:

A relatively large area where:
1. one or several ecosystems are not materially altered by human exploitation and occupation, where plant and animal species, geomorphological sites and habitats of special scientific, educative and recreative interest or which contains a natural landscape of great beauty, and
2. The highest competent authority of the country has taken steps to prevent or to eliminate as soon as possible exploitation or occupation in the whole area and to enforce effectively the respect of ecological, geomorphological or aesthetic features which have led to its establishment, and
3. Visitors are allowed to enter, under specific conditions, for motivational, educative, cultural and enjoying purposes (Osten, 1972).

National parks are therefore, to be expected to be large, untouched (or relatively so) areas of natural environment with significant features, protected at the highest level, and allowing among other uses, that of recreation (tourism).

The modern concept of a "national park" is widely attributed to the United States with the establishment in 1872 of Yellowstone National Park, with the aim of preserving a pristine wilderness which excluded development activities in the park. National park and world heritage are well-known labels to many people. From an international perspective, such labels often represent places where pristine or unique natural environments are accessible, often with some degree of development or infrastructure. This is similar to what is known as markers in tourism research, i.e., items that carry information about tourism attractions (MacCannell, 1999). There are reasons to believe that parks and protected areas represent markers to certain groups of tourists. In a study
of national park designation at eight sites in the US. Weiler and Seidl (2004) estimated a six percent increase in visitor numbers as a consequence of the national park designation. The fame of many national parks and natural areas of the world is a powerful magnet to overseas visitors and is a major export earner. Where national parks and natural areas provide recreational opportunities close to cities, or where they preserve unusually spectacular scenery, the benefits are clear. In addition, national parks have substantial international economic implications arising principally from the tourism they generate (Manning, 1980). Wilderness areas and areas of natural beauty constitute an important part of the tourist industry.

Evidence suggests that demand for outdoor recreation as part of the in-bound tourism/travel industry on national parks and protected areas is likely to increase in the coming years. It is currently estimated that around 55 percent of all visitors’ worldwide travel to national parks (IUCN, 2005).

1.0.4 Protected Areas:

The world database protected area (WDPA) was established in 1981 to aim of protection and preservation of protected area in the world. It’s a joint project between UNEP-WCMC and ICCN’s world commission on the protected areas. The WDAD is one of most important and accomplished dataset on the world’s terrestrial and marine projected area, featuring projected area in every country. The protected area in the world had increased over the past fifty years in number and vast. Totally 40,000 protected areas that cover 10 percent of the world that equivalent in size to combine of India and China that cause attracting tourist and visitors (Drimal and Common, 1995, Pigram and Jenkins, 1999; Eagles and McCool, 2002).

Protected area play very important role for development of rural area also serve a multitude of purpose as biodiversity reservoir, and help to cleans air and water in the nature area. The best achievement to increasing in number and vast of protected areas is in Africa with 7.1 percent of total land and has one of the world's largest trans boundary protected areas shared by South Africa, Zimbabwe and Mozambique, the Great Limpopo Transfrontier Park.
1.0.5 Wildlife Refuge:

Objective of the wildlife refuge is protecting natural environment where condition are reliable for reproduction and breeding of the existence species or community of flora that growth in that particular area or even migratory flora and fauna. Also it can be formed in private areas as long as it is possible to make compatible the objectives of the unit with the utilization of the land of the natural resources of the location by the landowners. There must be regulation on the behavior of tourists as stated by several scholars like Jaybhaye (2006) and also by government (Federal Law in Brazil, 2000).

Wildlife sanctuary is another name of wildlife refuge that is naturally occurring sanctuary, such as island, that can provide protection of species against hunting, predation or even competition (Lake Merritt - Wildlife Sanctuary, 2011). It is the ecological space self-supporting mainly because low level disturbances by human activities such areas provide mature food chain which has attained equilibrium through ages. There are several agencies advocating protection of such areas to preserve biodiversity.

Wildlife refuge mission is to manage a natural network of land and water for conservation, management and where appropriate restoration of fish, wildlife and plant resources and their habitats (National wildlife refuge association). It is trying to manage all habitats range such as wetland, coastal and marine area. National wildlife refuge is also recognizing as restoration. The United States Fish and Wildlife Service (USFWS), designed wildlife refuge for certain protected areas of the United States. It is the system of public land and water set aside to conserve American’s fishes, wildlife and plants (United States Fish and Wildlife Service).

1.0.6 Protected Areas in Iran:

The Iranian Department of Environment is a governmental organization that works under direct supervision of the President. The Hunting Club of Iran was the first establishment of this organization that established in 1956 and by 1971 the organization name changed to this current one. The Department of Environment in Iran, maintains a list of four type of protected area as following:

- 23 national parks including, Kavir, Taftan and Tandooreh national park.
• 32 National Natural monuments including Mounts Damavand, Sabalan, Taftan and Alam-Kuh
• 37 wildlife refuges including Hamoon, Minadarreh, Shir-Ahmad and etc.
• 117 Protected areas including Mounts Dena and Alvand, Lake Parishan, Jajrood, Karkheh, Haraz Rivers and Acrasbaran.

The protected areas play very important role in this country. Almost all of biodiversity sites in Iran become protected by government as protected area (Makhdoum 2008; GIRI and others 2004). Since national biodiversity indicators are not fully developed in Iran and their impact monitoring are poor so assessment of biodiversity trends is very difficult (IFNRCBD, 2010). However, protected areas are facing increasing threats. It is obvious, however, that the biodiversity of Iran in different ecosystems and at different levels is decreasing (see IFNRCBD 2010; NBSAP 2000; Makhdoum 2008; Farhadinia and Hemami 2010; Ahmadzadeh and others 2008; Esfandabad and others 2010; Ziaie 2008; Darvish 2011).

In 1950 due to overexploitation, overgrazing, and overhunting in Endemic-rich grasslands, coastal areas, forests, wetland and rivers the biggest risk occurred to Iran's biodiversity and all protected areas (Kolahi 2005a,b; Croitoru and Sarraf 2010; Aminzadeh and Ghorashi 2007). Mismanagement, unchecked urbanization, pollution, dam construction, deforestation, draining of wetlands, poaching, and excessive irrigation are often done without consideration of environmental impacts and are the most widespread threats to biodiversity. Transformation and destruction of ecosystems occur across Iran (Firouz 1972, 1976).

Totally 1791 sq. km areas of Iran is Protected by Government that 7.08 percent of these protected areas are land and 1.71 percent are marine.

1.0.7 Wildlife Refuge in Iran:

In 1956 the first conservation law in Iran passed regarding protected region, that hunting would be prohibited in the protected areas. Later on 1967 proposal for the creation of the wildlife parks were advanced in the name of (Hunting and Fishing law) in parliament and Department of Game and Fish were established. Restrictions on hunting
and fishing were enforced, while grazing, woodcutting, and the like were curtailed in accordance with regulations enacted jointly by the Game and Fish Department and the Ministry of Agriculture and Natural Resources (The Iran’s Department of Environment, 1984). The classification of the wildlife parks was applied to those reserves within which human habitations and exploitation of resources had been excluded through a process and upgrading protected region (Firouz and Wambold, 1976).

In 1971, a new Department of the Environment (Sazman-e hefazat-e mojit-e zist), into which the Game and Fish Department was incorporated, was created by an act of the parliament. The Department of Environment in Iran defended wildlife refuge as area of preventative habitat type set aside (The Department of Environmental, Iran 1988):

1. To management and conservation of native wildlife and protection of its habitats that includes: Feeding, Breeding, Spawning, Resting, Shelter and other need of wildlife.
2. All kind of fishing, hunting, capturing, poisoning and collection of flora are prohibited in this kind of area.
3. Department of Environment shall be restricted, eliminated or prohibited all kind of human settlements in this kind of area.
4. In which recreational used by the public shall be secondary to the primary purpose of management for wildlife refuge

Thus it is clear that the Government has well defined policy for protecting biodiversity. However, it is difficult to implement it in the given socio-cultural set up. How to implement such policies? This may be a research question answers of which may through light on proper implementation. For this one wildlife refuge has been selected for the present work. The research questions given bellow are based on the well felt issues related to protecting and conserving environmental resources.

1.0.8 Negative Impact of Visitors on Protected Areas:

Tourism has equivocal effect on protected area in the world. More money comes along with increasing of visitors in each area. This implies more pressure on area, on water on land and on vegetation covers, traffic congestion followed by smoke emission and air pollution at each tourism destination. Tourism provides an increasingly important
incentive to retain such areas in a relatively natural state in the face of heightened pressure from stakeholders in the agricultural and mining sections. These are some of the causes felt of serious situation and revision in destination for tourism and local tourism. An increasing numbers of visitors are requiring access to natural areas, and in order to supply their need, opportunities exist in privately owned areas, and in those which have been modified in some way. These places are often used for other purposes such as pastoralism, mining, and agriculture, but they also have an alternative similar such situations are observed in the country and hence there is a need to resolve environmental issues to given high value use for tourism (Buckley, 1999; Weaver, 2001; Schmiedchen, 2004).

Visitors to natural resource areas are capable of modifying biophysical systems on local to global scales. The mediator of these modifications is human behavior, which interfaces between human cognition (social and psychological) and human actions (social and biophysical) (Alessa et al., 2003). Buckley (1998) purposed that to establish campsites, toilets and managing number of visitor’s number and behavior are important methods to managing visitors and their negative impacts on the destinations. Ecotourism activities are gradually becoming popular in Iran. Although Iran has a diverse climate and remarkable biodiversity, major limitations such as lack of conclusive regulations, educational programs and infrastructure, have contributed to the slowing of the development of ecotourism in the country. It is necessary to assess the ecotourism situation in Iran.

Mismanagement in protecting environment, leave adverse effect on natural environment like floral and faunal or even effect on water. The following provided definition regarding biodiversity and Water pollution.

1.0.9 Biodiversity:

There is challenge between conservation and design successful biodiversity strategies in economically poor but rich in biological area. Conservation programs needed to design economic incentive to supply benefit for local people and make them partner to conservation and protect their natural resources and wild lands (Western & Wright 1994; Biodiversity Conservation Network 1995).
For study of biodiversity as status of plant diversity, the generally biodiversity defined as the "full variety of life on Earth" (Takacs, 1996). For more specifically, biodiversity study is the processes that create and maintain variation. It is concerned with the variety of individuals within populations, the diversity of species within communities, and the range of ecological roles within ecosystems (Graham Bell).

1.0.10 Biodiversity and Tourism:

Ecotourism assists in preserving biodiversity due to the active role ecotourists play in learning about, raising money for and protecting the area they visit. According to The Nature Conservancy, nature tourism, which involves passively visiting natural sites, lacks the beneficial aspect of ecotourism and has the potential to cause harm if done haphazardly (Ecotourism & Biodiversity).

Ecosystems provide services essential to humanity, which in short can be described as taken care of local people life, supplying materials and energy, and absorbing waste products (Daily, 1997). As these services are encoded in biodiversity, the importance of maintaining nature’s variety in general is clearly rendered prominent (Chapin et al., 1997; Tilman, 1997; Vitousek et al., 1997).

1.0.11 Water:

Water is the one of highest priority factor for sustainable development. However there is very limitation to access clean, pure, hygienic and clean water for every household in most of rural area (Gender and Water Alliance (GWA), 2006). However 3.3% of water born disease is cause of death of 2.2 million people in the developing countries (WHO/ UNICEF, 2008).

Water is essential for farming and there is competition between farmer to access their required water for irrigation their crops and for this goal they use every source of water even water resources in the wildlife and protected areas (Moundiotya, et al., 2004). Competition to access to the water leading to depletion of water resources as well as put every species in endanger (Deininger and Maciunes, 1971; Harkins, 1974; Taiwari and Manzoor, 1998).
In Iran due to recent drought years, local farmers started to use ground water and even water resource for protected areas or wildlife for irrigation purpose hence most of water resources become depleted and this situation put all species in endanger risk. The study of the water resources of the Shir-Ahmad wildlife refuge is trying to understand the level of the pollution in the Subterranean and Pond water that caused by local farmers and suggest appropriate way to protection of this wildlife and its endanger spices.

1.1 Research Questions:

The present study aims at understanding intricacies of implementation of worldwide environmental policy in general and the policy of Iranian Government in particular. Successful implementation of such policies requires people’s participation. This is dependent on their perception, attitude and socio-economic status. How to cultivate positive attitude toward wildlife refuge by local people and the tourists as well? This may be the major research question in the present work. With this view in mind following specific research questions are worth answering with the help of present investigation. Specific research questions posed in the study are:

1. How much local people of the Shir-Ahmad wildlife refuge have environmental awareness?
2. Are local people of the study region friendly with their natural environment?
3. What is the environmental impact of local people on this wildlife?
4. How ecotourism industry could be helpful for conservation of this area?
5. What are the visitors idea regarding this wildlife?
6. How much visitors of the Shir-Ahmad wildlife refuge have environmental awareness?

Thus, the research questions are designed to understand the presence of all possible stakeholders in ecotourism activity.
1.2 The Shir-Ahmad Wildlife Refuges:

The present investigation has adopted micro-level approach and hence one wildlife refuge, i.e. the Shir-Ahmad wildlife refuge, has been selected as the study area. It is situated 15 km far away from Sabzevar city on north-east of Iran and north-west of Khorasan Razavi province in the range of 57° 42’E to 58° 30’E longitude and 36° 00’N to 37° 11’N latitude. Sabzevar and Neyshabour are the biggest cities about this wildlife. Jolein, Saleh-Abad, Nazl-Abad, Cheshmeh-Avash, Ali-Abad, Saqieh, Yahya-Abad, Hashem-Abad and Dowlat-Abad are representing as most important villages and settlements around this region.

Rout of Mashhad-Tehran highway (expressway) with capability of 20 lack passengers and travelers is just 5 km away from this area. This has enhanced the potentials of tourism activities and around the wildlife refuge. The tourism has been an low key in the recent past. However it may be predicted that growth of tourism may be achieved in near future. Further, it may be expected that the negative impact of tourist activities become serious if principles of ecotourism would not be followed.

Figure No. 1.1
Situation of the Shir-Ahamd wildlife refuge in Iran

Sources: Google map
1.3 Hypothesis:

Considering the research questions it is well felt environmental issue related to wildlife refuge under the study. The environmental degradation has been observed in the recent past. It is feared that environment will be deteriorated in feature if the tourist flow will increase. Therefore it is necessary to design a strategy to avoid reduction in biodiversity, degradation of soil and water and maintaining these resources as non-renewable. The present study may attempt to find out proper strategic plan for ecotourism. With this view in mind following hypothesis has been built for the present work:

“It is observed that tourism activities in the Shir-Ahmad wildlife refuge have a good potential. The growing tourism activities may harm wildlife, water quality and biodiversity. Ecotourism practices may reduce the negative impact and benefit the local people so that the wildlife refuge can be protected maintain its environmental status”

1.4 Aims and Objectives:

Nature-based destinations (e.g. private and public parks, forests, wildlife refuges, lakeshores, etc.) are increasingly becoming part of Iran’s tourism development strategies aimed at attracting both local and foreign visitors. Wildlife refuges, in particular, are attracting an increasing number of visitors to experience pristine and unique natural environments. The increase in wildlife tourism provides business opportunities both in the parks and in local communities outside the parks, there are several economic, social and ecological aspects that need to be monitored in order to sustain high quality visitor experiences. Increasing number of visitors may cause negative impacts on the environment. The conflicts between user groups or within groups may become severe. Wildlife and natural resource administrators are therefore charged with a dual responsibility. The first is protecting natural resources for future generations; the second is providing appropriate way of using of these resources.

There are many studies have profiled North American tourists to wildlife refuges, only few number of research has been published on the Asian ecotourism market to understand the characteristics and attitudes of tourists in that region. Owing to lack of documented data on visitors to national parks and protected areas, it is necessary to
understand local and foreign visitors in Iran. In order to find effective way for environmental conservation, management strategies should aim at providing financial opportunities for local people. Therefore it is crucial to collect information on visitors' profile and attitude. Therefore, the aim of this research is to examine the environmental attitude, socio-cultural condition and measuring awareness of local people and visitors with respect to the natural resources of the Shir-Ahmad wildlife refuge.

More specifically, the study has the following aims and objectives:

1. To understand the present status of tourism.
2. Understand feasibility of ecotourism for the study area and to find out whether it can be useful for effective management of the wildlife refuge in Iran.
3. To suggest the planning for effective management for the national park in Iran with the help of ecotourism
4. To design strategy for effective participation of local people.

1.5 Methodology:

This part of investigation describes the combination of qualitative and quantitative methods used for the research. The research methodology that was employed in this study consists of four different steps covering pilot study to designing strategy.

1.5.1 Primary Data Collection:

This study focuses on examining the relationship between ecotourism and environmental conservation as well as economic incentives in the villages around the Shir-Ahmad wildlife refuge. This is an attempt to understand local people opinion regarding this wildlife. The research question asked:

Could ecotourism assist to environmental conservation and be economic incentives in this region?

For getting the answer to this, a survey of randomly selected stakeholders has been conducted. This kind of method has been used by several scholars as mentioned in the previous literature like Local people and visitor's survey. Two separate questionnaires have been designed to as given in appendix II and III.
Three set of questionnaires have been designed to get the information from local people regarding their level of environmental awareness, their idea about ecotourism and the Shir-Ahmad wildlife refuge and socio-economic status. The interview process began with locating and enlisting the cooperation of appropriate respondents. For this study, appropriate respondents ultimately refer to people living in 9 villages around the Shir-Ahmad wildlife refuge. The local people questionnaires were designed based on three different goals such as:

- To assess the local residents environmental awareness.
- To understanding the Socio-Economical condition of the residents.
- To find out their Idea and background regarding tourism and ecotourism in the study region.

The questionnaires are based on 5 point Likert scale, ranging from 1: strongly agree to 5: strongly disagree, answering the question by options. Some of the questions are designed to get the answer according to their opinion. Using the Cranach's alpha method, the validity and statements about environmental awareness of local people was tested. SPSS software used for descriptive analysis and Chi-Square test was employed as statistical techniques in this study. The “α” alpha in Chi-Square was considered as 0.05.

The questionnaire was given among the local residents of 9 villages: Dowlat-Abad, Aliabad-Shur, Saleh-Abad, Saqieh, Yahya-Abad, Cheshmeh-Avash, Hashem-Abad, Nazl-Abad and Jolein, that were surrounded the Shir Ahmad wildlife refuge.

<table>
<thead>
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<th>No</th>
<th>Village name</th>
<th>Population</th>
<th>households</th>
<th>No. of questionnaire</th>
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<td>38</td>
</tr>
<tr>
<td>2</td>
<td>Cheshmeh-Avash</td>
<td>322</td>
<td>73</td>
<td>23</td>
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<td>3</td>
<td>Dulat-Abad</td>
<td>1220</td>
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<td>4</td>
<td>Saqieh</td>
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<td>Aliabad-Shur</td>
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<td>6</td>
<td>Nazl-Abad</td>
<td>458</td>
<td>153</td>
<td>39</td>
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The Shir-Ahamd wildlife refuge situated near main Tehran-Mashhad highway and annually large number of pilgrim and visitors passed especially through this area. A questionnaire has been meant for the visitors. This could generate data to understand their
perceptions regarding ecotourism liking the Shir-Ahamd wildlife refuge, satisfaction regarding accommodation, travel, amenities, behavior of local people, etc. The questionnaire was based on answer type, 5 point likert scale from 1: Strongly agree to 5: Strongly disagree and also optional. SPSS software used for computing the Chi-Square for analysis the visitor’s responds regarding the questionnaire.

1.5.2 Water Analysis:

To find out the impact of local people and tourists on this wildlife, water samples were collected from the Shir-Ahmad subterranean and pond. Samples have been taken from four different site of pond in three different seasons as spring (April), summer (August) and winter (February) seasons in Iran. Water is crucial aspect of environment which is sensitive to the impact. Therefore water samples were collected from the Pond and Subterranean in the Shir-Ahamd wildlife refuge and analyzed according to the following parameters:

1. BOD  
2. COD  
3. DO  
4. pH  
5. TSS  
6. TDS  
7. Total Alkalinity  
8. Sulfate  
9. Nitrate  
10. Chloride  

The Shir-Ahmad castle situated in north east of this wildlife and its one of one of the oldest archeological remains from 1795 at that the government has attempted to rebuild it at 2006 and 2007 and it has become a place of resort for visitors and tourist.
The drinking water pool and the Shir-Ahmad subterranean placed beside this castle and they are one of the most important resources of water for species of this wildlife. The pipe directed the water of the subterranean from wells and discharged into this drinking pool. To assessment of water quality on these resources of water samples has been taken.
from subterranean and drinking pool. Water sample of subterranean has been token from pipe and beside that from four different part of drinking pool between 10 to 11 am in three different season such as April as spring season, August as Summer season and February as autumn season in Iran. samples were keep in standard bottle and immediately transferred to the laboratory for analysis. To ensure of analysis result the samples had been analyzed in 3 different laboratories. The samples were collected from four different part of the pond at deeper location of the pool, away from stream.

After rinsing, submerged the bottles below the water level and allowed to fill completely to the stop. Screwed the lid on tightly to prevent leakage and then placed the bottles in the bubble wrap sleeve provided and kept into refrigerate until laboratory (Agricultural analytical service lab).

Photo plate No. 1.2
The Shir-Ahmad Pond

Source: Researcher

The results has been compared with the different standard permissible level of water (Appendix I).
1.5.3 Floristic Study:

It is essential to know the biodiversity in the study area. Impact on vegetation was determined by using quadrat sampling method. Quadrats of 100×100cm were put in disturbed site near the residential area and undisturbed sites inside the Shir-Ahmad wildlife refuge. For this the secondary sources like literature, reports, etc. have been conducted using quadrat study method as given bellow:

For the study of biodiversity as status of plant diversity, the study area was divided into three study sites on the basis of Undisturbed area that was situated inside the Shir-Ahmad wildlife refuge, Mild disturbed area that was near Cheshmeh-Avash village that situated inside of this wildlife and finally Disturbed area that was near the Aliabad-Shur village placed near the region and total number of 23 quadrats of size 100×100 cm were laid down randomly in 3 different locations.

Following formula was used to calculate the parameters like Frequency%, Abundance and Density:

\[
\text{Density} = \frac{\text{Total number of individuals of a species in all quadrats}}{\text{Total number of quadrats studied}}
\]

\[
\text{Frequency (\%)} = \frac{\text{Number of quadrats in which the species occurred}}{\text{Total number of quadrats studied}} \times 100
\]

\[
\text{Abundance} = \frac{\text{Total number of individuals of a species in all quadrats}}{\text{Total number of quadrats in which the species occurred}}
\]

1.6 Arrangement of Thesis:

The present work has been documented in the form of a thesis consisting five chapters. The Chapter 1 provides an outline of the research, the research objectives, questions, scope, and justification. The main literature used to guide the investigation and
to build a conceptual framework is identified in Chapter 2. Chapter 3 explains the study area, the study region feature and its situation in Iran. The data analysis and findings are presented in Chapter 4. Finally, the implications, summary, finding and strategies are present in Chapter 5.

1.7 Résumé:

The present chapter has given the idea of the research plan for the present study. The introduction to ecotourism and its importance in the context of conservation of biodiversity had also been outlined to understand the research question. The hypothesis
has been design to understand feasibility of ecotourism in the area under the study and its positive impact on local community on the basis of hypothesis, objectives have been defined. A brief note on methodology is also given in this chapter. With this background work a survey of related literature has been conducted and some of the remarks given in the next chapter.