Chapter VI

SUMMARY, STRATEGY AND CONCLUSION
6.0 Introduction:

This far, the study has attempted to understand significance of the Shir-Ahmad wildlife refuge in terms of biodiversity and its potential for ecotourism. It is also observed that ecotourism potential cannot be developed unless local people participate in the programme. If local people support the idea of ecotourism then would be a win-win situation meaning there by socio-economic status of local communities would be increased and the wildlife refuge would be preserved as well.

The previous chapter has presented the observation made in the field work and the results of the analysis and data procedure in the primary survey. Following issues are developed to summarize the study by highlighting significant observation.

6.1 Significance:

The wildlife refuge under the study has its own importance due to its location and rich biodiversity. Following points must be noted:

6.1.1 Biodiversity of the Shir-Ahmad Wildlife Refuge:

It is observed that the refuge has rich biodiversity and must be protected. However there is conflict between local people and the wildlife refuge. This must be resolve in the interest of country and also in the interest of global environmental issue. About 95% of local population in the 9 villages is Muslims and the field survey reveals that local mosque play very important role to lead local community, therefore mosque can play significant role to increase local community awareness regarding environmental conservation.

6.1.2 Locational Advantage:

The location of the Shir-Ahmad wildlife refuge is such that it offers unique position in the world. Climatology it is situated in the area affected by Mediterranean climate, it is semi-arid zone with high humidity during winter and prevalence of dryness in summer. These conditions are responsible for higher level of biodiversity.
6.1.3 Relative Location:

The area is situated just 5 km away from a famous city, Sabzevar. It is connected with road as well as railway. There is small airport which can be developed as international airport in future. The Hashemi-Nejad International Airport is located just 3 hours by road transportation from the Shir-Ahmad wildlife refuge.

6.1.4 International Recognition:

It is internationally recognized as a rich biodiversity area among semi-desert wildlife in Iran.

6.2 Biodiversity:

The biodiversity study has revealed that the wildlife refuge has good flora and fauna diversity.

6.2.1 Floral Diversity:

Vegetation of the Shir-Ahmad wildlife refuge, formed a very small part of Iran’s vegetation that to conform to the plants who which growth in dry climate. Fewer amounts of rainfall and very hot weather are one of most specification of this area. The greatest part of flora on this park consists of Halophyrous from family of Chenopodiaceae and kind of Plumbagia, Gramineae and Tmaricaceae. Genus of Seiditzia and Salsola is finding in alkaline soil and kind of Haloxylon and Astragalus could be found in sand form of soil.

6.2.2 Faunal Diversity:

The Shir-Ahmad is home to one of the noblest and most beautiful mammals of Iran called Jebeer. Other important animal species of the region are palerock sparrow, tree sparrow, house sparrow, jebeer, mouse like hamster, Persian jird, greate-gerbil, house mouse, large-toothed-sousilk, leopard, wolf, golden jackal; fox-common, wild cat, caracal, striped hyaena, wild boar, gebeer-gazelle and goiter-gazelle have been identified in the region.
The most endanger mammal in the area is the Jebeer Gazelle that department of environment try to protect this kind and Determine penalties for hunting that.

6.2.3 Quadrature Survey:

About 17 families of plants were recorded in the study area. Totally 770 species founded in undisturbed area and 368 in mildly disturbed area as well as 186 in highly disturbed area in the study region. A total of 748 individual plants species were recorded under this area, out of which 384 species were represented by herbaceous, 217 species by shrubby plants, 55 species by shrubs and the 92 species were represented by gramineae species.

6.3 Need of Ecotourism:

Ecotourism participation urgently needed because of following reasons:

I. It is learned from the records that there was cheetah existing over the Shir-Ahmad wildlife refuge. However it has been extinct from the sanctuary because of unscrupulous hunting.

II. The most endanger mammal in the area is the Jebeer Gazelle that department of environment try to protect this kind and Determine penalties for hunting that.

III. The local community in the vicinity of the Wildlife refuge has little awareness about ecological importance of it. Therefore community has not taken any initiative to protect the Shir-Ahmad.

IV. The socio-economic condition of the people is not up to the average standard of life in Iran. Majority of them are engaged in farming and animal husbandry. They are interested in using biomass in the sanctuary in a contaminated way and hence sustainability is adding threat.
V. The present practices continue there, would be grave loss and biodiversity in near future. Thus it is necessary that interventional by experts and authorities is necessary. Ecotourism may be good solution in this context.

6.4 Conflict:

It is observed in the study that there is conflict between local community and the biodiversity resources and perceived by the experts. Some of them may be worth noting.

I. hinting:

Illegal hunting in the Shir-Ahamd wildlife refuge is one the most important environmental issues over the study region and it is a link to income of local people and their poverty. Debitility to effort modern agriculture, inadequacy of water resources for agricultural products, lack of suitable market for selling products, low level of environmental awareness between local people in the study region and of course their budget defected may are the reasons that lead them for illegal hunting or give them willingness.

II. Grazing:

Since the animal husbandry is one of the main occupation for local people and the Shir-Ahamd wildlife refuge offers the best source of grazing encroachment is observed. And it became a big problem in the path protection of this wildlife refuge.

III. Use of fertilizer:

It is observed that there is pressure on subterranean water under agriculture. It has shown increasing trend the subterranean water in impact out from the well and hence its level is declining. This leads to highest concentration of TDS, BOD, COD, etc

6.5 Present Status:

The present status of the wildlife refuge under the study has been understood under the basis of water analysis and floral study

6.5.1 Results of Water Analysis:

To understand impact of the local people and visitors’ activity on the Shir-Ahmad wildlife refuge Subterranean as well as the Pond water.
The parameters such as BOD, COD, pH, DO, TSS, TDS, Sulphate, Nitrate, Chloride and total Alkalinity have been measured to find out quality of water. Methods of collection of samples and protocol for laboratory analysis have been already mentioned in the first chapter.

It is observed that the water quality of the Pond and Subterranean water is not up to the mark for both human and wildlife. Most of the parameters like Bod, COD, TDS, TSS, Chloride, etc. were more than permissible standard level especially during the rainy season. Agricultural run-off and also the salinity nature of the study area soil are the most important causes for this.

6.5.2 Results for Floristic Study:

The floristic study has been carried out by selecting 3 areas. Inside the wildlife refuge ‘Undisturbed area’, inside the Shir-Ahmad and near the Cheshme-Avash ‘mildly disturbed area’ and near the Aliabad-Shur ‘highly disturbed area’. 23 quadrates in size of 100x100 cm were laid down in each selected area and the following observation is worth to mention.

The results for total number of all species in the undisturbed area were 38, mildly disturbed area 27 and in the highly disturbed area was 186. Also total number of individual species in undisturbed area was 722, mildly disturbed area 380 and highly disturbed area 186.

Total number of herbaceous species in the undisturbed area was 19, mildly disturbed area was 11 and in highly disturbed area it shows 9 only. Also total number of individual herbaceous species in undisturbed area was 355, mildly disturbed area 165 and in highly disturbed area was shown 87. The results reveals that the total number of species and total number of individual species in highly disturbed area has been reduced and it shows that local people does not support and protecting their natural area.

6.5.2 Perception of Local People:

With the helping primary survey attempted has been needed to understand opinion of local community for wildlife and tourism activity.
I. Local People Awareness

The result reveals that the level of local people awareness regarding their surrounding environment is very low and it is necessary to designing awareness campaign. Just primary of secondary educational facility may improve environmental awareness. The strategy should be first to provide primary education to all and secondly, the Department of Environment should be prepare awareness program for school going children.

II. Traditional Knowledge:

The average of traditional knowledge level of local people in the 9 villages near the Shir-Ahmad wildlife refuge was less than 50% knowledge for conservation of environment. Also education level of local residents has no association with traditional knowledge base. In other words, education has not been able to cultivated environmental awareness. Hence concerned authorities should put efforts to increasing their environmental awareness.

III. Local People and Ecotourism Awareness:

The analysis in the previous chapter has shown that the level of awareness of local people regarding to the ecotourism and its benefits is very low and hence it is necessary that the Government and Department of Environment effort to increasing their awareness respect to the ecotourism.

IV. Socio-economic set up:

The socio-economic analysis result reveals that economic condition of local people in 9 villages around the Shir Ahmad wildlife refuge is bellow than living standard in Iran. Also respondents in any job opportunities were not give good income and hence most of them, even higher level educated people believed that the hunting of species from this wildlife is more profitable than their business.

6.5.3 Visitors Perception:

A survey was conducted to understand outlook of visitors towards protection of environment and responsible traveling. They believed that ecotourism could be used as a
key to increasing life standard of local people by providing different related job opportunities to ecotourism and also they pointed out that ecotourism can be useful for protection of this wildlife refuge. Also the believed that fellow of visitors to the Shirm-Ahmad wildlife refuge may be cause of environmental degradation and hence it needed proper management of the Government and the Department of Environment.

6.6 Strategies:

As mentioned in the hypothesis the study has attempted to design strategy to conserve biodiversity of the area under study. The strategy is based on the principle of conservation by conflict management.

6.6.1 Planning Principally:

It has been proved beyond doubt that active participation of all the stakeholders in tourism activity is essential for conservation of wildlife refuge. It should not be for the sake of conservation but conservation for development. This kind of strategy can be to achieve sustainability of the present wildlife which has good potential for ecotourism. Thus it may be useful to follow the principle of ecotourism by visitor’s shouldering their responsibility and also local people by supporting conservation practices.

1. The tourism activity should be such a way that the ecological would be used in non-contamination way.
2. Carbon footprint of the visitors should be kept low as far as possible.
3. Significant part of benefit out of tourism activity should be shared by local population.
4. Encouragement should be given to the local traditional knowledge about food habits, health care and agricultural practices.

With these important principles in mind the strategy of ecotourism may be designed using following aspects.

- Conflict management by providing replacing grassland for local people
- Visitors as much as the local people needed safe drinking water and purification plan can be established on the basis of solar energy
• Establish a center for herbal health care and providing local herbal medicine can be attractive for tourists as well as improve economic condition of local people.

• Establishing a solar electricity power for giving electricity power inside the study area.

• Some of the villages must be promoted to renovate their houses, so that visitors can be accommodated. For this, it is necessary not to allow hotels establishment by corporate sectors.

• Low carbon emission in transportation by local people should be beginning by operated transportation modes with subsidize rates, so that they can make the arrangement for visitors transportation from city to the wildlife refuge. Internal transportation should also be with such vehicle so has to avoid air and noise pollution in the wildlife refuge.

6.7 Feasibility of Ecotourism Plan:

The ecotourism plan suggested above may be accepted by local people because they would be benefited if ecotourism has been planned properly. Further, the plan has suggested starting ecotourism practices right from the city of Sabzevar. This may make them more and more responsible traveler so that they will visit the area frequently. It is very likely that Herbal Health Care Centers would provide them recovery if required, rest and leisure in this high quality environment. These points may favor ecotourism practices if designed according to suggested plans.

6.8 Conclusions:

The study has observed mainly how ecological resource is being eroded. This is well reflected the results of water analysis of the pond and subterranean in the Shir-Ahmad wildlife refuge and also by floral study of the area. Ecological conservation starts from conservation of soils, water and species. This can be possible by changing the attitude and behavior of the stockholders. The study has also observed that there is conflict between local community and wildlife area because of improper interaction with the precious wildlife resource in the form of the Shir-Ahmad wildlife refuge. It can be resolved by promoting ecotourism practices. Thus, it may be concluded that
ecotourism practices if properly planned according to the strategy mentioned in the study can be able to conserve the wildlife refuge.

According to the proposed strategy it is expected that the present biodiversity resource can be utilized in the better way so that sustainability of the sanctuary of study would be enhanced.

It is in this sense, the hypothesis stated in the beginning of the study and proved under basis of present work.