

# Current Status of Management and Protection of Taxila World Heritage Site, Pakistan

## *Pakistan'daki Taxila Dünya Mirası Alanında Yönetim ve Korumanın Mevcut Durumu*

Mehmet SOMUNCU<sup>1\*</sup>, Ashfaq Ahmad KHAN<sup>1</sup>  
<sup>1</sup>*Department of Geography, Ankara University, Ankara*

**Abstract:** Taxila is one of the six World Heritage Sites of Pakistan. Taxila World Heritage Site is facing several problems resulting from various management issues and the current land use problems like almost all developing countries. It is necessary at first to identify current status and related issues for effective management and conservation of Taxila World Heritage Site. New management strategies and policies have to be determined based on these updated data. Research was conducted in March 2010 at Taxila World Heritage Site and observations were made to query about current situation and related problems. Results of research findings are considered bases for development of effective management policies and strategies for the conservation and protection of Taxila World Heritage Site.

**Key words:** Taxila, World heritage, Protection of world heritage, Management of world heritage, UNESCO, Pakistan.

**Özet:** Taxila Pakistan'daki altı Dünya Mirası Alanından birisidir. Hemen bütün gelişmekte olan ülkelerde olduğu gibi Taxila Dünya Mirası Alanı da çeşitli yönetim ve güncel arazi kullanımlarından kaynaklanan sorunlarla karşı karşıyadır. Taxila Dünya Mirası Alanının korunması ve etkin yönetiminin sağlanması için öncelikle mevcut durum ve sorunlarının saptanması, elde edilen bu güncel verilere dayalı olarak yeni bir yönetim stratejisi ve politikasının belirlenmesi zorunludur. Bu amaca yönelik olarak 2010 yılı Mart ayında yerinde yapılan araştırma ve gözlemlerle Taxila Dünya Mirası Alanının güncel durumu sorgulanmış ve sorunları saptanmıştır. Araştırma sonucunda elde edilen bulguların, Taxila Dünya Mirası Alanının korunması ve etkin yönetimi için geliştirilecek politika ve stratejilere temel oluşturacağı düşünülmektedir.

**Anahtar kelimeler:** Taxila, Dünya Mirası, Dünya mirasının korunması, Dünya mirası yönetimi, UNESCO, Pakistan.

### 1. Introduction

The Archaeological sites and monuments embody landmarks in the progress of human civilization and represent invaluable heritage of mankind. The Convention Concerning the Protection of the World Cultural and Natural Heritage, signed in Paris on November 16, 1972, is an international agreement through which nations join together to conserve a collection of the world's timeless treasures (UNESCO World Heritage Centre, 2010 a). Each country or "State Party" to the Convention recognizes its primary duty to ensure the identification, protection, conservation and transmission to future generations of the cultural and natural heritage situated on its territory. To date, more than 186 States Parties have signed the World Heritage Convention (UNESCO World Heritage Centre, 2010b), making it one of the most powerful protection instruments in the world. It is the only international legal instrument for the protection of both cultural and natural sites encouraging cooperation among nations for safeguarding their heritage (Pedersen, 2002; UNESCO World Heritage Centre, 2005).

The World Heritage Convention has achieved a great deal during the three decades of its existence. Today, it is among the foremost international tools of conservation, and certainly among the best known. The success of the Convention is demonstrated by the almost universal membership (186 out of 191 current Members States of the United Nations are signatories or 'States Parties' to the Convention) and the large number of listed sites under its protection (890 sites in 148 countries as of 2009). Seldom has an international treaty based on a proactive approach by Member States been more successful (Somuncu and Yiğit, 2010; UNESCO World Heritage Centre, 2010b).

Beyond these numbers, the World Heritage Convention has been able to achieve an even greater success: it has entered into the hearts and minds of millions of people, providing a tangible demonstration of the power and effectiveness of international cooperation. As a result, its impact has grown over time, inspiring ever greater involvement by governments, communities and individuals, universities, foundations and private sector enterprises (UNESCO World Heritage Centre, 2007).

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\* Corresponding author: somuncu@humanity.ankara.edu.tr

According to World Heritage Sites Agreement, ratified by the participant countries in 1972, World Heritage sites are globally significant natural and cultural assets, which are protected, developed and managed for well being of mankind. UNESCO World Heritage Center (UNESCO WHC) is a sole authority to determine any area with unique natural and culture traits as World Heritage Site. The applicant countries prepare field files to be analyzed by UNESCO and WHC, in case of fulfilling sufficient requirements. The area is declared as a World Heritage Site by UNESCO WHC, which is authorized to announce and advertise. However, participant country is bound to manage and monitor the related activities by her own, while evaluation is made with help of UNESCO WHC bodies based on jointly prepared periodic reports about the field area (Somuncu and Yiğit, 2010).

The Convention protects hundreds of sites of “outstanding universal value” -- including cultural, natural and mixed sites. To be included on the World Heritage List, a property must meet one or more of the specific cultural or natural criteria, and its value(s) must withstand the test of authenticity and/or integrity. The Convention sets four criteria for natural sites and six for cultural sites as a means of determining values by which a property may be designated a World Heritage site. With the adoption of the revised Operational Guidelines for the Implementation of the World Heritage Convention, only one set of ten criteria exists. Nominated properties shall meet one or more of the following criteria (UNESCO World Heritage Centre, 2007; UNESCO World Heritage Centre, 2010d):

- i. represent a masterpiece of human creative genius;
- ii. exhibit an important interchange of human values, over a span of time or within a cultural area of the world, on developments in architecture or technology, monumental arts, town-planning or landscape design;
- iii. bear a unique or at least exceptional testimony to a cultural tradition or to a civilization which is living or which has disappeared;
- iv. be an outstanding example of a type of building, architectural or technological ensemble or landscape which illustrates (a) significant stage(s) in human history;
- v. be an outstanding example of a traditional human settlement, land-use, or sea-use which is representative of a culture (or cultures), or human interaction with the environment especially when it has become vulnerable under the impact of irreversible change;
- vi. be directly or tangibly associated with events or living traditions, with ideas, or with beliefs, with artistic and literary works of outstanding universal significance. (The Committee considers that this criterion should preferably be used in conjunction with other criteria);
- vii. contain superlative natural phenomena or areas of exceptional natural beauty and aesthetic importance;
- viii. be outstanding examples representing major stages of earth's history, including the record of life, significant on-going geological processes in the development of landforms, or significant geomorphic or physiographic features;
- ix. be outstanding examples representing significant on-going ecological and biological processes in the evolution and development of terrestrial, fresh water, coastal and marine ecosystems and communities of plants and animals;
- x. contain the most important and significant natural habitats for in-situ conservation of biological diversity, including those containing threatened species of outstanding universal value from the point of view of science or conservation.

Inscription of countries having areas of natural and / or cultural values on List of World Heritage Sites have some concrete and abstract but positive prospects. First of all, it appears positive and impressive for a country to be included in such a prestigious list of places. In addition development of various economic activities, based on these sites, (for example, tourism, etc.), provide necessary financing for protection and management of these sites. Moreover these sites may play an important role from time to time to make a serious contribution to the economy of that country.

Because of these reasons many countries want to register their own numerous areas of natural and/or cultural importance on List of World Heritage Sites (Somuncu and Yiğit, 2010).

As of 2009, a total of 890 World Heritage Sites have been registered on behalf of 148 countries. Distribution of these sites according to their properties is given in Table 1.

Table 1. Number of properties inscribed on the World Heritage List (UNESCO World Heritage Centre, 2010b).

Type of property	Total number
Cultural properties	689
Natural properties	176
Mixed cultural and natural properties	25
Total	890

Pakistan has inherited a wide array of heritage sites, six of which have been inscribed on the list of World Heritage Sites, while a new tentative list has been prepared and submitted to the World Heritage Centre for approval. However, in Pakistan World Heritage Sites are facing several problems due to inadequate management, planning and conservation activities. Serious steps must be taken in order to overcome these issues and protection of property in better way.

The extent of this study comprises World Heritage Site of Taxila in Pakistan. The purpose of the study is to query about the current conservation status of WHS in accordance with a specific format for effective management. Moreover, the aim of this study is to obtain updated set of data regarding World Heritage Site to evaluate and formulate the policies and strategies which are important for management of the area.

## 2. Methodology

During field work different research methods were used such as field observations, semi structured interviews and evaluation of available documental resources. Fieldwork was conducted in March 2010 at different archaeological sites in Taxila including Bhir Mound, Sirkap, Sirsukh, Mohra Murado, Julian, Jandial, Dharmarajika and Taxila Museum. During field work observations were made and photographs were taken to get updated information regarding WHS. Besides, face-to-face meetings and interviews were also conducted with different stakeholders such as decision makers, facilitators, and local beneficiaries (local people and tourists). Moreover, literature and different print material regarding conservation and management of the site was also collected from the officials of the Taxila Museum. Visitors' statistics of various years were also collected from museum. All collected data was evaluated and results were compiled.

## 3. Results

### 3.1. Status of World Heritage Sites in Pakistan

In Pakistan six heritage sites have been inscribed on UNESCO's World Heritage List since her ratification of World Heritage Convention in 1976. Location and properties of these sites are shown in Figure 1 and Table 2. Moreover tentative list of 18 new sites has also been submitted to World Heritage Centre. All of the World Heritage Sites in Pakistan are of cultural heritage type (UNESCO World Heritage Center 2010c).

World Heritage Sites (WHS) in Pakistan experience a number of problems arising from lack of effective management and conservation issues like almost all developing countries of the World. Some heritage sites have specific problems of their own nature besides common issues like poor management and policy formulation. In general, for effective management of these areas, it is necessary to deal with various issues on priority basis such as lack of management plans, deficiency of funding, limited foreign investment, insufficient social awareness and unsatisfactory promotion and

advertisement. There are few basic factors that raise these problems such as inadequate data about present scenario of World Heritage Sites, outdated information and statistics and absence of rehabilitation activities under a specific plan. It is compulsory to find out updated data regarding conditions of the areas to make practical decisions for effective management in future.

Table 2. World Heritage Sites in Pakistan and their properties (UNESCO World Heritage Center 2010c.).

World Heritage Site	Year of Inscription	Type of Property	District
Archaeological Ruins at Moenjodaro	1980	Cultural	Larkana
Taxila	1980	Cultural	Rawalpindi
Buddhist Ruins of Takht-i-Bahi and Neighboring City Remains at Sahr-i-Bahlol	1980	Cultural	Mardan
Historical Monuments at Makli, Thatta	1981	Cultural	Thatha
Fort and Shalimar Gardens in Lahore	1981	Cultural	Lahore
Rohtas Fort	1997	Cultural	Jehlum

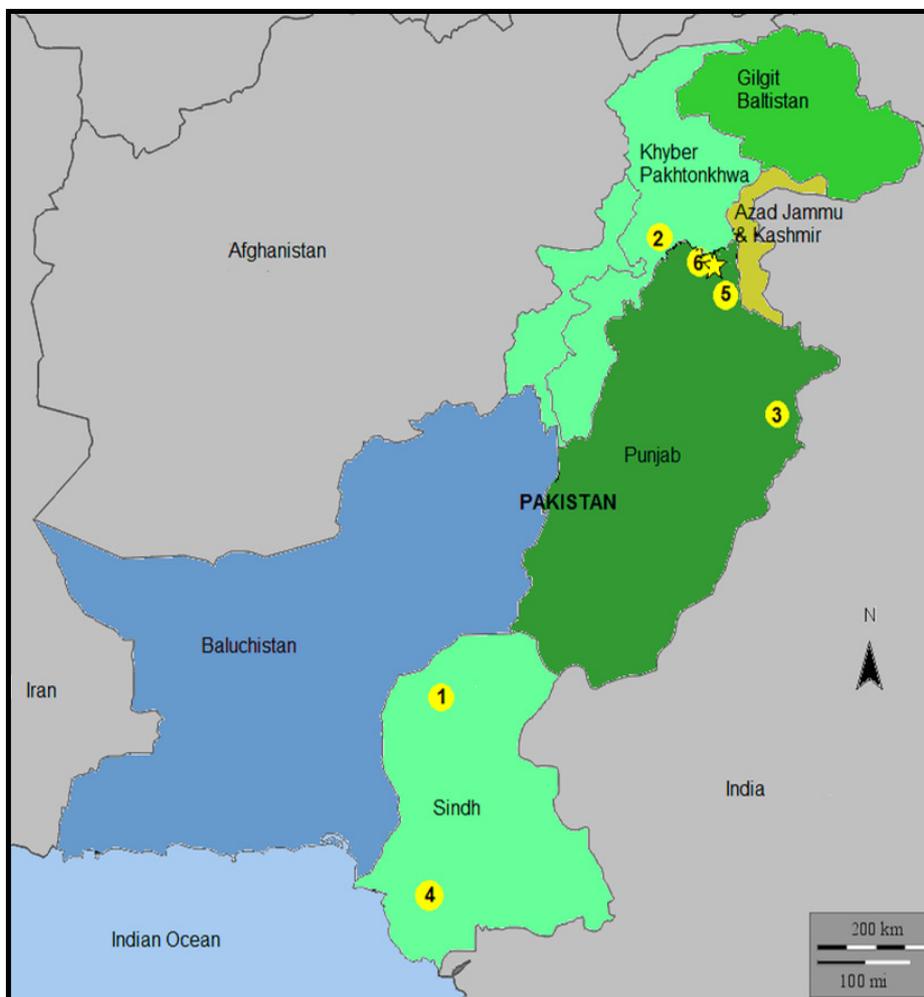


Figure 1. Location of World Heritage Sites in Pakistan, 1. Historical Monuments at Makli, Thatta,; 2. Buddhist Ruins of Takht-i-Bahi and Neighboring City Remains at Sahr-i-Bahlol; 3. Fort and Shalimar Gardens in Lahore; 4. Archaeological Ruins at Moenjodaro; 5. Rohtas; Fort 6. Taxila.

### 3.2. World Heritage Site of Taxila

#### 3.2.1. Geographical location of World Heritage Site of Taxila

Taxila is an important archaeological site in the Rawalpindi district of Punjab province of Pakistan. Taxila is situated about 32 km (20 miles) to the north-west of Islamabad Capital Territory and Rawalpindi in Punjab; just off the Grand Trunk Road (Figure 2). Taxila lies 549 meters (1,801 ft) above sea-level. The ruins of the ancient cities are spread over an area of about 20 square kilometers. The summers are very hot with temperatures soaring to a maximum of over 40°C, but the winters are delightfully cool and pleasant with temperatures hovering around 5 to 15°C. The best season for a visit is between September and March. The summer season is from April to September. Although Punjabi and Urdu are the main languages, English is widely spoken and understood.

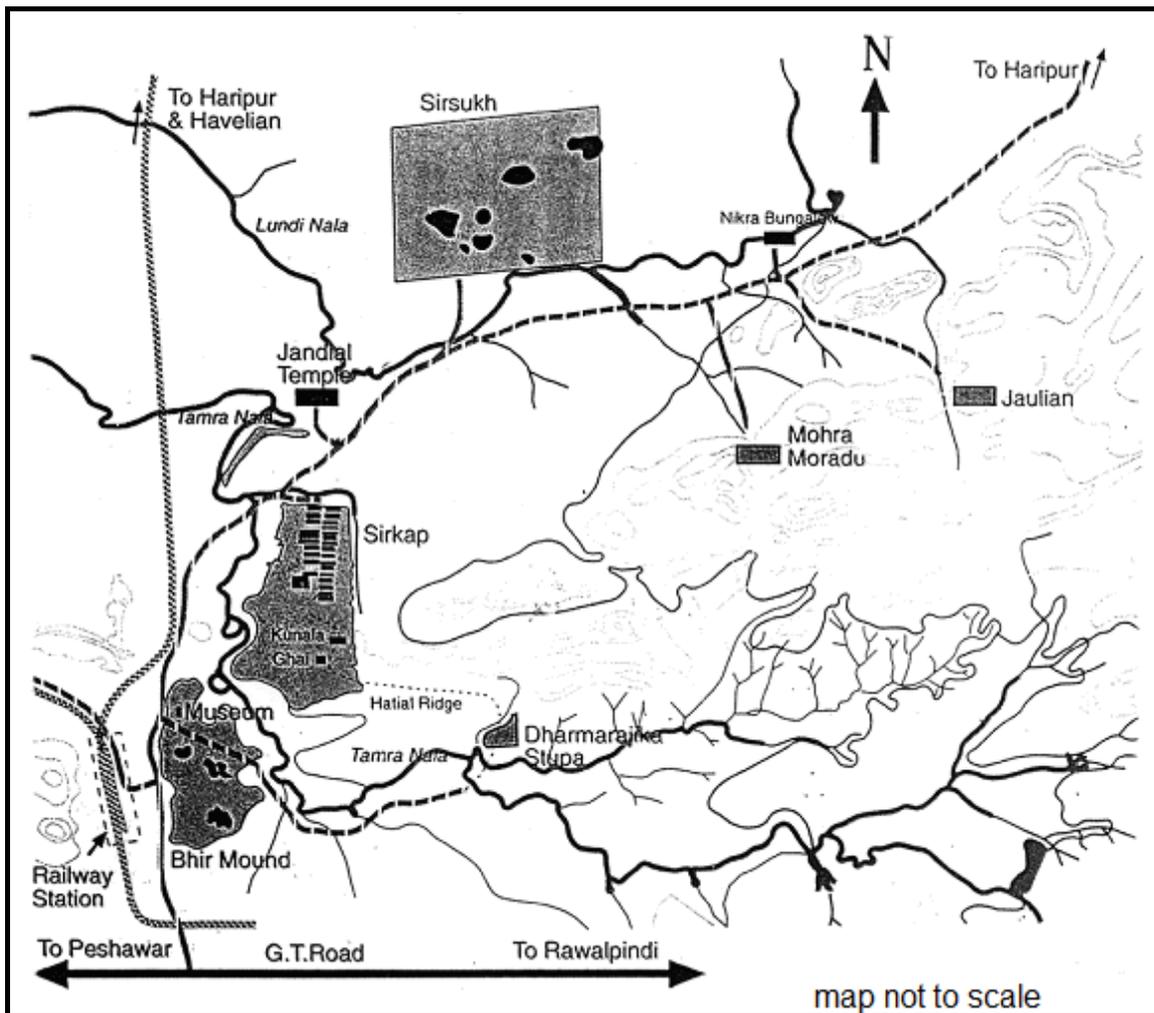


Figure 2. Map of Main Archaeological Sites in Taxila World Heritage Site (UNESCO World Heritage Centre, 2010e).

#### 3.2.2. Basic characteristics of World Heritage Site

Taxila is one of the oldest living cities in the sub-continent. Taxila was inscribed on the World Heritage List in 1980 under cultural criteria iii and iv (UNESCO World Heritage Centre, 2010e). Its origins lie in the Neolithic period (mid 4th millennium BC). The Taxila Valley came into focus when evidence of its Harappan phase (3100- 2500 BC) was discovered at Sari Kala and then Jhang, Pind Nauseri, Khada and Hathial. These discoveries established that the Taxila Valley participated in the formation of Harappan civilisation. The cultural assemblages of the early Harappan phase in the

Taxila Valley demonstrate a remarkable conformity in stone tool technology and ceramic art with those of contemporary sites distributed across the vast area from the Gommal Valley to Sindh Province (UNESCO World Heritage Centre, 2010e).

The oldest rulers of Taxila, the Takshakas, their modern descendants being Taka tribe, whose name originated from their worship of Takila, i.e. serpents, have given rise to the name of the city, Taxila, correctly Taksha-sila, i.e. the hill capital of the Takshakas, the exact Persian translation of which is Margalla, correctly Mar (serpent) Qila (fort). It is on the western side of the Margalla Hill that Taxila is located on bank of a local river called Tamra-nala, correctly Dharama-nala (Dharma meaning "Buddhist moral law) –a name derived from a nearby Buddhist stupa, called Dharmarajika stupa, the first of its kind erected by the Mauryan emperor Asoka about the middle of the 3rd century B.C. (Dani, 2010).

Most of the Buddhist stupas and monasteries date from the 1st to 5th century AD although the Dharmarajika Stupa was founded by Asoka in the 3rd century BC. The most important structures are Jaulian, Mohra Muradu, Pilan, Kalawan, Kunala and Mankiyala. Some unique structures are shown in Figure 3 and 4. Sir John Marshall after making detailed researches placed Taxila in its true historical and cultural perspective. The excavated material has added valuable information to our knowledge of the arts, crafts, social and economic system, customs, creeds rituals and architecture of the area from the 6th century BC to the 5th century A.D.



Figure 3. Buddhist Monastery at Mohra Murado



Figure 4. Statue of Buddha at Julian Stupa

The ruins of Taxila consist of many different parts of the city buildings and Buddhist stupas which are located in a large area. The main ruins of Taxila are divided into three major cities, each belonging to a distinct time period. The oldest of these is Bhir Mound, which dates from the sixth century B.C.E. The second city of Taxila is located at Sirkap and was built by Greco-Bactrian kings in the second century B.C. The third and last city of Taxila is at Sirsukh and relates to the Kushan kings. In addition to the ruins of the city, a number of Buddhist monasteries and stupas also belong to the Taxila area. Some of the important ruins of this category include the ruins of the stupa at Dharmarajika, the monastery at Jaulian, the monastery at Mohra Muradu in addition to a number of stupas (UNESCO World Heritage Centre, 2010e).

Present day Taxila is one of the seven Tehsils (sub-district) of Rawalpindi District. The tehsil of Taxila is administratively subdivided into 10 Union Councils. According to the 1998 census it has a

population of 151,000 (City District Government, Rawalpindi, 2010). It is spread over an undulating land in the periphery of the Pothohar Plateau of the Punjab. The industries include heavy machine factories and industrial complex, ordnance factories of Wah Cantt and cement factory. Heavy Industries Taxila is also based here. Small, cottage and household industries include stoneware, pottery and footwear. A hotel of the tourism department offers reasonably good services and hospitality to the tourists. Taxila has many educational institutes including University of Engineering and Technology (UET). Taxila Museum, dedicated mainly to the remains of Gandhara civilization, is also worth visiting.

### *3.2.3. Current status of protection and management in Taxila World Heritage Site*

#### *3.2.3.1. Administrative structure*

Department of Archaeology and Museums, Ministry of Culture, Government of Pakistan is responsible for management of the site. The administrative setup of the site includes Deputy Director, Archaeological Engineers, Curators, Archaeological Conservators, Conservation Assistants, Clerks, Masons and Attendants. Planning Department of Ministry of Finance, Government of Pakistan monitors and audits the utilization of funds.

#### *3.2.3.2. Management plan*

As a management tool, planning helps protected area managers to define and then achieve the mandate of the protected area under their care. A Management Plan can be defined as a written, circulated and approved document which describes the site or area and the problems and opportunities for management of its nature conservation, land form or landscape features, enabling objectives based on this information to be met through relevant work over a stated period of time (Eurosite, 1999). The Management Plan is a product of the planning process, documenting the management approach, the decisions made, the basis for these, and the guidance for future management. The Management Plan should cover the entire protected area. It should contain information on what is to be achieved by management and the rationale behind the management decisions made (Eagles et al., 2002).

Taxila is being looked after by a number of technical staff headed by a Deputy Director. Although a management plan for site has been developed but it is not implemented accordingly. The Management Plan of the property contains the administrative set up for its preservation, conservation and protection since its declaration as a protected registered monument. The present management plan is however, not sufficient to look after the entire Taxila complex (UNESCO World Heritage Centre, 2010e). It needs to be strengthened on international standards as well as scientific and modern approaches. Moreover to be effective a management plan must be implemented and monitored accordingly.

#### *3.2.3.3. Buffer zones and boundaries of the world heritage site*

Buffer zones are an important tool for conservation of properties inscribed on the World Heritage List. All along the history of implementation of the World Heritage Convention, the protection of the “surroundings” of the inscribed properties was considered an essential component of the conservation strategy, for cultural and natural sites alike. As with most management tools for the protection of World Heritage sites, a buffer zone is meant to protect the Outstanding Universal Value of a site as identified during the nomination process and confirmed by the decision of the World Heritage Committee (Martin and Piatti, 2009).

In order to be effective, however, it is necessary to ensure that it has a logical and clear boundary, and that regulations and policies have been developed which provide for all of the necessary protection of the Outstanding Universal Value of the World Heritage site. Further, buffer zones should be seen as part of a large integrated planning process which brings together the concerns for the heritage with the needs of development and improved quality of life. This planning process and its resulting management system should be effectively implemented and monitored over time, and where

necessary regulations and policies should be adjusted in order to make improvements (Martin and Piatti, 2009).

In the case of Taxila the borders and buffer zones of the property are considered adequate. In few years back a sports stadium was constructed on the protected area of Bhir Mound, Taxila. However, after notice of Director General World Heritage Center, the construction of football stadium was ceased and removal of boundary wall and gate of new construction was ensured. According to state of conservation reports of various years, presence of heavy industries and stone quarries can also put negative pressure on integrity of sites. These constructions are located outside the very limited buffer zones of the property. For this purpose a stone quarry has been closed to reduce its negative impact on the remains of the Jaulian site, Dharmajika Temple and Bhir Mound (UNESCO World Heritage Centre, 2010e). The World Heritage Site of Taxila is under increasing pressure from the area's resident population. Moreover, there is no proper law enforcement and monitoring for protection of boundaries and buffer zones.

#### *3.2.3.4. Financial resources and investments*

The Department of Archaeology and Museums collect funds through different resources such as the Gate Money/Tickets and other resources as national budget which are utilized for protection of the property. There are two types of Budget under which the conservation of sites and monuments is carried out by the Department of Archaeology & Museums Government of Pakistan which is Normal Budget and Annual Development Program. The main source of funds for the Department of Archaeology & Museums for the conservation and protection of Cultural Heritage is allocation from the National Budget.

Normal budget is provided annually which is used for the conservation, management and repair of the sites. Moreover, urgent issues and problems concerning to the conservation of the sites are also dealt. Under the Annual Development Program the Government provides the funds to the Department of Archaeology & Museums on the already approved schemes and provided annually according to the approval phasing of the scheme.

Under the technical co-operation program the World Heritage Fund has provided a sum of \$28,000 in 1996 for (implementation in 1999-2000) for the purpose to control vegetation at Taxila. In 2000-2001 Rupees 229,386 were provided by UNESCO contract No.WHC700.784.9 concerning the information, education and promotional activities funded by the World Heritage Fund for the World Heritage Sites for the installation of sign-age board and printing of brochure (UNESCO World Heritage Centre, 2010e).

#### *3.2.3.5. Visitor management*

Visitor management is defined as an ongoing process to reconcile the potentially competing needs of the visitor, the place and the host community (Kuo, 2002). Visitor management refers to tracking the usage of a public building or site (a protected area as a national park or heritage in this case). By gathering increasing amounts of information, a visitor management system can record the usage of the facilities by specific visitors and provide documentation of visitor's whereabouts.

Visitor management, traditionally, has been concerned largely with visitor impacts and emphasis has been placed on managing negative consequences of tourism. The increasing number of visitors to the natural areas and inappropriate behaviour by the visitors has led to a number of negative impacts on the environment such as habitat destruction, changes to the wildlife behaviour, and pollution within recreation settings. Visitor management has involved controlling visitor numbers, attempting to modify visitor behavior and also modifying the resource. Visitor management planning includes providing visitors with information and education about environmental conservation in one hand and applying restriction to limit harmful activities in other (Thomas and Middleton, 2003).

In Taxila large number of local and foreign tourists is attracted to the area since its inscription on World Heritage List by UNESCO. Department of Archaeology and Museums has made several efforts to facilitate the visitors. For this purpose a number of published materials are provided for information of tourists in the shape of Leaflets, Books and Information Booklets. However, there is no proper visitor management plan for the site according to international standards. There is no restriction to buy entry tickets especially for local visitors and law enforcement is also absent. Local people from the surroundings often gather at the site without entry tickets and pass leisure time there. This situation put ecological pressures on the site. A comprehensive visitor Management Plan is required for the proper management of the area.

Table 3. Number of Visitors to the area for various years (Office of Taxila Museum).

Year	Number of Tourists		
	Local	Foreign	Total
2003	73,459	4,140	77,599
2004	114,670	7,844	122,514
2005	154,154	8,697	162,851
2006	177,267	9,606	186,873
2007	132,126	3,383	135,509
2008	60,187	1,099	61,286
2009	153,308	1,616	154,924

#### 3.2.3.6. Scientific research work

The earliest archaeological excavations and researches were carried out between the years 1913 and 1934 by Sir John Marshall, the then Director General of Archaeological Survey of British India. Sir Mortimer Wheeler excavated it in 1944. After independence, Dr. Muhammad Sharif, M/s. M.A. Halim, Gulzar Muhammad Khan un-revealed hitherto unknown antiquity of this city through their fresh excavations. Mr. Muhammad Bahadur Khan has recently carried out archaeological excavations at the site of Bhir Mound (1998-2002). A non-destructive archaeological survey was carried out the Bhir Mound site, Taxila in 1999 under a UNESCO Expert Mission (UNESCO World Heritage Centre, 2010e).

The Conservation Branch of the Sub-Regional Office Taxila prepares conservation programs and after approval from the higher authorities, funds are provided to execute the different projects and schemes. The results disseminated through these research works are published in the Annually Departmental Journal and the Department of Archaeology and Museums, Government of Pakistan prepare reports for the future guidance. The Department of Archaeology & Museums has established an institute known as Pakistan Institute of Archaeological training and Research (PIATR) at Lahore Fort, Lahore in 1986. The PIATR is the main source to provide training in conservation and management techniques and other related trainings for the managers and curators of the cultural properties. The PIATR has successfully organized many International and National Training Programs some of them with the assistance of the UNESCO (UNESCO World Heritage Centre, 2010e).

A Master Plan for the Development and Restoration of Archaeological Sites from Taxila to Swat Valley has been approved with the cost of Rs. 200 million. Conservation work in different sites of Taxila has been completed under this project. These conservation works include removal of vegetation, placing of sign boards, fencing the important structures, conservation of ancient monuments, improvement of visitors' facilities and reorganization of Taxila Museum Figure 5 and 6.



Figure 5. Dharmarajika Site Fencing.



Figure 6. Public Toilets and Guard Room.

### 3.2.3.7. Information, education and social awareness regarding World Heritage Site

Taxila Valley map indicating different sites and their distance is placed at Museum campus gate. Sign boards indicating historical sites and their status as World Heritage Site are well placed on the main roads and entrances Figure 7 and 8. These indicating boards are written in both English and Urdu languages. Besides, information and explanations regarding cultural heritage inside the sites are also available. Every part of the site has a plate explaining history, usage and purpose of that place. Moreover, several print materials for information about the heritage sites, in the form of leaflets, brochures and guides are also available Figure 9.

During research face to face interviews were conducted with decision-makers including management authorities and beneficiaries comprising local population and tourists. In these interviews questions were asked to different persons to measure the awareness level. The most important purpose of these questions was to find out the knowledge of people living or visiting the area regarding status of the area as WHS. The results are given in table 4.



Figure 7. Indication Board.



Figure 8. Taxila Valley Map at Museum .

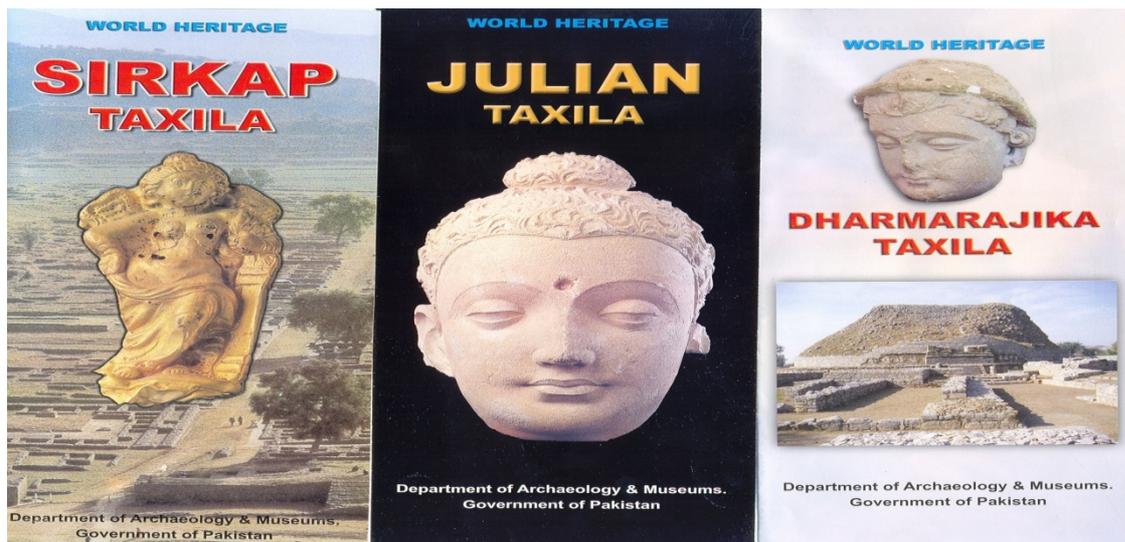


Figure 9. Various Information Booklets about Heritage Sites ( Taxila Museum Office).

Table 4. Knowledge of Local People and Tourists about status of the site.

Place of Interview	Number of interviewed persons	Knowledge about Status of the area as WHS	
		Yes	No
Taxila Museum	26	02	24
Dharmarajika	14	01	13
Sirkap	08	01	07
Mohra Murado	05	00	05
Julian	07	00	07
Total	60	04	56

A total of 60 persons from various interest groups (visitors and local people) were interviewed in order to evaluate awareness of people about the status of the area as WHS. Out of 14 persons residing or working around the WHS only 01 person (7%) had knowledge while other 13 person (93%) had no knowledge about the status of the area as WHS. Similarly very few tourists to the area had knowledge about the status of the area. In the same way out of 46 tourists only 03 tourists were aware of the status of the area as shown in Figure 10. Majority of the people know about the importance of the area as historical place but were not aware its status as WHS. There are many reasons of this ignorance like illiteracy and lack of information regarding this issue.

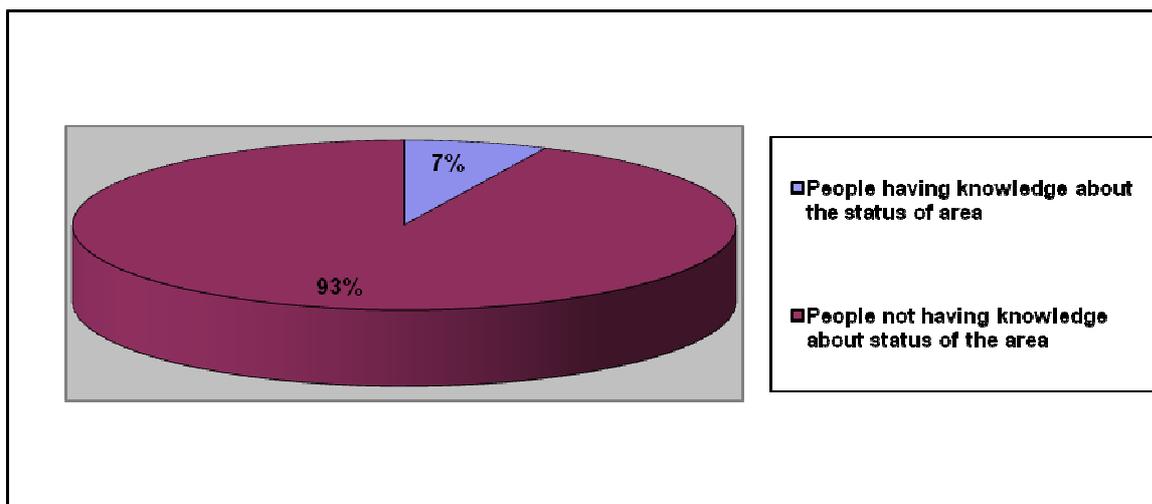


Figure 10. Percentage of People having knowledge about status of area.

### 3.2.3.8. Laws and regulations for protection of the property

Antiquities Act 1975 of Pakistan provides adequate remedy for protection of the property. Due to World Heritage Site, the International Conventions/laws concerning protection of Cultural Heritage are also applicable, which provides additional guarantees for its protection. The following Laws and Regulations are concerned for the protection and management of cultural properties of Pakistan:

1. Antiquities Act, 1975.
2. Excavation & Exploration Rules, 1978.
3. Conservation Manual of Sir John Marshall.
4. Dealing in Antiquities Rules, 1989.
5. Export of Antiquities Rules, 1979.
6. Immovable Antiquities (mining, quarrying and blasting in restricted areas) Rules, 1979.
7. Admission of Public into Immovable Antiquities Rules, 1982.
8. Cinematographical Filming Rules, 1980.

The existing Antiquities Act of 1975 has some flaws, which are being removed. The proposed amendments will certainly make the law strong enough to deal strongly with the violation of the relevant laws concerning protection of cultural heritage (UNESCO World Heritage Centre, 2010e).

### 3.2.3.9. Threats and pressures in Taxila World Heritage Site

There are a number of threats and pressure which has become hurdle to conservation activities. These can be categorized as follows:

- The major problems of conservation at World Heritage Site of Taxila are wild growth of vegetation, weeds, lichen, fungus, mosses, termites, etc. Although removal of wild vegetation has been done in recent project but again grown up. Growth of wild vegetation causes deterioration and disappearing of important archaeological structures. The impact of wild vegetation is most prominent in the sites of Sirkup and Sirsukh. It is necessary to take serious steps to overcome this issue. A long term policy must be formulated involving local community instead of short term projects. For this purpose effective management plan and continuous monitoring is necessary. One of the simplest forms of monitoring is that carried out by communities and the general public. However, to be effective, this monitoring requires a programme of awareness-raising about the significance of the heritage and the importance of noting and reporting change (Collete, 2007).

- Changes in climatic indicators have adverse effects on natural and cultural World Heritage properties. The Archaeological remains at Taxila lie under tropical climatic conditions. Due to their constant exposure to the air and the weather effects, like temperature, rain, storm, etc. the remains developed cracks, leaned, bulged out, collapsed or decayed considerably (UNESCO World Heritage Centre, 2010e). Moreover due to heavy rain several sites also face deterioration due to excess of humidity. For instance the site of Mohra Murado is facing severe problems resulting from rain Figure 10 (a) and (b). Rain water leaching from the roofs is causing dampness of ancient structures which can be more dangerous in future. There is strong need to preserve the roofs of ancient building properly to prevent the entrance of rainwater into the structures. To overcome the effects of climate serious steps must be taken in order to achieve the conservation status of international level.

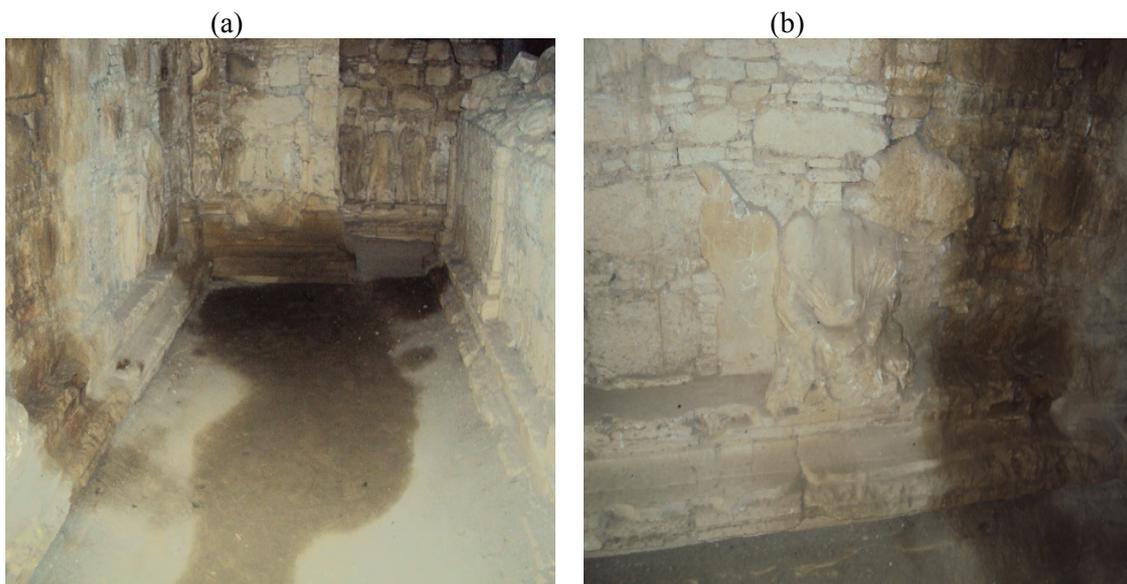


Figure 10 (a) and (b), Rain Water damaging Structures at Mohra Murado Site.

There is a need for more research on the effects of climate change on both the physical heritage and the social and cultural processes that they are a part of. If a Management Plan is specifically designed and formatted to foster its use as a working document which can be updated on a regular basis, then it can become a key tool in the effective stewardship of World Heritage sites under threat from climate change and actions in response to climate change can be flexibly introduced throughout the document (Collete, 2007).

- The World Heritage Site of Taxila is also facing serious environmental pressures from resident of local population. The local people spend their spare time in the heritage site without any admission tickets which creates environmental disturbances in the area. Moreover, activities like construction and animal grazing around the heritage site also damage the site Figure 11.



Figure 11. Animal grazing near Sirkap Site.



Figure 12. Main Haripur Road connecting various sites.

- The roads approaching the various sites in the area are not in good condition. During rainy season these roads are filled with rain water making the access to sites very difficult. For example during field work it was observed that main road connecting several sites need to be repaired figure 12. In addition, a number of improvements are desirable such as provision of facilities to the visitors, research facilities for scholars, information Leaflets/Books in National Language for school going children and general public.

#### 3.2.3.10. Monitoring

Monitoring is all too often associated with extensive programs to measure hundreds of variables over time with high tech equipment. In updating the available information for World Heritage properties, monitoring can provide the necessary data for future reference and collect such data as will facilitate later decisions. Monitoring for the World Heritage Committee is not an end in itself but should facilitate the World Heritage Committee's decision-making. Therefore monitoring should be focused on the key indicators for the conservation, over time, of the out-standing universal value, authenticity and/or integrity of World Heritage properties. Consequently, it should cover the condition of the properties and its Out-standing Universal Value, the threats and – when appropriate - the impact of corrective measures (Selfslag, 2004).

Under the convention for the protection of the World Cultural and Natural Heritage, it is the prime responsibility of the State Parties to take appropriate provisions and actions for the application of the convention and to put in place on site monitoring arrangements as an integral component of day-to-day and management of the sites. Article 4 of the World Heritage Convention states that the duty of ensuring the protection and conservation of the World Heritage belongs primarily to the State Party and that the State Party will do all it can to this end, to the utmost of its own resources and, where appropriate, with international assistance and co-operation. Therefore, the prime responsibility for the management of the sites remains with the States Parties (Hooff, 2004).

The Ministry of Culture's Planning Section monitors projects. The Science and Technological Universities of Pakistan, Soil Investigation Laboratory Lahore, the Geological Survey of Pakistan, Environmental Department and others have been involved in monitoring exercises. As per Conservation Manual of Sir John Marshall enough administrative provisions for organizing the regular monitoring of the property are provided which are being implemented by the Department of Archaeology and Museums. A few monitoring exercises have been carried out at Taxila. In 1999 an earth resistance (Non Destructive) archaeological Survey was conducted at Bhir Mound, Taxila. The Ministry of Minorities, Culture, Sports, Tourism & Youth Affairs' Planning Section monitors the project schemes during and after completion as per procedure adopted/Rules (UNESCO World Heritage Center, 2010e). According to officials of Taxila Museum monitoring is conducted regularly twice in a year.

#### 4. Conclusion

The World Heritage Sites along with unique cultural and natural values are great assets for humankind. At present, 890 sites from different countries of the world have been inscribed on UNESCO's World Heritage list. These sites are being managed and protected by the authorities of concerned countries as being signatory of World Heritage Convention. Besides, UNESCO also monitors the efforts being conducted to accomplish this responsibility as international binding. Pakistan became signatory of World Heritage Convention in 1976. Since then, in Pakistan, six sites with unique cultural values have been inscribed on World Heritage list. Government of Pakistan has taken serious steps for preservation and management of these sites. However, a number of deficiencies and shortcomings still prevail concerning this issue.

Taxila, located 32 km away from the capital Islamabad, is one of important World Heritage Sites in Pakistan comprising remains of ancient Gandhara civilization. The property was inscribed on World Heritage List in 1980. Since then efforts have been made for proper management and conservation of the site. Taxila museum is one of the best museums in Pakistan where 4000 objects are displayed including stone, stucco, terracotta, silver, gold, iron and semiprecious stones related to Gandhara art. Moreover sign boards indicating the status of property as World Heritage Site are also displayed properly. Facilities for visitors including public toilets, shops, canteens, hotels and information brochures are also available at the site. The ancient monuments and structures are also rehabilitated according to original texture.

However, a number of problems still persist and need to be overcome. Recommendations and suggestions have been made in the light of collected data during this research. These can be outlined as:

- Basic reason of the problems related to World Heritage Sites is lack of proper implementation of management plan. Effective enforcement of management plan is necessary for the management of the area according to international standards. Moreover, participatory and holistic approach to prepare Management plans for World Heritage Site is necessary to deal the related issues more efficiently.
- Development of buffer zones is an important tool for conservation of properties inscribed on the World Heritage List. Conservation and protection measures can be strengthened by identification of buffer zones for prevention of construction activities in the adjoining areas to World Heritage Sites. There is strong need to develop adequate buffer zones in order to reduce pressure from the site.
- It is necessary to develop and implement an efficient Visitor Management Plan for the site. With a proper visitor management plan visitors are forced to travel in a restricted manner by improving their knowledge, attitudes and behavioural variation towards protected status of the area. Thus many historical ruins and natural values can be protected from harmful effects due to increased number of visitors.
- Strong efforts should be made to increase the awareness of local population living in the vicinity of World Heritage Site about significance of the site. For this purpose information regarding values and benefits of the sites must be advertised in effective mode. Participation of relevant institutions, agencies and organizations to arrange public training programs on conservation activities can contribute a lot in this concern.
- It is not possible to conduct conservation activities in a steady manner, without support of the local population. Moreover, problems concerning this topic can be resolved more easily and promptly by formulation of continuous active protection measures and constant supply of financial resources.
- The following specific actions to adapt to climate change might be necessary at a regional or local level to ensure a continuous redefinition of adaptation strategies as climate projections are refined: Enhancement of appropriate education and traditional skills; rigorous ongoing monitoring and maintenance; research to support national/regional decision-making; planning for emergency preparedness; re-evaluation of management priorities in response to climate

change; training on the various problems and possible responses to climate change in all aspects of conservation activity namely, development of traditional skills, monitoring, management and emergency preparedness (Collete, 2007).

- The access roads must be constructed specially main Haripur road which connects various important sites of Taxila WHS. There should be integration between different departments of government to achieve this target.
- For proper conservation and management skilled persons must be hired. Moreover, workshops and seminars should be conducted to skill the persons already working.

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