

UMM AR-RASAS SITE MANAGEMENT PLAN

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SECTION I – SITE DESCRIPTION AND DOCUMENTATION

CHAPTER 1 – THE SITE

1.1. Location and boundaries

Umm ar-Rasas is located at coordinates 31.4995 North, 35.9198 East (center of castrum), 60km. south of Amman, 30km southeast of Madaba, north of Wadi al-Mujib, roughly halfway between the King's Highway and the Desert Road. It is possible to reach the site directly from Madaba from the road passing the village of Nitol, continuing to Wadi ath-Thamad, passing the sites of az-Za'faran and Rumayl. Alternate routes are from the King's Highway turning east at Dhiban (*Nomination file, pages 1-2*) or the the Desert Highway, turning west 29 kilometers south of the Queen Alia International Airport exit.

The nearby village of Umm ar-Rasas is within the governorate (muhafadha) of Amman, sub-governorate (liwa') of al-Jiza. The district (qada') of Umm ar-Rasas contains 20 villages and residential communities with a population of approximately 20,000. The population belongs to the Bani Sakhr tribe, mostly from the Hqaish, Salaytah, and Ka'abneh families. There is also a presence of population from the Bir Sabi' tribe.¹

1.1.1. Site plans

Site plans derive from survey work conducted by the Swiss mission in the early '90s. Further surveys were conducted by Halcrow Group Limited in 2005 as part of the EU MEDA programme for the presentation and preservation of the site.

The fence line which encompasses the core and buffer zone of the site was surveyed by DoA in October 2015. Top plans and elevations of excavated buildings were prepared by the



General View

¹ The qada' of Umm ar-Rasas is composed by 4 municipalities: 1. Umm er-Rasas, which includes 7 other villages: Abu Hulaylifah, Akhu Suhayna, Musaytiba, Rujm Fuhayd, Rujm 'Uqab, Salya, Thurayyah, all inhabited by the Hqaish tribe. In Abu Hulaylifah there is also a presence of the Ka'abnah tribe. 2. Rama, which includes 3 other villages: Al-Lahun, Damkhi, and Mushayrfah, all inhabited by the Salaytah tribe. In Damkhi there is also the Hqaish tribe. 3. Rumayl (inhabited by the Hqaish and Awaysheh tribes) and 'Ulayyan (inhabited by the Hqaish and Ka'abnah tribes). 4. Tur al-Hashash, which includes also the village of An-Nadwah. Both are inhabited by the Ka'abnah tribe.

archaeological missions and DoA. CAD drawings only exist for the Halcrow survey data and for the latest plan prepared in October 2015 by DoA.

1.2. Site description

1.2.1 Historical background²

The name Umm ar-Rasas is related to the Arabic root *Rass*, *Rassas*, indicating the action of putting something on top of something else in perfect alignment. Thus is a term which indicates a well-built wall, and it is a good indication of the antiquity of the locality. This interpretation has replaced a previous one that translated the Arabic word *rasas* (lead), interpreting this as related to the presence of lead sarcophagi seen somewhere on site (but no presence of these has been confirmed in excavations).

The site of Umm ar-Rasas is identified with the Mefa'a or *Kastron Mefa'a*, a toponym known from the Roman-Byzantine and Arabic sources and from the Bible. According to Ibn Mandhour, the name Mefa'a derived from the word *mayfaa* or *mayfa'*, meaning the towered place or mountain (Ibn Mandhour: *Lisan al-Arab*).

Mosaic Greek inscriptions discovered in the Church of Saint Stephen excavated on the northern edge of the ruins, and the inscriptions discovered in the church of the Lions have confirmed, four times, the ancient name of Umm ar-Rasas as *Kastron Mefa'a*, a settlement mentioned in the Bible (Joshua 13:18; 21: 37, and Jeremiah 48:21) and in the Roman-Byzantine sources. The *Notitia Dignitatum*, an official document of the Roman Empire, and the 4th Century AD *Onomasticon* of Eusebius of Cesarea, both state that auxiliary cavalry troops of the Roman army were stationed in the camp of Mefaa on the edge of the desert under the command of the *Dux Arabiae*. The locality of Mefaa is recorded by the Arab historian el-Bakry as a village of the Belqa' of Syria. The name *Kastron Mefaa* suggested the military nature of the settlement in the Roman, Byzantine and Islamic periods, and possibly earlier, in the Nabatean period. The artistic sophistication of the mosaic pavements of the uncovered churches, however, stand against that military function, at least in the Byzantine and Umayyad periods.

The archaeological evidences indicated that the first occupation in the site was in the Iron Age II, a basalt column base, a scarab and a group of pottery sherds were found in St. Stephen complex (Benedettucci 1994).

² Information for this paragraph derives from the World Heritage Nomination file (2003) and Mahamid 2008.

The castrum existed already in the third century A.D. as indicated by a Latin inscription found in the eastern courtyard of the church of St. Stephen. Thamudic and Nabataean inscriptions were also found, reused in the eastern wall of the same church.

The remains and monuments of the Byzantine period are visible evidence on the importance of Mefaa. The mosaics of the many churches found at the site provide evidence of the existence of an organized Christian community in the diocese of Madaba, at the end of the 8th Century. The late date of the mosaics of the Church of Saint Stephen tells us that at the end of the eighth century A.D. a flourishing urban community existed at the site. That Christian community was religiously and administratively organized, and exhibited an unexpected artistic vitality. It was governed by a deacon with a bishop and local clergy. From the large numbers of churches and from the existence of the elaborately constructed huge stylite tower we learn that Mefaa (Umm ar-Rasas) was in the Byzantine era an ecclesiastical focal point for the region.

1.2.2 Archaeological features³

The site consists of six main components including:

- 1-The Castrum: a walled area of about ten hectares.
- 2-The Northern Settlement: An open quarter of the same size of the castrum.
- 3-The Stylite Tower Complex: The most visible monument of Umm ar-Rasas is a tower which is still standing at a distance of 1.5 km north of the main ruins, the tower is in the middle of a square courtyard with a cistern to the north and a small church at its southeast corner.
- 4- The Quarries with associated buildings
- 5-The Ancient Agricultural Fields.
- 6-The Reservoirs and Cisterns.

1-The Castrum

The fortress of *Kastron Mefaa*, built at the end of the 3rd century or the beginning of the 4th century A.D. appears as a large quadrilateral of 158m by 139m, surrounded by a solid wall 2m thick, reinforced by quadrangular towers, and two main gates, one in the north, and one in the south. The walls, of cyclopean size, are made of large undressed blocks of stone, without any mortar and wedged with stones of smaller size. On the inside there is a huge amount of stones out of which arise several arches, lintels and small columns decorated with crosses. At the southeast corner a deepening of the rubble probably indicates the presence of a reservoir. Because the city had no springs, several cisterns are seen in the area outside and inside the ruins.

³ This paragraph is largely taken from the World Heritage Nomination file (2003)

At the beginning of the 4th century a wing of cavalry was stationed there. After the demilitarization of the campus during the 5th century, a settlement remained within the enclosure. Then the internal fortress organization, originally structured around two orthogonal ways, was gradually modified by constructions built above courtyards and streets. Out of the four churches within the enclosure, the so-called twin churches have been excavated. There are two other excavated areas: the North gate and the South gate.



The Castrum

The Twin Churches

Inside the castrum explorers have identified four churches. The twin churches built against the eastern wall of the castrum have been excavated by the archaeologists of the Max van Berchem Foundation, starting in 1988.



The Twins Church

The Church of the Rivers (578/79 or 593/94 A.D.) is the northern of the twin churches, it has a mono apse with three naves separated by two rows of three arches and a raised presbyterium, limited by chancel and flanked by two small rectangular chambers closed with doors. Three doors (one by nave) gave entrance through the western wall. Another door in the north wall, gives access into a



Mosaic of Twins Church

small rectangular chamber covered by two arches. In later times two of the west doors were blocked and benches built along the wall, inside the church.

The so-called Church of the Palm Tree is the southern of the twin churches. This church was the latest built. It has a mono apse with three naves separated by two rows of three arches. It has a raised presbyterium and limited by chancel and flanked by two small rectangular chambers closed with doors (in the original state, these chambers were completely open to the naves). Three doors (one by nave) gave entrance through the western wall (from a narthex). Two other doors are visible in the south wall, the one situated in the east opening into a small rectangular chamber covered by two arches. The apse is partially cut off from the inner side of the city wall.

The archaeologists believe that the churches were abandoned during the Umayyad period, as witnessed by more than 20cm of loess accumulated on the floors. Afterward they were reused for habitation or workshops but this occupation came to an end with the collapse of the buildings during the 748 AD earthquake. A final phase of occupation on top of the collapse is documented by the presence of an oven in the narthex and a partition wall in the diaconicon (Bujard 1992: 298-299).

2-The North Settlement: The Ecclesiastical complex

On the northeastern edge of the ruins of the settlement a large and interconnected liturgical complex with four churches was identified. This included two churches with mosaics: the church of Saint Stephen to the east and the church of Bishop Sergius to the north. The third church is called the Courtyard church, and the fourth is the Aedicula church. Both were paved, the first with flagstones, the second with marble slabs.

The Church of Bishop Sergius

The church was built in A.D. 586 as a basilica with an apse and elevated presbytery and two steps higher than the nave. It had an altar which shows two main phases of construction. In the presbytery there is a bench for the clergy (the synthronon) on the interior of the apse, with a service room to the north. Through the main entrance, one could enter a room with mosaics which was between the baptistry to the north, and a funerary chapel, to the south. The cruciform basin of the baptistry was covered with a waterproof reddish plaster, but was badly damaged in a secondary reuse of the room. Two barrel-vaulted tombs in the funeral chapel continued eastward under the presbytery of the Courtyard Church. According to the dedicatory Greek inscription in a medallion which is between two representations of lambs in

front of the altar, this northern (lower) church was built and paved with mosaic in the year 587, at the time of Bishop Sergius of Madaba.



Sergius Church

The Church of Saint Stephen

The church was built as a basilica with an apse and elevated presbytery and two steps higher than the nave. It had an altar which shows two main phases of construction. In the presbytery there are the bases of a ciborium and two side rooms. The Church of Saint Stephen is one meter higher than the Church of Bishop Sergius. A stairway connected them. From the Greek inscription on both sides of the altar we are informed that the mosaicist Staurachios Ezbontinos (from Esbounta-Esbous, modern Hesban) and his colleague Euremios paved the presbytery in March 756, at the time of Bishop Job.

The work was completed in October 785, at the time of Bishop Sergius II in honor of Saint Stephen by care of the deacon John, who was "chief of the Mefaaites and econom" and with the collaboration of all the people of Kastron Mefaa "who love Christ".

The other inscriptions which accompany the geometrical patterns of the mosaic provide the names of the benefactors, among them Kayoum, priest and monk of Pisgah-Mount Nebo. Since the portraits and the scenes of hunting, agriculture and pastoral life once depicted in the mosaics were disfigured by iconoclasts, the major interest of this mosaic is the double geographical frame and the place names which accompany the city plans. Between the intercolumnar spaces were inserted eight Palestinian cities on the north side: The Holy City (of Jerusalem), Neapolis (Nablus), Sebastis (Sebastia), Cesarea, Diospolis (Lidda), Eleutheropolis (Beit Jibrin), Askalon, and Gaza; and seven Jordanian localities on the south side: the double panel of Kastron Mefaa (Umm er-Rasas), Philadelphia (Amman), Madaba, Esbounta (Hesban), Belemounta (Ma'in), Areopolis (Rabbah), and Charachmouba (Kerak). Two Jordanian cities were added in the naves along with the portraits of the benefactors: Diblaton, on the north,

and Limbon (Libb), on the south. The inner geographical frame of the carpet is decorated as a river stream with fish, birds, and water flowers. Floating among them are boats and boys fishing or hunting. The continuous scene is interrupted by ten city plans of localities of the Nile Delta: Alexandria, Kasion, Thenesos, Tamiathis (Damietta), Panau, Pelousion, Antinaou, Eraklion, Kynopolis and Pseudostomon.

The mosaic of Saint Stephen provides further evidence of the existence of an organized Christian community in the diocese of Madaba at the end of the 8th century, an urban community with obvious artistic vitality.

The richness of the inscriptions and the quality of the motifs of the mosaic pavement of the church of Saint Stephen make it one of the most important archaeological monuments of Jordan. In this mosaic of the Abbasid period, we find a combination of many of the themes which had become progressively more popular in the earlier mosaics of Jordan: portraits of benefactors, hunting and pastoral scenes, scenes of a daily life, architectural representations, birds and flowers which fill the elaborate geometric patterns and inscriptions.



St. Stephen Mosaic Floor

The Church of the Courtyard

A small church between the Church of Bishop Sergius and the Church of Saint Stephen, an original paved courtyard was changed into a church with the addition of an apse on the western wall. Two barrel-vaulted tombs in the funeral chapel of the Church of Bishop Sergius continued eastward under the presbytery of the courtyard Church. This might explain the liturgical purpose of this new church which has its apse oriented to the west. The funerary character of the church is emphasized by the multiple tombs below the slabs inside the church itself.

Its plan can be regarded as with three naves (separated by two lines of two arches each). The apse presents a raised presbyterium originally provided with a chancel.



The Church of the Courtyard

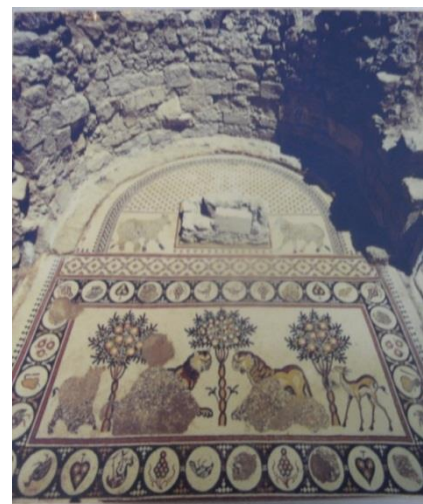
The Church of the Aedicula

The church with a polygonal apse in the western sector is called the church of the Aedicula because of a small niche on the southern wall. It was built in the sixth century A.D. on a higher level than the other churches. It was somewhat isolated from the other three churches, and had its own entrance on the southwest corner of the complex. The courtyard with the cistern north of the Aedicula Church was reached from the interior of the town through a tunnel which passed below the presbytery of the church. The church had a double door on the façade and another door in the southern wall.

Church of the Lions

The Church of the Lions lies to the south of St. Stephen's complex. The church is the largest one actually discovered in Umm ar-Rasas. It is also the only one to possess three apses.

The complex of the church of the Lions consists of the church and a series of annex rooms and courtyards. The complex is well delimited to the north, west and south by streets, and to the east by a courtyard. Tombs were found outside of the entrance of the Church. They are built structures covered with slabs. The raised central presbyterium was well preserved with, exceptionally in situ, the steps leading to the ambo, the base of which was found at its original position. The main entrance was in the middle of the west wall. In the same wall a second door open on a closed small room covered by a stone flat roof supported by two arches.



The Apse of the Lions

The Church of Saint Paul

It is a three apse church, dated to the sixth century AD. The name is based on the name found incised in one of the roof tiles of the church "*Saint Paul and Germanus save the Blues and Papiona Son of George the lector*". It was supported by two series of wide arches. The building had three doors on the southern wall. The easternmost one led to a room which had a slit window.



St. Paul Church

The mosaic plan of the central nave was divided in three panels with an autonomous alignment in respect to the presbytery step which results deviated in some degrees towards the south.

The Chapel of the Peacocks

This chapel is part of a central ecclesiastical complex between the St. Stephen Complex in the north and the Castrum in the south. The apsed chapel has been roofed with a series of five arches with long beams. The ecclesiastical structure collapsed following an earthquake during the early Abbasid period. The chapel had the apsed presbyterium raised of one step with the chancel screen dividing it from the main hall. The stone base of the altar with four sockets for the small columns was still in situ against the round wall of the apse. The chapel had a main door on the west façade and two other doors on the north wall.

The floor of the chapel is paved with mosaics. Geographical motifs decorated the intercolumnar panels.

The Church of the Priest Wa'il

The small church was part of a larger ecclesiastical complex, outside the northwest corner of the walled castrum. A door in the eastern wall of the south aisle joined it with the main church (Church of the Tabula) to the east. The church was built and paved in the year 586 A.D. as stated in the dedicatory Greek inscription in the central carpet.



Greek inscription

The Church of the Tabula

It is located in the western sector of the urban quarter, outside the northwest corner of the walled castrum. This large church with two service rooms on both sides of the apse, was paved with a stone floor. A tabula ansata with a Greek inscription has been added in the stone floor of the presbyterium inside the central entrance to the sanctuary. Of the inscription only some letters were still visible. The raised presbyterium has been closed by a stone chancel screen partly preserved on the sides. The Church is classical with three naves separated by two rows of four arches.



Tabula Church

The Church of the Reliquarium (Madkhar)

This church is located east of the church of the Tabula, not far from the North gate of the castrum and from the Palace. It has three aisles and a single apse. As in other churches, a reliquary was found under the floor of the presbytery. The church has not been completely excavated. Its mosaic floor is only conserved in fragments.



Madkhar

The Palace

It is located just north of the Castrum's north gate, between the Church of the Lions and the Church of the Reliquiary. It is a large building with a vast courtyard and several cisterns. The building however was not fully excavated and its plan is not.

The Winery

This large structure is composed by several elements: a large wine press area of several basins with a floor of plain white tesserae, and a staircase going down at least two stories into what may have been the cellar. This complex was not completely excavated and the existence of a cellar is not confirmed as excavations could not continue due to the depth of the trench and unstable walls surrounding it.



The Winery

3- The North Tower complex

It is located at a distance of 1.5 km. from the Castrum, and includes a high standing Stylite tower almost 14m. high, a small three naves church with simple plastered floors with annexed premises and different dwellings around: a wine press cistern, ancient quarries, a two story building. Excavations have targeted the small church near the standing tower, and areas around it. Conservation work was conducted on the two-story building north to the tower, and on the church.

The Stylite Tower

This is one of the most important monuments in Umm ar-Rasas. It is the only known intact structure dedicated to the practice of hermitage by monks and ascetics seeking solitude. The name "stylite", Greek for "column" derives from the practice initiated by Saint Simeon, who decided to live the rest of his life on the top of a column at a site known today as Qal'at Sama'an, north of Aleppo. This practice spread throughout the eastern Mediterranean, but the tower at Umm ar-Rasas is the only example of a structure built specifically for the purpose of hermitage. It is 13.81 meter-high and was built in the middle of a square courtyard, beside huge water cisterns hewn in the rock in the north of the ruins in the Byzantine period. The

tower had no stairway but had a domed room at the top with a door opening on its southern side, facing a church located to the south of the tower. A channel ran from top to bottom on the inside of the tower's wall. It is possible that this channel was used as a toilet. This tower is shown, as a column, within a courtyard and near a church with three hanging lamps in the mosaics of Saint Stephen's church. A tower is mentioned on the mosaic inscriptions of the church of Al-Mukhayat, 40 km. northwest of Umm ar-Rasas. The stylite tower is mentioned as located in the diocese of Madaba region, of which Mefa'a was part. Since no other tower has been discovered in the Madaba region or in the rest of Jordan, it is possible that this mention referred to the tower at Mefa'a.



Stylite Tower

The Church of the tower



The Church of the Tower

It is a small three naves church with simple plastered floor with annexed premises and different dwellings around. It was excavated in 2001 by the Department of Antiquities, and no mosaics were found to form any part of its floor. What was found consisted of compacted white plaster. The plan of the church is a small basilica with one apse, oriented East-West. It has three small naves separated by two rows of two arches. The central nave had an elevated presbyterium flanked by small rectangular chambers completely open on the lateral naves.

Square Building

To the North of the Stylite tower there is a square two storey building built with local limestone blocks. An exterior set of steps climbs to its upper floor on the eastern side. Another set of steps merge from its interior façade of its western wall. These steps possibly climbed to a missing floor or to the missing roof of the second floor. Even the function of this building is not quite understood but possibly it was used as a watching post to control the reservoirs and water tanks and the agricultural fields or to give protection to the semi-isolated Stylite and to the adjacent church.



The Square Building

4-Quarries with associated buildings

This unit comprises two groups of buildings. The first is a watch tower and a small church with associated quarries and cisterns, and the second is a building whose function is still undetermined, with an associated cistern. The entrance to this building could be blocked with a rolling stone which is still in situ. This unit is located between the castrum and the stylite tower complex, near the agricultural fields.



Reservoir located between the Stylite Tower and the Site

5-Ancient Agricultural fields

These were created in antiquity by terracing the wadis flowing towards the North, Northeast and Northwest of the castrum. Cultivated terraces were built by damming the bottom of local wadis with low terrace walls. The bulk of the terrace infill consists of colluvium composed of angular gravel in a matrix of fine sandy silt. In most cases the colluvium is topped by a 30 cm thick cover of fine sandy silt.

More fields are visible also to the south and southwest of the site, outside of the protected area.

6- Reservoirs and Cisterns

They are of two groups, one surrounding the entire site and including bell-shaped rock-cut cisterns, a large rock cut rectangular open-air basin, several large rectangular underground water tanks covered with arches and slabs and large debris mounds created by accumulation of the cisterns' silt removed from them, and of the towns refuses.

The other group is located at the Stylite complex area. These are huge reservoirs hewn in the bed rock.



Reservoirs and Cisterns

1.2.3 Landscape

The ruins of Umm ar-Rasas are situated at 760 m asl on a limestone plateau north of Wadi Mujib. The site is surrounded by remnants of ancient agricultural systems characterized by fields located in shallow wadi bottoms, dammed at intervals in order to slow down waterflow during rain episodes, and ensure the collection of soil particles and moisture. These fields surround the site on all sides. Ancient quarrying activities are also visible in several locations.

Agriculture today relies on groundwater extraction except for a small area to the west of the site that depends on rain-fed water. Wheat and barley crops are the most common, although in latest years there has been an increase in olive trees planting. Grazing is an important economic

activity with an estimated size of 86,000 between goats and sheeps. 12 chicken farms are also located in the vicinity of Umm ar-Rasas.

The geology of the area is characterized by marine sediments belonging to the Maestrichtian Stage of the Late Cretaceous Period. Two stratigraphical units occur near the surface: the upper Qatrana Phosphorite Member, 18 m thick; composed of alternating thin layers of marls, micro-crystalline limestone and chert and thicker banks of phosphatic chert, and the lower Bahiya Coquina Member, 30 - 40 m thick; composed of thick banks of limestone alternating with thin layers of marl; the limestone is composed of layers of oysters and gastropods and contains 60% of carbonates and 40% of phosphates and silica; this rock provides an excellent building material. (2001 SECA report, p.17)



Twins Church and the Castrum

There are no permanent surface streams and the only water found in the area is in a deep aquifer. Deep wells today draw water from 300m deep. Seasonal aquifers develop in wadi bottoms, but this water is not sufficient to support large populations. This is the reason why so many cisterns and birkets are found in Umm ar-Rasas, being this an efficient system to store water taking advantage of winter storms, which are short and unpredictable (2001 SECA report, p 17-18)

Earthquakes are common in the region, generated mostly in the Dead Sea Rift and associated perpendicular faults among which is the Siwaqa fault, 12 kilometers south of Umm ar-Rasas. Earthquakes with magnitude in excess of 6 occur along the Dead Sea Rift (2001 SECA report, p 18)

Climate is continental, with two main seasons, a dry, hot summer with temperatures often surpassing 40°C and a cold winter, when it may occasionally snow. Rains are scarce, around 100 mm a year, occurring mainly in January and February. Winds are mostly westerly with speeds up to 80 km/h (2001 SECA report, p 18).

1.3. Umm ar-Rasas: a World Heritage Site

Umm ar-Rasas was inscribed on the World Heritage List on the 7th of July, 2004, at the 28th Session of the Committee in Souzhou, with ID number 1093. The statement of Outstanding Universal Value was retrospectively formulated in 2009. The following is the adopted 2010 version (WHC-10/34.COM/8E.Add – page 13).

1.3.1. Statement of Outstanding Universal Value (Retrospective Statement 2010)

Brief Synthesis

Located south-east of Madaba on the edge of the semi-arid steppe, this archaeological site, which started as a Roman military camp and grew to become a town from the 5th century, is largely unexcavated. It comprises remains from the Roman, Byzantine and Early Muslim periods (end of 3rd to 9th centuries AD) including a fortified Roman military camp and sixteen churches, some with well-preserved mosaic floors. Particularly noteworthy is the mosaic floor of the Church of St Stephen with its representation of towns in the region. A tall square tower and associated buildings are probably the only remains of the practice, well known in this part of the world, of the stylites (ascetic monks who spent time in isolation atop a column or tower). Umm ar-Rasas is surrounded by, and dotted, with remains of ancient agricultural cultivation, including terracing, water channels and cisterns.

Umm ar-Rasas description

The picture maps in the mosaic floor of St Stephen's Church of several Palestinian and Egyptian towns⁴ in the former Byzantine Empire are identified by their place names in Greek script. These are of particular significance both artistically and as a geographical record. Other mosaic church floors including at the Church of the Lions, the Church of Bishop Sergius, the Church of the Rivers, the Church of the Palm Tree, the Church of Bishop Paul and the Church of the Priest Wa'il depict birds and animals, fishermen and hunters incorporated into extensive geometric mosaic carpets.

The lifestyle of the stylite monks is conveyed by a 14 meter high stone tower built in the centre of a courtyard adjoined by a small church (the Church of the Tower). A room at the top of the tower, accessible from a door on the south apparently reached by a removable ladder was the monk's living quarters.

The archaeology and inscriptions show evidence that monastic Christianity was tolerated and continued during the Islamic period of the 7th and 8th centuries and testify to the spread of monotheistic beliefs in the region.

⁴ The SOUV mentions Egyptian and Palestinian towns, but not the Transjordanian towns which are presented on the right hand side of the mosaic floor

Umm ar-Rasas values and importance

The Outstanding Universal Value of the site resides in the extensive settlement of the Byzantine/Umayyad period. These remains occupy the interior of the former Roman fort and also extend outside its walls to the north. They include the churches whose mosaic floors are of great artistic value. Further to the north, in a separate group of ruins associated with quarries and cisterns, is the uniquely complete tower accommodation of the stylite monks.

*Through the display values and the importance of the above for **Umm ar-Rasas**, has been registered on the World Heritage List as a cultural site in 2004 by the following criteria:*

Criterion (i)

Umm ar-Rasas is a masterpiece of human creative genius given the artistic and technical qualities of the mosaic floor of St Stephen's church.

Criterion (iv)

Umm ar-Rasas presents a unique and complete (therefore outstanding) example of stylite towers.

Criterion (vi)

Umm ar-Rasas is strongly associated with monasticism and with the spread of monotheism in the whole region, including Islam.

Integrity

The identified remains of the Byzantine/Umayyad settlement are included within two separate core areas encompassed and linked by the buffer zone. The integrity of these is retained. The standing remains and excavated buildings remain intact as part of an archaeological site containing many ruined structures. Parts of the site are dangerous due to structural collapse in past earthquakes and open trenches. The ruins have been subject in the past to unauthorized investigation and excavation.

The limestone structures, some bearing remnants of painted plaster and the excavated mosaic floors are vulnerable to general weathering processes and poor drainage. Remedies for this have involved consolidation/reconstruction of standing structures, backfilling of some excavations and the construction of protective shelters over St Stephen's Church and part of the Church of the Lions.

The property is vulnerable to the increased and unregulated tourism. Its setting has potential vulnerability from possible future development of the surrounding area, which is at present pastoral and sparsely settled.

Authenticity

The form, design and materials, location and setting of the ruined and excavated structures continue to express the Outstanding Universal Value of the property. Their authenticity has to a degree been impaired by the use of incorrect repair and maintenance techniques in consolidation work and in the protection of mosaic floors.

The setting is vulnerable to tourism and local community requirements. Access routes within the site, parking areas, visitors' facilities and pathways all require careful design and management, as do any further excavation and stabilization projects that require shelters.

Protection and management requirements⁵

The site is protected by the Antiquities Law administered by the Department of Antiquities (DOA) under the Ministry of Tourism and Antiquities. The site manager and his assistants, an architect and archaeologist from the DOA are permanently present at the site. Five security guards from the local community deal with security issues and the safety of workers and visitors.

A Management Plan (including a comprehensive conservation plan) has been developed by a working group involving representatives from both the DOA and the Ministry. Expert committees involving staff from the DOA, other government agencies and the universities have studied particular issues and contributed to the process, which has been reviewed following recommendations by joint World Heritage Centre/ICOMOS missions in 2005 and 2006. It will incorporate guidelines and practice standards for maintenance and repair, conservation and archaeological research, together with a monitoring and maintenance programme. Once adopted, it will be implemented by the site manager and trained staff at the site.

Funding has been provided by the European Commission for a site conservation and presentation strategy for Umm ar-Rasas as part of a wider programme 'Protection and Promotion of Cultural Heritage in the Hashemite Kingdom of Jordan', aimed at raising the quality of research, restoration and site management, visitor facilities and information. The works completed in accordance with revisions agreed with the World Heritage Centre including the visitors' centre, security fencing around the whole site, visitors' pathways and a new shelter over St Stephen's Church.

⁵ The SOUV is reported here in its integrity, but this particular section is now obsolete given the changes that have occurred in the administration of the site.

More land has been acquired by the DOA around the southern part of the property containing St. Stephen's and other churches and also between that and the northern part containing the stylite tower and associated structures, enabling greater protection of the site. The DOA has negotiated with the municipality of Um er- Rasas to apply specific regulations to lands adjacent to the DOA-owned land so as to anticipate and mitigate any negative impacts of future land use change. A revision to the boundaries of the World Heritage Site could be considered in the light of the greater extent of land now owned by the DOA.

The partnership established between the DOA and the local community will continue to involve the community in the protection of the site and enable them to benefit from tourism.
(Retrospective Statement 2010)

1.3.2. Criteria for Inscription

The site was inscribed according to criteria (i), (iv), and (vi). The nomination file proposed inscription according to criteria (i), (iii), (v), and (vi). As criteria (iii) and (v) were not accepted, and criterion (iv) was newly introduced, this required a re-working of the justification, which resulted in the adoption of a retrospective statement of Outstanding Universal Value in 2010.

1.3.3. State of Conservation Reports and Monitoring Missions

Eight State of Conservation Reports (SOC) were produced for the site, in 2005, 2006, 2007, 2008, 2009, 2011, 2013 and 2015⁶.

Moreover the following World Heritage Center and/or ICOMOS missions were facilitated by the Department of Antiquities:

March-April 2005: ICOMOS Reactive Monitoring mission;

November 2006: Joint World Heritage Centre/ ICOMOS mission;

March 2008: Joint World Heritage Centre/ICOMOS mission⁷;

July 2008: World Heritage Centre expert mission for the Stylite tower.

The ICOMOS evaluation of the nomination file stressed the lack of a management and conservation plan, and lack of security posed by open excavation trenches and unstable structures on site. This was repeated in the 2005 SOC.

These same issues were confirmed in 2006, with the addition of possible threats coming from the development of infrastructures related to the visitor center. At the 30th Committee meeting

⁶ http://whc.unesco.org/en/soc/?action=list&id_site=1093

⁷ <http://whc.unesco.org/en/documents/100688/>

in 2006, (decision **30 COM 7B.51**), the Committee recommended the implementation of eight priority measures:

- a) Clearly identify the boundaries of the area(s) to be protected and fenced if necessary, even temporarily*
- b) Address the security issues, notably by prohibiting access of visitors to potential dangerous areas and carrying out the necessary works to cover the trenches and archaeological soundings*
- c) Isolate and preserve the most endangered and damaged archaeological and architectural components by establishing a temporary restricted plan of visit paths*
- d) Preserve the mosaics with adequate temporary and protective materials (special geo-textile layers and draining sand layers);*
- e) Consolidate the most endangered architectural elements using temporary but secure structures;*
- f) Stop restoration works and reconstruction of collapsed elements;*
- g) Resolve, when possible, using simple and temporary solutions, the humidity problems, notably for the mosaic floor of the sheltered St. Stephen Church;*
- h) Define the future management structure and financial system, which will be adopted in the management plan for the site.*

All these elements, according to the Committee evaluation, threatened the OUV of the site and could lead, if left unchecked, to the placement of the site on the WH in Danger List.

The 2007 SOC does not report substantial advances on these issues, with the exception of communication with the World Heritage Center leading to the suspension of the St. Stephen shelter project financed by the European Commission, pending consultation with ICOMOS and the WHC on the impact of the project.

In the same year a 16,000 dollar grant was provided by the WHC for monitoring and conservation of the Stylite tower.

The 2008 SOC provided more detailed information on work progress at the sites, noting that *“the European Commission funded project “Protection and Promotion of Cultural Heritage in Jordan” will be complete by April 2008 and includes a visitors’ centre, visitors’ pathways, a new shelter for the St. Stephen’s complex and protective fencing. The report notes that the original shelter provided under this project, to which the World Heritage Committee had objected, was replaced by a protective roof in a simple design and compatible colour and will not include any curtain wall or glass wall which could cause adverse environmental effects. The report also notes that an NGO to promote awareness in the community for the importance of the heritage of Umm ar-Rasas has been established in partnership between the local community and the Department of Antiquities.*

The State Party's report also responds in more detail to the priority issues identified by the joint World Heritage Centre/ ICOMOS mission of November 2006, including its efforts to:

- a) Define site boundaries and provide perimeter fencing;*
- b) Acquire adjacent lands to provide a buffer zone;*
- c) Set up a team to carry out site maintenance, including consolidation of fragile walls and backfilling trenches dangerous for visitors;*
- d) Provide pathways for visitors;*
- e) Establish procedures for protecting mosaics;*
- f) Consolidate fragile architectural elements;*
- g) Stop restoration and reconstruction work on collapsed fragments;*
- h) Stop all archaeological excavation until a comprehensive management plan is established and agreed;*
- i) Discuss a future management structure and financial support system with the Ministry of Tourism and Antiquities;*
- j) Review the Management and Conservation plans initiated since 2005.”⁸*

In March the same year, a joint WHC/ICOMOS mission conducted its evaluation which “provided a positive view of the State Party's efforts to strengthen conservation of the property. The report notes that the “mission members agreed that the situation at the site has been substantially improved following the measures undertaken by the responsible authorities in order to address the main issues raised by the World Heritage Committee” and that consideration of possible inscription on the World Heritage List in Danger “seems not to be necessary anymore.”

The mission report addressed the same issues mentioned by the State Party in its report:

a) The European Commission funded project, conceived to promote tourism, has been substantially modified to give weight to conservation concerns including the elimination of the road initially planned between two archaeological areas and the replacement of the former St. Stephens shelter with a new shelter appropriately designed to cover the whole complex, to eliminate biological deterioration problems and to be supported by foundations outside the perimeter of the churches.

b) The State Party has acquired lands around and between the two main archaeological areas of the property thus defining a homogeneous core area now fenced in for full site protection. The State party has also sought application of new control regulations to adjacent lands within what could belong to a future redefined buffer zone. In due course, proposed boundary modifications to both core and buffer zones designed to facilitate the implementation of a Management plan and Conservation plan for the site, could be submitted to the World Heritage Committee.

⁸ <http://whc.unesco.org/en/soc/911>

- c) Dangerous trenches have been marked, covered and/or refilled to prevent harm to visitors. While constituting a substantial improvement since the mission of November 2006, this work of signage can be continued and improved.*
- d) The installation of clearly delineated and visually integrated pathways improves preservation of the most fragile areas of the property by allowing visitors to understand where access is permitted and not. Here again, signage system improvements could be achieved.*
- e) Most of the mosaic floors on the site have been preserved under thin earth or sand layers, and plastic sheets replaced with more suitable permeable membranes. The use of geo-textile membranes has not been possible at this stage given their high cost, but this could be addressed in the future.*
- f) The State Party has constituted a team to consolidate the endangered architectural elements, and applied best practice techniques to the consolidation of the plaster surfaces of the walls of the “villa” and its fragile supporting structures.*
- g) The restoration and reconstruction of collapsed elements has been halted pending the completion of a future plan for treating such elements.*
- h) Efforts to cover St. Stephen’s mosaics to accompany the removal of the old shelter involving a saw dust layer beneath impermeable plastic sheeting without biocide treatment could increase biological damage. It was noted however that the new open shelter, and an improved rainwater drainage system will reduce humidity problems. The mission report also recommended further documentation on the mosaics.*
- i) The State Party has put in place a new management structure which seems quite effective from a functional point of view. The mission report notes the importance of an annual operations budget to complement the State budget for site management.*
- j) The report notes substantial progress in re-orienting the site’s management plan from tourism to conservation aided by policy shifts which have given the Department of Antiquities full responsibility for developing management plans. The report also noted the utility of building on the Conservation Plan (concerning best practice guidance) recently prepared by the Department of Antiquities, and suggested linking this to an intervention schedule and funding needs. The mission report also recommends that the State Party submit a “technical document” to the World Heritage Centre which would include detailed documentation on many of these recent initiatives.”⁹*

In its 32nd session, the Committee agreed that the progress made at the site removed the threat of putting the site on the WH in Danger List.

⁹ <http://whc.unesco.org/en/soc/911>

The Italian Fund in Trust at the WHC provided 6,000 dollars to carry out monitoring missions during the year, including a July 2008 mission to evaluate the conditions of the stylite tower, which resulted in February 2009 USD 18,750 grant to provide emergency measures there. In March 2009 Jordan submitted a new SOC. The WH Committee at its 33^d session lamented that little progress had been done on the issue of site management planning, noting that the only information on the subject was about new staff hiring or an electronic security system, while no information was provided on the preparation of a site management plan. The WHC was concerned about the lack of a financial system to sustain the operations of the site, and the fact that a technical report requested in 2008 had not been provided, nor a report on the establishment of the boundaries and buffer zone. It also expressed concern that a road was being built connecting the entrance of the site to St. Stephen's church and beyond, in contradiction with previous assurance to the contrary. In particular, decision 33COM7B.56 asked Jordan to submit a technical report according to previous year's decision 32 COM 7B.59 and to include also a technical report on conservation work to be conducted at the tower, and to report on progress in developing the site management plan¹⁰.

The SOC dated February 2011 reports on various conservation activities conducted on site:

"a) Road system

Despite the objections pointed out by the reactive monitoring mission of March 2008, the State Party reiterates the need for the road that has been built between the Stylite tower and St Stephan Complex for maintenance and monitoring activities. In order to mitigate its impact, the Department of Antiquities decided to hide the existing asphalt by covering it with local soil.

b) Technical documents on works

The State Party provides detailed documentation of the initiatives described in its state of conservation reports of 2008 and 2009, and gives information on the conservation initiatives carried out in 2010. The report contains photographs and lists of works undertaken to address hazards and threats inside the property, including consolidation and restoration work. Deep holes were refilled, cisterns along the visitor trail were rehabilitated and several walls restored. Consolidation and restoration works were carried out at the Villa, maintenance, monitoring and rehabilitation works are ongoing at the Churches Complex. Mosaic floors are being documented and restored by experts from the Institute for Mosaic Art and Restoration of Madaba, and shall be covered with soil for protection until appropriate shelters are built.

c) Stylite tower

International Assistance was granted to the State Party in 2009 for investigations and emergency measures for the restoration of the Stylite tower, which was to be used by the Department of Antiquities to undertake some emergency measures, such as installing a stable scaffolding, shoring of the tower and dismantling instable stone structures; conduct a thorough

¹⁰ <http://whc.unesco.org/en/soc/664>

investigation, in particular the structural instability and other forms of deterioration; and prepare a conservation and restoration plan. The State Party utilised only part of the funds. Its report includes a photographic record, structural drawings with explanatory photographs, an analysis of the deformation along the facades and information on the monitoring system and on the geological setting. It also includes a study of material with laboratory testing, implementation of some emergency measures (new scaffolding, shoring, removal of the fallen vault stones), and recommendations for the conservation of the tower.

d) Management plan and structure

The report indicates that a team is working on the development of the management plan and that it should be finalized by the end of 2011. Nevertheless, activities are already carried out within its framework, such as conservation and presentation activities.

- Administrative structure: The Umm ar-Rasas Office employs three specialists and six guards and is responsible for conservation, preparation of the management plan, monitoring, cleaning and preparing lectures and workshops for local communities. The Tourism Office's three employees provide information to visitors.

- Boundaries: The State Party reports working on the appropriation issues between the main archaeological areas and should submit to the World Heritage Centre a final delineation of the property by April 2011. The fence around the property itself has been completed.

- Awareness-raising activities: The Umm ar-Rasas Women's society runs cultural activities, produces handicrafts and sells them at the Visitor Centre to benefit the local community. On the other hand, the Umm ar-Rasas Society for Conservation raises awareness on the values of the site. In addition a Post Office, a Health Centre and a Tourism Police Office have been established within the property. The close-by Municipality regulates building construction in the buffer zone."¹¹

The World Heritage Centre and ICOMOS commented that "no progress has been made on the elaboration of a comprehensive management plan, which should include a conservation plan, an archaeological research policy and provisions for public use. The current focus on visitors' facilities, although understandable, should be secondary to the overall conservation of the property, to which most resources should be devoted. Although progress has been made for the conservation of the Stylite tower, they nevertheless wish to underline the lack of a holistic conservation and restoration project which would ensure the long term protection of this important attribute of the property."¹²

In consequence of this assessment, the Committee in its 35th session issued decision 35COM7B.50, requesting the State Party to finalize a conservation project for the Stylite tower

¹¹ <http://whc.unesco.org/en/soc/387>

¹² *Ibid.*

and urging the completion of the site management plan, “including a comprehensive conservation plan, as well as an archaeological research policy and a public use plan”¹³.

In the February 2013 SOC issued in response to decision 35COM7B.50 DoA listed a number of monitoring activities at the Stylite tower that brought to consideration the installation of stainless steel belts to avoid the tower collapse, while further actions were being considered. It also mentioned a new management plan being prepared as part of a project financed by the European Commission, as well as a moratorium on new excavations and the preparation of a site-wide conservation assessment. The WHC and ICOMOS recognized the work being done, but wanted to recall the State Party that a new management plan had to include also archaeological research policies, a conservation plan and a public use plan¹⁴. In support of the WHC and ICOMOS assessment, the WH Committee issued decision 37COM7B.51 that reiterated the urgent request to the State Party to complete the site management plan.¹⁵

The February 2015 SOC included a detailed report on various studies conducted at the Stylite tower and including various conservation options, although the WHC and ICOMOS assessment rejected the dismantling option. The report also included a draft public use plan and a site management plan table of contents. In this case the comment by WHC and ICOMOS was that the table of content was too succinct to discuss the merit of the plan, while the use plan was a good basis for further development.

Decision 39 COM 7B.53 released the same year by the WH Committee urged the State Party to complete the management plan (including a comprehensive conservation plan and archaeological research policy, and integrating a public use plan), and to submit to the World Heritage Centre a report on the implementation of this plan by **1 December 2016**¹⁶.

¹³ *Ibid.*

¹⁴ <http://whc.unesco.org/en/soc/1895>

¹⁵ *Ibid.*

¹⁶ <http://whc.unesco.org/en/soc/3270>

1.4. Tourism facilities

1.4.1. Infrastructures and facilities

The site is fenced and can only be accessed through the visitor center. Another gate allows visitors to access the stylite tower area. This gate is open during the day and closed at night. Another gate is used to access the cemetery, to the south of the visitor center. This gate is closed but remains unlocked to allow the local community to use the cemetery area.

The Visitor Center was established with support from European Union. It covers a 700 m² surface, and consists of:

- 1- Administration offices
- 2- Exhibition area
- 3- Control Room
- 4- Ticketing area
- 5- Post office
- 6- Tourist Police Office
- 7- Souvenir shops
- 8- Cafeteria
- 9- Toilets (including facilities for disabled people)
- 10- Fire System Control
- 11- Parking lot for buses and cars

Paths have been established in the site leaving from the visitor center and connecting the main monuments.

A paved road leaves the visitor center to provide access for the disabled and VIPs to the St. Stephen complex. In this location there is a small parking area. A toilet building was also built in the slope below St. Stephen. It is currently closed because of lack of water supply.



The Trail that leads to the St.Stephen Complex

1.4.2. Services

The visitor center is under the administration of MoTA.

MoTA has signed three agreements with the Umm ar-Rasas Women Association, the first is a contract for the cleaning of the visitor center, the second and third agreements provide the rental terms for the cafeteria and the gift shop to the same Association. Another shop is rented to a private individual from the village.



The Visitor Center of Umm ar-Rasas and its Facilities

1.4.3. Security

10 policemen, 3 of which officers are assigned to the visitor center for security. 6 carry weapons. They operate with two shifts per day and have a room available in the visitor center. A civil defense station with a fire truck and ambulance are available in the village at a short distance from the visitor center.

CHAPTER 2 – HISTORY OF INTERVENTIONS

2.1. Archaeological Excavations and Surveys

The German explorer **Ulrich Seetzen** was told by his guide while he was camping in Ghawr al-Mazraa on his way back from an unsuccessful journey to Petra about the existence of an extraordinary ruin on the high plateau north of Wadi al-Mujib and that these ruins of Umm ar-Rasas (the mother of lead) are the most exciting.

And he was informed that “this ancient city is found a half day walk southeast of Dhiban, it has only one gate like that of Jarash and more beautiful and confirm to the explorer that the whole city is still preserved; streets, houses and temples. The greatest marvel is the walls, built with large black square stones and have a fine layer of lead instead of mortar, the Bedouins would have taken this lead long ago if the well-constructed large stones would have allowed it” (Seetzen 1854: 352f.).

At the end of his journey he was convinced that Umm ar-Rasas enjoyed great fame among the Bedouins as a house of hidden treasures, but since he could not find it himself and he hope some other traveler could visit it.

J.L. Burchardt also wished to reach the site but he could not manage making the trip (Burchardt 1822).

J.S. Buckingham arrived in Umm ar-Rasas in the spring of 1816 but found the place more modest than what he had expected: “the area is filled with ruined buildings all however of small size and unadorned by architectural ornaments of any kinds though constructed of very large stones and the whole appearance of the buildings was small and unimportant though the masonry was unusually solid for such works and calculated for great duration” (Buckingham 1825: 104).

Irby and Mangles reached the site in 1818 and had the same impression of Buckingham: “the ruins are very extensive, and evidently Christian. There are remains of a stone wall which enclosed the whole city, but there is no architectural remnant worthy of notice” (Irby and Mangles 1823: 471).

The reaction of the explorers who visited the site in the second half of the century was more realistic such as the comments made by G. Robinson (Robinson 1837: 187f) and H. Layard (Layard 1887: 111).

Palmer reached Umm ar-Rasas on his return from Sinai in May 1870 and had the opportunity to study the ruins with more accuracy: "Umm ar-Rasas is a large ruined city of considerable extent built on similar arches to those described in other ruins and contains two churches and surrounded by a strong buttressed wall and is about 400 yards square. From the size and extent of the ruined city, and the two fine churches which it contains, it is evident that Umm ar-Rasas must have been a town of considerable importance during the Christian occupation of the Holy Land" (Palmer 1871: 498-500).

The canon **Tristram** camped with his expedition at Umm ar-Rasas for a week in Feb. 1872 and gave more descriptions: "Umm ar-Rasas a large, solidly built square city far more perfect than anything we have before seen. The walls of the old city is still entire and intact and have imposing appearance" (Tristram 1874: 140-143).

Later **Vailhé** realized that this large square city enclosed by thick walls was a Roman camp at the edge of the desert and when arrived at the site in 1896 he found that the ruins north of the fort were inhabited by some families of Salayta tribes (Vailhé 1986).

In 1898 **Clermont-Ganneau** published the Nabataean inscription seen at Umm ar-Rasas. The orientalist also tried to explain the origin and significance of the name of the ruins (Clermont-Ganneau 1898).

The **Brünnow-Domaszewski** expedition arrived at Umm ar-Rasas in April 1897. They published eight beautiful photos of the site and a general plan for the fort with the location of three churches inside the wall (Brünnow-Domaszewski 1905: 63-72).

On 5th June 1933 **Nelson Glueck** arrived the site and collected only the Nabatean , Byzantine and Arabic (Islamic) sherds (Glueck 1934: 39f.).

In April 1948 **Fr. Bagatti** tried to establish a schematic plan for the ruins to the north of the fort focusing on the buildings with apses which he identified as churches: four inside the wall and six outside the walls (Bagatti 1949: 244-245).

In the following ten years **the members of the Studium Biblicum Franciscanum** returned several times to Umm ar-Rasas to visit, document and test what was previously written about the site, especially after their settling in Mount Nebo and the asphaltting of the road from Madaba to Umm ar-Rasas by the government. The collaboration between this institute and the Department of Antiquities directed by Dr. Adnan al-Hadidi started in the 1980s.

The first excavation campaign was in 1986, with the discovery of the church of Bishop Sergius and the church of St. Stephen (Piccirillo 1986; 1987). In 1988 excavations in the area east and west of the churches of Sergius and St. Stephen continued (Piccirillo 1988). The excavation of the southern sector of St. Stephen, Lion Church and Bishop Sergius continued in 1989 (Piccirillo 1989; 1991). Piccirillo and his team in 1991 started excavations in the Church of the Aedicula (St. Stephen complex), continued excavations outside the church of the Lions, and inside the church of Priest Wail. (Piccirillo 1991).

In 1992 a Swiss mission financed by the Max van Berchem foundation studied the castrum main wall in the south and east sides including its towers and gates. It also uncovered what was thought part of a street in a north-south direction (Boujard 1992). In the same year Piccirillo continued excavations at the Lions church and started excavations at the Peacock church (Piccirillo 1992).

In 1993 the Franciscan mission excavated Umayyad structures identified as houses and olive presses, while continuing excavation in St. Stephen complex (Piccirillo 1995). Between 1995 and 1998 Piccirillo's work concentrated on St. Paul church (Piccirillo 1997; 2002), and in 1999 tombs were discovered in the Lions and St. Paul churches, while excavations started in the church of Tabula Ansata (Piccirillo 2003).

In 2001 Sabal Zaben and Hazim Jaser excavated a house near the Church of the Quarry (Bisheh and Zaben 2003).

The atrium of St. Paul church was excavated in 2000 (Piccirillo 2002; Pappalardo 2002), and in 2001-2002 excavations were conducted to the south of the church of Tabula Ansata, near the wall of the castrum, and in Priest Wail church (Piccirillo 2002).



The Byzantine Villa

Between 2003 and 2007 excavations were conducted at the Reliquarium (Madhkhar) Church by Ali al-Khayyat (DoA), followed by Father Piccirillo (2006; Abela and Pappalardo 2004).

The Byzantine villa was excavated between 2007 and 2009 by the Franciscan mission directed initially by Father Piccirillo, followed by Carmelo Pappalardo.

A moratorium on new excavations is in place since 2009 to prioritize conservation and maintenance.

2.2. Conservation projects

Stylite tower

The first restoration work in the site of Umm ar-Rasas was in 1972-1973 and consisted in consolidation works for the stylite tower foundations and rebuilding some of the collapsed courses (Al-Alami 1973).

Works on the stylite tower were conducted in 2009-2010 starting with documentation and analysis, sounding trenches in the foundations, and replacement of some deteriorated stones, insertion of slabs in the wider gaps and consolidation of some courses. The collapsed stones found inside the upper room were removed and placed on the ground beside the tower, waiting for a decision on a possible anastylosis. (Ali Oweisi/ DoA 2010 Unp. Report).

Laser scanning was conducted in 2013 by DoA, condition assessment was conducted in the same year, while a study on the static behavior of the tower was conducted in 2014 and 2015 by Giuseppe Del Monaco as part of a cooperation project between DoA and ISPRA.

St. Stephen complex

In conjunction with excavation and research, the Franciscan mission directed by Father Piccirillo carried out some consolidation and conservation work in St. Stephen complex already at the time of the first excavations in 1986 and then again in 1991 and 2003 (Piccirillo 1991:525-526);

Conservation was conducted under the direction of Ali al-Khayyat between 2002 and 2009 at St. Stephen complex (St. Stephen church, St. Sergius, the church of the courtyard and Aedicula churches).



St. Stephen Complex

In 2005 DoA conducted a rehabilitation of the ancient passages between the churches of the St. Stephen complex, through St. Paul church, Lions church, the Byzantine Villa, reaching the Reliquarium (Madhkhar) Church in order to facilitate the visit of the site.

In 1989 a shelter was installed above the walls of St. Stephen to entirely cover the church and the apse of Bishop Sergius church. In 2007 this shelter was removed and replaced by a new shelter to cover St. Stephen, Bishop Sergius and the Church of the Courtyard and part of Aedicula church. This open shelter has inside high visitor walkways to provide better view of the mosaic floors. The sides of the walkways have glass panels.

Between the removal of the old shelter and the construction of the new one, consolidation work was conducted for most of the walls of this complex by DoA (Ali Khayyat and Basem Mahamid). Problems were found in particular on the mosaic floors of Bishop Sergius church since rain water had caused there some biological growth. In less measure this growth was also observed on the north section of St. Stephen's mosaics.



St.Stephen Shelter

While constructing the new shelter a layer of 1m sand was put over the mosaic floors of the two churches to protect it and over the sand a layer of wooden slabs. The mosaic floors remained covered for one year, until the completion of the shelter construction. A joint project between DoA and Madaba Institute for Art and Mosaic was then conducted in order to clean the mosaic floor. Cleaning was both chemical, to remove algae and mechanical to remove calcification and salts, with a final cleaning using distilled water. Loose edges and lacunae were consolidated or filled with lime mortar. In 2015 some conservation works was conducted on the floor of the church of the Courtyard and the service room located south of St. Stephen church.

Lions Church

Some consolidation works were conducted directly after the discovery in 1989-90 using black cement on the inside façade of the south wall because the dump outside the church on this side was higher than the wall. In 2002 the first restoration project conducted by DoA included the consolidation of all walls of the church. The mortar used was composed of 2/5 lime, 2/5 sand and 1/5 white cement with the addition of local soil for color. Also the first arch to the right of the church main gate was rebuilt under the direction of Ali Khayyat. In 2005 DoA and Madaba Institute for Art and Mosaic carried out a joint project which included the chemical and mechanical cleaning of the mosaic floor.

St. Paul's church

This church is the only one that has evidence of window design dated to the 6th-8th centuries A.D. In 2004-5 the main restoration works were conducted included rebuilding one course of the south wall, rebuilding three arches of the south aisle of the church using the same mortar mixture used in Lions Church (lime 2/5, sand 2/5, white cement 1/5 and local soil to give a similar color of the walls). One of the door lintel in the south side was also rebuilt.

Cleaning of the mosaic floor was conducted by the Madaba Institute in 2003.



The Restoration work in St. Paul Church 2005

Other churches

Further conservation work was conducted by DoA (Ghazi Bisheh) in 2000 at the Church of the tower and by Ali al-Khayyat between 2002 and 2009 in priest Wa'il, and Peacock chapel. In this chapel consolidation work consisted in capping the walls with mortar to stop water infiltration and in filling gaps between stones. The mosaic floor was conserved by the Madaba Institute in 2005-6 by filling lacunae, repairing edges, and cleaning the surface. In priest Wa'il church consolidation work was conducted on the walls and capping was made to avoid water infiltration. The mosaic floor edges were repaired and lacunae were filled by the Madaba Institute for Art and Mosaic.

In 2008 70% of the mosaic was damaged by looters looking for tombs beneath it. Conservation was undertaken in order to repair this damage.

The Tabula Church was not conserved with the exception of drainage channels that connect to the main cistern of the church.



The Restoration work in Tabula Church 2005

Castrum

The Max van Berchem mission consolidated and rebuilt walls and gates of the twin churches found inside the castrum between 1992 and 1993 (Boujard 1992). The mosaic floors was damaged by vegetation growing on it also due to water stagnating there, therefore in 2003-4 DoA conducted a project to fill lacunae, repair the edges, and cover them with plastic sheets and sand. The same consolidation works were repeated in 2007.

Other structures

In 2008 DoA backfilled many open trenches and endangered areas, covering all the cisterns with wooden lids. The wine press, one of the best of this kind found in the area, has plain white tesserae mosaics 90% in situ. The consolidation works started in 2005 (Ali Khayyat) by covering the upper part of the walls with new mortar to stop water infiltration, and to consolidate some weak walls.

2.3. Site development and community engagement

Between 2007 and 2010 the site development project supervised by MoTA, and funded by European Commission, included the construction of the visitor center, parking area, shelter of St. Stephen, fencing, tourist trails and pathways and installation of interpretation panels.

Attention towards the local community is witnessed by a number of programs managed by MoTA, in particular:

- Involvement of local associations with Visitor Center administration and services (souvenir shops, Cafeteria, cleaning services in the visitor center)
- Involvement of local stakeholders in discussing projects to advance Tourism Sector activities.
- Creation of new job opportunities and reduction of unemployment.
- Training workshops for young people as (handicrafts, textiles, textiles art, painting and drawing on glass).



The Visit of Ms.Irina Pokova, UNESCO's director general to the site of Umm ar-Rasas, with HE Minister of Tourism and Antiquities and DoA Staff

- Productive development as appropriate to the local community needs and their culture, traditions and environment.
- Awareness programs for schoolchildren
- Workshops with Queen Zain Institute (Reproductive Health, youth empowerment, awareness workshop for Women, etc.)



Sovinoir shop in the visitor center of Umm ar-Rasas, operated by Umm ar-Rasas women Association

2.4. Site Management Planning

The development of a site management plan for the World Heritage site of Umm ar-Rasas has been in the making for the past 20 years. This is not the place to investigate the reasons why these efforts have not resulted in a formally adopted document. This section will however analyze the different documents that have been developed over the years, including those that, while not formally “management plans” do contain recommendations that can find their place in a list of management planning “actions”.

In **1994** a first project for an archaeological park at Umm ar-Rasas was developed by the mission directed by Father Piccirillo. This concept excluded the construction of a fence as in the opinion of the architects the site had to be left as much as possible in its “as found” conditions, and to allow agricultural and pastoral activities to continue uninterrupted. Two tourist structures were also conceived, the first to the west of the castrum and the second to the northeast of St. Stephen complex. An internal road was also designed to bring the tourists from St. Stephen to the Stylite tower (Arrigoni et al 1993, 1994). The project also included a concept for sheltering St. Stephen’s complex, respecting the original planimetry of the churches thus covering St. Stephen and Bishop Sergius churches with two distinct but interconnected closed structures (Guidotti and Steri 1994:336)

In **2001**, the EC financed a project for the development of the sites of Umm ar-Rasas and Lehun. The resulting document, “Protection and Promotion of Cultural Heritage Project. Preliminary

design for Umm-Ar-Rasas" (SECA 2001), contains a number of action items that anticipated the EC-financed implementation of tourism facilities at the site. The 2001 document tackled the issue of tourism development from a wider perspective, which included several recommendations aimed at ensuring protection of the archaeological resources and improve security. The main issues tackled by the project were:

- Management:
 - Land purchase
 - Zoning
 - Boundary definitions
 - Fencing (using a "green" solution, such as prickly pears or agave)
 - Landscaping
 - Enforcement of legislation
 - Site maintenance
- Site restoration and presentation
 - Cleaning
 - Backfilling
 - Removal of excavation debris
 - Recording and assessment
 - Conservation of the various site components
 - Ground penetrating radar to identify possible voids
 - Dismantling of old shelter and construction of new shelters on most churches
 - Infrastructure development and visitor center
 - Paths
 - Signage
 - Publications
- Socio-economic and institutional development
 - Urban and local development plan
 - Socio-economic survey
 - Agreements for the management of agricultural fields
 - Creation of local associations
 - Training for tour guides, handicraft manufacture, mosaic maintenance

This project was eventually conducted between 2007 and 2010, although not all components were implemented and the shelter concept was radically altered from the original design, which recommended a low structure, totally enclosed, with a modular component that could be implemented over all churches at a relatively low cost.

In March **2006** Malcolm Duff, coordinator of the EC project, issued a final report in advance of tendering for activities under the 4.1million Euros EC grant (Duff 2006). The report presented a number of initiatives conducted as part of the project, including capacity building in site management, although it claimed that the preparation of a site management plan was not in the scope of work of the project. Moreover the report criticized the delays which were due, according to Duff, to the use of four or even five consulting firms in various phases of terms of reference and report generation, including SECA in the first phase of studies and preliminary project definitions, ANTEA, who wrote the terms of reference for the final design, and HALCROW, who was appointed as final design consultant. The biggest issue, according to Duff, remained the lack of a serious financial commitment by MoTA to provide the site with the necessary funding to ensure its operations (Duff 2006).

DoA commissioned a site management plan to a German consultant, Wolfgang Koellish, who prepared it with Sabal Zaben in **2006**. By the author own admission, two months to prepare the plan by a conservation architect and an archaeologist was insufficient to develop it in all its components and the choice was to produce an operational plan which is heavily geared towards inventory and condition assessment. The plan was developed with the understanding that the EC project would have been implemented. It stresses the need for cooperation among DoA and MoTA to ensure the proper management of the site, and mentions the importance of community and stakeholder involvement, especially in the development of income-generating activities to benefit the local population. The plan however remained in a draft form and is largely incomplete (Koellisch and Zaben 2006, Unp. Report).

In **2008** DoA Madaba Inspector Basem Mahamid drafted another management plan which was not adopted. The plan tackled the following issues:

1. Establish an administrative structure and define the staff numbers and skills for this structure
2. Establish a committee to review and implement the plan proposals
3. Define conservation actions for all site elements following international conservation standards, including a monitoring plan.
4. Define the elements of an archaeological policy, including regulations for new excavations
5. Identify threats and risks.
6. Research and discuss Arabic sources for the history of the site
7. Develop cooperation with the local community in order to provide economic opportunities and raise awareness on the importance of the site.
8. Consider the inclusion of Lehun and Dhiban in the plan's strategies and actions
9. Develop the sites in order to increase the duration of tourist stay in the area
10. Ensure security at the site

11. Increase visitor awareness, in order to provide income opportunities for the local community and to increase the protection of the site.
 12. Develop the site in order to promote the site as a tourist destination in the Madaba area
- The plan was written in Arabic, but remains incomplete as it concerns the definitions of strategic aims and of a detailed conservation plan (Mahamid 2008 Unp. Report).

In **2014**, in conclusion of an 18-months project financed by the EC¹⁷, a public use plan was developed by the project consultants. The aim of the document was to assist authorities in providing suggestions, concepts, and practical ideas to allow them develop an overall tourism strategy for Umm ar-Rasas, by identifying key issues, obstacles and how to avoid them, for balancing conservation and development in the area, and for promoting solutions and activity to address these issues. The recommendation was to develop this strategy in parallel with the site management plan, by involving the same set of key stakeholders throughout all processes. It strongly recommends community participation, but it remained a theoretical model as no action plan was included.

In conclusion, it is essential that the site is provided with a management plan that can be immediately adopted and implemented, as a tool to sustain its development and conservation, and in order to fulfill WHC requirements. Previous plans will be taken into consideration and stakeholder consultation will ensure that the final plan has the support of all parties involved.

¹⁷ Twinning JO/12/ENP/OT/20 “Strengthen the institutional tourism system in Jordan by enhancing the capacities of the Ministry of Tourism and Antiquities in Jordan”

SECTION II – SITE ASSESSMENT AND ANALYSIS

CHAPTER 3 – STATE OF CONSERVATION

Since the site was nominated in the World Heritage List, several assessments were conducted at Umm ar-Rasas, as part of required State of Conservation reports submitted to the World Heritage Committee. DoA conducted many routine monitoring activities at the site in previous years. This section is mainly concerned with the present state of conservation of the archaeological remains in order to identify present threats and challenges and establish a priority list of conservation interventions required to reduce the risk of further damage to the site's cultural resources. A rapid assessment was conducted in September 2015 as part of the activities leading to the preparation of this management plan. The survey was conducted by the DoA site management planning team.

3.1. State of conservation of the archaeological structures and mosaics

3.1.1. St. Stephen complex

The shelter is open on all four sides allowing dust to blow inside. This requires permanent cleaning of the mosaic floors and increases the possibility of abrasion of the surface of the tesserae by the continuing mechanical action of brooms and other cleaning equipment. Bird droppings impact the mosaic surfaces and require manual cleaning. Because of their chemical content, droppings may cause color change in the stones.

The complex is also suffering from humidity coming from the ineffective drainage system. The roof gutters channel the water to two separate underground pipes. One brings the water to an ancient cistern, which is completely full and tends to overflow during rain episodes; another is supposed to send the water away from the building, but the pipe is clogged and water overflows into a room behind the south-eastern service room of St. Stephen church, eroding the base wall, which is partly collapsed, and infiltrating under the mosaic and causing salts to migrate to its surface. Moreover a tomb excavated by Father Piccirillo in that room was left open, causing further erosion.

The glass panels of the walkways are not stable because the plastic system fixing them has deteriorated, making them slip from their support. Some of them collapsed on the mosaics, fortunately without causing damage, others have been removed while some are still hanging dangerously. It must also be mentioned that the foundations of the shelter, because of their

large dimensions, damaged both the stratigraphy and archaeological remains. They also facilitate water infiltrations under the walls and mosaic floors.

DoA has a permanent team of technicians working on the mosaics, from cleaning to filling of lacunae and edge repairs.

3.1.2. Castrum

No restoration or consolidation works were conducted on the castrum walls. In 2001 a rapid assessment was conducted in the framework of the EU project (SECA 2001). In 2007 an evaluation study concluded that the south and west walls were the most deteriorated (Mahamid 2008). The south wall in particular requires immediate attention to avoid catastrophic collapses. The north and east gates of the castrum need to be excavated and consolidated. The castrum walls were constructed of huge undressed boulders wedged with cobbles and a weak mixture of mortar and soil. Inside the castrum remains unexcavated and practically inaccessible with the exception of the Twin churches excavated by the Swiss mission near the southwestern corner of the castrum. These remain in relatively good condition, although bushes are growing on the backfill sand covering the mosaics, threatening their conservation. Exposed portions of the mosaic also show tesserae detaching from their support.

3.1.3. Stylite tower

The tower today requires a comprehensive conservation project to address the deterioration of the stone faces and its structural problems. The anastylosis of the upper chamber may also be required in order to address the problem of the 4 walls of the room, which are in danger of collapse.

The first state of conservation assessments, which included a detailed survey of the tower, was conducted by the mission directed by Father Piccirillo in 1987 (Piccirillo 1993:301)

In 2006 Wolfgang Koellisch and DoA conducted an assessment recurring to photogrammetry to exactly measure the cracks and open joints visible on the monument (Koellisch 2006, Unp. Report). Photos were compared to earlier images from the 1940's to verify whether cracks had expanded. Moreover a stone-by stone assessment was made (pp.17-37), showing the type of damage suffered by each. 8 classes were identified:

1. Good condition, no measures are necessary
2. Small cracks, no need for repair
3. Cracks in need for consolidation

4. Micro organism attack
5. Weathering, conservation recommended
6. Weathering, conservation useful
7. Missing parts, completion recommended
8. Small missing parts, possible repair-mortar measure useful

Of the 468 stones analyzed at the time, the following belonged to each category:

1. = 307
2. = 6
3. = 5
4. = 13
5. = 33
6. = 49
7. = 7
8. = 48

This means that in 2006 94 stones (20% of the total) were in need of some kind of intervention, mainly on the north face of the monument, which is the one most exposed to the atmospheric elements. The report included also a detailed analysis of the structural risks of the stones located around the monk's room.

A UNESCO mission was conducted by architect Davide Sicilia in 2008 (Unp. Report). It recommended in depth studies on the structural behavior of the tower, as well as the lifting of the stones fallen inside the room, their reconstruction in the visitor center, as well as the dismantling and reconstruction of the walls of the room, given the bad state of conservation of many stones.

Documentation was conducted by DoA using a total station in 2009. This documentation was supplemented in 2012 by laser scanning which generated a 3D model of the site (Safi 2009, Unp. report).

DoA also commissioned a geological study to the National Resources Authority (NRA Unp. Report). The study consisted in the excavation of two boreholes, approximately 7 m deep, in order to test the bedrock on site. A number of physical and chemical tests were also conducted on the stones. Their recommendation was to reinforce the foundations with cement, to "empty" the tower from rubble and to fill joints with mortar. None of this advice was considered suitable by DoA (Al-Oweisi 2010 Unp. Report).

In 2008 DoA started a documentation and conservation project under the responsibility of Ali Al-Owaisi. It included the excavation of two trenches in the western and northern sides of the tower to study its foundations. The trenches contained Umayyad pottery and confirmed that the tower's foundations rest directly on bedrock.

The project included the backfilling of a cave located 4m north of the Tower in order to reduce water infiltrations, the installation of glass monitoring devices, especially in the western and south sides to check the stability of the tower¹⁸, the consolidation of the upper course over the monk's room (removing a stone detached from its position and putting back two collapsed stones to their location without using mortar), and the filling of some gaps between stones by putting some stone slabs. The project carried out also the removal of the stones of the dome collapsed inside the monk room, and the cleaning of pigeon droppings inside this room (found to be 70cm thick). No floor could be found for the upper room, probably destroyed by the collapse of the vault (Al-Owaisi 2010 Unp. Report). Recommendations for future work included the use of lime mortar to grout gaps and alveoli on the surface of deteriorated stones, and the reconstruction of the styliote tower upper room using original vault stones and new side stones in the visitor center, since its anastylosis was not advised. It also recommended the bracing of the walls of the room with carbon fiber belts from the interior, and the installation of stainless steel spikes to discourage birds to use the upper room for nesting (Al-Owaisi 2010 Unp. Report).

In 2014 an engineering, geotechnical, geophysical, seismic and structural analysis was conducted by a joint team of experts from ISPRA, the Geological Survey of Italy and ENEA, Department for Natural Risk Prevention and Effect Mitigation. The work was finalized to providing a technical support to the Department of Antiquities, for long term restoration and structural conservation of the tower. Investigation was mainly focused on the following aspects:

- Analysis of potential causes and effects that lead to present damage of the tower;
- Analysis of available technical documentation and data from investigation already undertaken in recent years;
- Implementation of further investigation based on engineering geological techniques, geophysical analysis and structural modeling vs. seismicity to complete the scenario of damage cause-effect;

A report suggested some interventions that DoA deemed too invasive (Del Monaco 2014 Unp. Report). DoA have revised again the proposed interventions (mentioned in SoC submitted to WHC in 2015), and found that it is not yet completed and applicable, therefore, DoA will keep monitoring and adopt only preventive actions until reaching a suitable and acceptable solutions that maintain its authenticity.

¹⁸ These are still in place, but one has broken, located in the upper west side in the course below the monk's room.

3.1.4 Other structures

Lions Church

In 2013 a training course for the local technicians on the safe covering of mosaic floors was conducted as a cooperation project between the European Center for Byzantine and Post Byzantine Monuments of Greece and DoA (Chlouveraki and Mahamid 2014). The training included removing the plastic sheets and sand layer covering the mosaics and their replacement with layers of geo-textile fabric, sand bags and finally 40cm layer of sand. This treatment has improved the situation, but tour guides unfortunately remove the sand cover and raise the geo-textile, damaging it, in order to show to tourists the mosaic below.

Palace (Villa)

The excavation works are not completed, there is lack of documentation and publication except some documentation works conducted by Basem Mahamid in 2007 (top plan drawings and photos).

The walls are almost collapsed although it is the most completed and beautiful civil building in Umm ar-Rasas.

The building is characterized by the plaster that covered the interior walls. Some consolidation works for the edges of the plaster was conducted in 2008, and some plaster is still in situ. Consolidation of the main gate of the building was also conducted in 2008.

Church of St. Paul

The structure of the church is in good condition. The mosaics are still covered by plastic sheets and sand, and suffer from different problems; vegetation, cracks, efflorescence, detached tesserae, and lacunae.

Wine Press

The structure is still in relatively good conditions, but needs constant monitoring especially as its plain mosaic floors are concerned, since they are exposed. The top of the walls need lime mortar filling to avoid water infiltration.

Complex between Wine Press and St. Paul and Peacock churches (Winery)

This is the most dangerous area in Umm ar-Rasas given its depth and precarious state of conservation of the structures it contains, which were never conserved or consolidated after excavation. It needs more excavation and documentation for better understanding of its function. It also needs a barrier or fence to avoid people approaching its unstable edge.

Peacocks Chapel

The floor of the chapel is covered with plastic sheets and a layer of sand since its cleaning in 2005-6. There are problems of vegetation growing on the backfill, and plastic sheets are known to create moisture problems and biological growths.



Showing St. Stephen, St. Paul, Pecock

Church of the Reliquary (Madkhar)

No restoration or consolidation works were conducted there since the excavation work is not completed. The church has not been properly published nor documented, the walls are in a bad condition (north wall has collapsed), and most of the tesserae of the mosaic floor are detached.

Priest Wa'il and Tabula Churches

The mosaic in Priest Wa'il church is suffering from vegetation growth as the sand covering it has disappeared. The Tabula church was not conserved and its walls are in a bad state of conservation.

The Quarry Church and the building with the rolling stone

The Quarry church was excavated by Father Piccirillo, and the building with the rolling stone by DoA. They were not consolidated or conserved. They lack documentation, and suffer from some limited collapse, cracks, and vegetation growth.



The Quarry Church

The Tower Church

The walls of the church were consolidated by DoA then restored in 2004 together with the plaster floor. The consolidation works extended to the service rooms of the same church located on its northern side. It is in relatively good conditions.

Building near the Stylite Tower

Its walls were consolidated by DoA. Good condition overall, but the north wall is bulging and will require monitoring in order to check on its eventual progress.

Cisterns

In 2007 DoA closed 37 cisterns by raising the cistern intakes and covering them with wooden lids. Most of the lids were removed and some intakes demolished by local people to allow pigeons nest inside them in order to hunt them.

3.2. Risk assessment

3.2.1. Natural threats

Rainfall is relatively modest but it may come in violent storms. The problem lies in rain water management at the site since there are no drainage channels with the exception of the visitor center, where channels supply a cistern in the lower parking area for use in emergency situations. In St. Stephen complex there are two drainage channels, one of the drainage channels supplies one of the ancient cisterns in the south west side of the complex. It is assumed that this may increase the humidity under the mosaic floors; the second channel is designed to drain water towards the valley but it does not work properly because it is not completed and clogged. Rainfall also causes erosion of the ancient terraces if these are not maintained, digging channels and affecting the terrace walls. Rainfall however does not affect the trails as they are designed to drain water quickly. The problem remains in the many excavated areas which are lower than the present ground level, thus allowing water to stagnate there following rain episodes.

Wind affects the site in two seasons: in the Spring (April and May), with a wind known as *Khamasin* and in the Autumn, with a wind called *Sharqiya*. They are both strong winds, blowing at 40/50 knots and carrying sand and impacting the more delicate limestone blocks, such as those of the Stylite Tower. They also affect the mosaic floors of St. Stephen complex and accumulate **dust** on mosaic floors requiring frequent cleaning. These interventions can have negative impacts in the form of discolorations, erosion, and loss of tesserae, especially near the edges of lacunae.

High temperatures and day/night temperature fluctuations (especially in winter) affect the stones of the castrum.

Humidity affects the exposed mosaic floors or those covered using plastic sheets. Unfortunately most mosaic floors are covered using this method. The Lions church is the only one where geotextile was used.

Humidity also affects the stones of the castrum which are particularly fragile and tend to split, causing parts of the fortification wall to deteriorate and in some case collapse.

Birds enter St. Stephen complex and their droppings affect the mosaic floors. They also nest in the upper room of the stylite tower. Local hunters are known to remove cistern covers so that pigeons can nest inside where they can be easily captured.

Rodents such as rabbits, moles and mice and jackal dig beneath the mosaic floors and cause tesserae detachments and lacunae.

Bushes grow on the walls and mosaic floors, leading to cracks and mortar loss by way of their roots. Microbiological growths of lichens and algae is also observed, leading to small cracks and stone surface decay, including in the stylite tower.

Natural decay of original mortar is also observed: its disintegration causes stone slippage and wall collapses, especially if left exposed after excavation

Earthquakes have not caused damage in recent years, but the site is located in a seismic area. Earthquake damage is evident throughout the site, with many wall collapses and slippage. This is particularly evident in the stylite tower, where cracks and stone movements are the consequence of structural stress due to earthquakes.

3.2.2. Man-made threats

Archaeological excavations, while they contribute to understanding the site and enriching its elements, are a cause of damage if they are not accompanied by restoration and consolidation works; moreover the removal of later phases of occupation during excavation does not allow understanding the site in its full complexity.

Random excavations or illegal excavations conducted in limited areas of the site by looters alter the archaeological stratigraphy in those areas and damage structures and mosaic floors. Therefore, a fence was installed around the site and guards were employed to limit these actions.

Improper materials were used in early conservation, including the use of cement to seal mosaic lacunae, fill voids between stones, or repair mosaic and plaster edges. Cement not only is incompatible with lime mortar as it has a different strength, but also leaches salts into the materials it comes in contact with, creating problems of salt efflorescence and crystallization.

Lack of maintenance both in the visitor center, along paths, and in the archaeological sites is the cause of accelerated decay and collapses.

Lack of documentation affects the capability of conservators to intervene properly on a site, since missing information about what was found in excavation, or what kind of interventions a particular site received, can seriously hamper conservation efforts.

Lack of awareness by local community members as evidenced by the action of hunters (destroying the reconstructed cistern heads to allow birds inside), of tour guides (uncovering protected mosaics to show them to tourists), and the community in general (garbage accumulating / thrown along the fence, especially in front of the school building).

Urban Development around the site, has created visual pollution which will only increase if left unchecked.

Site development, such as St. Stephen shelter, its service road, the fence, the parking area, the paths inside the site are elements considered essential for tourism development but the way they have been built has caused visual pollution.

CHAPTER 4 – THE MANAGEMENT CONTEXT

4.1. Legal status and protection

4.1.1 Legal framework

A study conducted in 2005 for the Ministry of Tourism and Antiquities in the framework of a Tourism Development project revealed that:

- *A weakness in the existing master plans (...) is their very generic design which does not allow to tackle with their urban scale. As a consequence, when a more detailed approach to planning is needed, master plans revealed to be far from meeting the local specific urban development requirements.*
- *This weakness registered in the master plans has an impact also at the scale of specific policies such as the protection of heritage sites and buildings.*
- *Current threats to heritage urban areas and buildings in Jordan are mostly coinciding with the **absence of an effective legislative framework for an integrated approach to conservation programs and their sustainable promotion.** The existing legislation is fragmentary and incomplete, and as such it is of very little use for a comprehensive development and valorization of the heritage as a whole. (Secondary Cities Development Study 2005, Annex A, pp.3-4)*

The same study however pointed out that there is adequate legislation in Jordan to protect cultural heritage sites. For example, the **National Building Law No. 7/93** is constituted by 32 codes, each one regarding different building construction aspects as well as some urban issues.

In this law, Code 20 (*Urban Aesthetics Code*) covers urban aesthetics with respect to :

- a. land planning;
- b. local environment aesthetics;**
- c. natural and planned sites;
- d. public and private parks and gardens;
- e. archaeology and archaeological sites;**
- f. traditional buildings;**
- g. public services;
- h. commercial and information advertisements;**
- i. maintenance.

This code aims at making recommendations to those in charge of city administration to enhance city aesthetics and prevent its distortion.

In this code there are also recommendations to give value to archaeological sites and monuments: “The monuments must be highlighted as aesthetically pleasing element of the city, after the restoration and protection of the surrounding environment, and the surrounding land must be acquired depending on the archaeological importance and then make it suitable to highlight the archeological features”. The code recommends also the installation of interpretation panels, and that the monuments should be illuminated at night, especially those that are in a city.

The Building and Organization Regulations for urban and villages year 2015 issued under article 67 of the Organization of cities and villages and buildings Law No. (79) of 1966 defines heritage buildings as “ *architectural properties (that) have architectural, historical and cultural characteristics associated with special events*”.

Article 45 of the regulations imposes to the project owner the submission to the Supreme Council of Urban Design the following documents:

1. Geological study
2. Environmental impact Study
3. Traffic study of the project site
4. The approval of the Department of Antiquities.

Article 50

The Urban Committee should identify all Heritage Buildings within the Municipality border, classify and evaluate them in coordination with relevant authorities in accordance with the current legal framework:

- A- It is forbidden to demolish, destroy, vandalize, and add advertising panels / signs on a heritage building or on any parts of it.
- B- In accordance to applicable rules the owner must obtain approval from relevant authorities if the property is located close to archaeological sites.
- C- The owner, contractor and engineer must stop and inform the relevant authorities if any antiquities remains are found, subject to liability.
- D- In consideration of rules in paragraph A of this article, it is not permitted to modify a heritage building that has heritage architectural elements without written approval from the Urban Committee.

The current legal framework for antiquities in Jordan includes the following laws

- Antiquities Law No. 21 of 1988, amended in 2002 (amendment No. 23), 2004 (amendment No. 23) and 2008 (amendment No. 55);
- Law No. 5 of 2005 on the Protection of Architectural and Urban Heritage, ruling the protection and management of cultural heritage dating after year AD 1750;

- Regulations for Archaeological Projects and Surveys in Jordan of 2015

The structure of the Law can be summarized as follows:

- Definitions (articles 1-2);
- Competent authorities' roles and responsibilities (article 3);
- Property of antiquities (articles 4-8);
- Antique sites' protection, excavation and discoveries (articles 9-22);
- Movable antiquities' trading, import and export (articles 23-25);
- Sanctions and penalties (articles 26-30);
- National museum (articles 31-32);
- Other issues (articles 32-36).

With specific reference to the case of Umm ar-Rasas, the following articles appear of fundamental importance in ruling its management, investigation, development and other interventions at the site:

- i) article 2: definition and legal status;
- ii) article 3: competent authority;
- iii) articles 4-6: property of antiquities and sites;
- iv) articles 9 and 13-22: protection, excavation and discoveries.

The **legal definition and status** of Umm ar-Rasas must be considered in the framework of present laws and regulations. Within the broad and general group of "antiquities¹⁹", the Antiquities Law 21/1988 classifies the sub-group of immovable heritage as follows:

- "Antique sites" (Antiquities Law 21/1988, art. 3, par. 8), consisting in sites whose importance and value is officially recognized by the State and namely:
 - a. Any area in the Kingdom that was considered historic site under former laws;
 - b. Any other area that the Minister decides that it contains any antiquities or that is related to important historical events, provided that this decision shall be announced in the Official Gazette.
- "Immovable antiquities" (Antiquities Law 21/1988, art. 3, par. 9), consisting in the larger group of immovable heritage bearing some kind of significance and value, namely "fixed

¹⁹ According to the Antiquities Law "antiquities" are: "a) Any object, whether movable or immovable, which has been constructed, shaped, inscribed, erected, excavated, or otherwise produced or modified by humankind, earlier than the year AD 1750, including caves, sculpture, coins, pottery, manuscripts and all sorts of artefact that indicate the rise and development of sciences, arts, manufacturing, religions and traditions relating to previous cultures, or any part added thereto, reconstructed or restored at a later date; b) Any Object, movable or immovable, as defined in the previous subsection referring to a date subsequent to the year AD 1750, which the minister may declare to be antique by order of the Official Gazette; c) Human, plant and animal remains going back to a date earlier than AD 600" (Antiquities Law 21/1988, art. 3, par. 7).

antiquities that are connected to the ground, whether built on it or existing underground, including antiquities underwater and those in territorial waters” (Antiquities Law 21/1988, art. 3, par. 8).

- “Antiquities protectorate” (Antiquities Law 21/1988, art. 3, par. 14), defined by the Law as “an area of land that contains archaeological remains or human or natural remains that have been designated and announced by a decision of the Cabinet. This decision is based on the recommendation of the Minister supported by a recommendation of the Director General. These include the terms and provisions for the preservation of things present therein” (Antiquities Law 21/1988, art. 3, par. 9).

Umm ar-Rasas was declared a “National Property” and a “Protected Area” under the Antiquities Law 24 (1935). The declaration was published in the Official Gazette of Jordan on 1/12/1939. The property includes “ruins, cisterns, inscriptions and decorated stones” as expressed by the coordinates provided together with the declaration in the above-mentioned official publication. The site thus falls under the category of sites mentioned in article 3, paragraph 8 of the current Law, that is “any area in the Kingdom that was considered historic site under former laws” (Antiquities Law 21/1988, art. 3, par. 8). Therefore, its current legal status is that of “antique site”, with all special provisions this position entails and with particular reference to registration, ownership, rights of easement, protection and investigation.

The **competent authority** is the Department of Antiquities of Jordan (DoA), whose specific functions for heritage sites include:

- Their appraisal and evaluation;
- Their administration, protection, maintenance, repair and preservation, beautification of their surroundings and display of their features;
- Their research and investigation.

In the specific case of Umm ar-Rasas, site management is partially shared with the Ministry of Tourism and Antiquities (MoTA) which is responsible for tourism development, paths inside the site, their maintenance, the maintenance of the visitor centre, the organization of events, and the engagement of the local community. A more in-depth analysis of the management system at Umm ar-Rasas, particularly of local authorities’ respective roles, responsibilities, current staffing and activities is provided below.

In general, according to Antiquities Law 21/1988 the **ownership** of immovable antiquities is uniquely vested in the State (Antiquities Law 21/1988, article. 5, paragraph a). With specific reference to antique sites, their identification, ownership and rights of easement are concretely formalized through legal procedures and acts. Particularly, antique sites should:

- Have names, limits and rights of easement recorded in the Immovable Antiquities

Register (Antiquities Law 21/1988, art. 4, par. a);

- Be registered at the Department of Lands and Survey, together with their rights of easement (Antiquities Law 21/1988, art. 4, par. b);
- Be registered in the name of Treasury/Antiquities (Antiquities Law 21/1988, art. 5, par. f);
- Be published in the Official Gazette, with exact definition of their names and borders (Antiquities Law 21/1988, art. 6).

It is important to highlight that no land in such sites shall be authorized, leased or appropriated to any entity without prior approval of the Minister.

The identification and declaration of new antique sites is vested in the Minister of Tourism and Antiquities, who decides their names and borders upon recommendation of the Director General of Antiquities and in cooperation with the Department of Lands and Survey (Antiquities Law 21/1988, art. 6).

Their name, limits and rights of easement are then recorded in the **Register of Immovable Property** and in the **Registers and Maps of the Department of Lands and Survey**. Just as for all other antique sites, their ownership is registered in the name of the Treasury/Antiquities and their acquired legal status and borders are published in the Official Gazette.

The **protection** of antiquities in Jordan is enacted through three main channels:

1. Prohibition of destruction, damage or alteration of the antiquity itself, as per article 9 of Antiquities Law 21/1988²⁰;
2. Regulation of development works around the antiquity, so as to avoid major impact on the antiquity itself and on its contextual perception, as ruled in article 13 of Antiquities Law 21/1988²¹. Particularly, this regulation provides for an ideal buffer zone that impedes the construction of buildings and dangerous industries respectively within 5/25 m and 1 km from any antiquity. A special provision to extend the construction buffer beyond 5-25 m

²⁰ “It is prohibited to destroy, ruin, disfigure or cause damage to antiquities including the change of their features, the separation of any part thereof, transformation thereof, affixing of notices thereon or displaying of signs on the m” (Antiquities Law 21/1988, art. 9).

²¹ According to the Antiquities Law: “a) It is prohibited to license the establishment of any structure including buildings and walls unless it is about 5-25 m from any antiquities, against a fair compensation. b) It is permissible, by a decision of the minister on the recommendation for the Director, to increase the distance mentioned in Paragraph a) of this Article if necessity requires in any of the following cases: 1-The protection or maintenance of the antique site. 2-The expansion of the antique site. 3-To secure that the antique site is not obscured by any construction. c) It is prohibited to set up any heavy or dangerous industries, lime furnaces or stone quarries at a distance less than one km from the location of the antique sites. In all cases, prior approval of the Department shall be given before inviting offers or awarding tenders for engineering services, design and sketched and preparing the documents of public and private project tenders” (Antiquities Law 21/1988, art. 13).

applies for antique sites, in order to guarantee their protection, maintenance, expansion and appropriate visual perception. Such decision depends on the Minister, upon recommendation of the Director General of Antiquities.

3. Regulation of antiquities' investigation, particularly regarding institutions/authorities entitled to survey and excavate antiquities and the ownership of artifacts found thereon, as stated in articles 14-22 of Antiquities Law 21/1988. The DoA appears as the only authority entitled to carry out antiquities' investigation in Jordan or to license other institutions to undertake such work. All antiquities found during any work carried out by any entity or person in the Kingdom belongs to the State (Antiquities Law 21/1988, art. 21, par. a).

Bylaw 23 (2014) on the management of Tourist sites and in accordance with clause G of Articles No. 14 and No. 16 of **Tourism Law No. 20 for 1988** is established with the purpose of:

- Involving all stakeholders to discuss projects in the Tourism Sector
- Creating new opportunities and reduce unemployment.
- Organizing training workshops for young people such as handicrafts, textiles, textiles art, painting and drawing on glass.
- Encouraging development as appropriate to the local community needs and compatibly with their culture, traditions and environment.

Moreover MoTA's National strategy 2010-2015 had a number of objectives related to visitor experience, and attractions and activities:

Visitor Experience

- Upgrade Jordanian arts and crafts to offer high-quality authentic designs
 - Improve product design to better reflect Jordan's cultural patrimony.
 - Enhance quality and finishing of available handicrafts and mosaics and improve presentation and packaging, marketing and pricing.
 - Provide better access to quality handicrafts for visitors.
 - Provide training and funding supports to encourage entrepreneurship in handcraft production and distribution.
 - Develop 'Learn to' experiential opportunities for visitors to visit handcraft producers to learn the basics of how to make handicrafts.
- Improve the quality of tourism information centers and tourist guides.
 - Develop a number of highly visible, central, information access points in high visitor traffic areas to ease access to information.
 - Add new visitor information points in key cities across Jordan, upgraded visitor centers at major sites, and online and mobile tourist information.

- Increase the number of well-versed tour guides of high integrity who offer quality specialized experiences to visitors in their own language to help position Jordan as a competitive destination of choice.

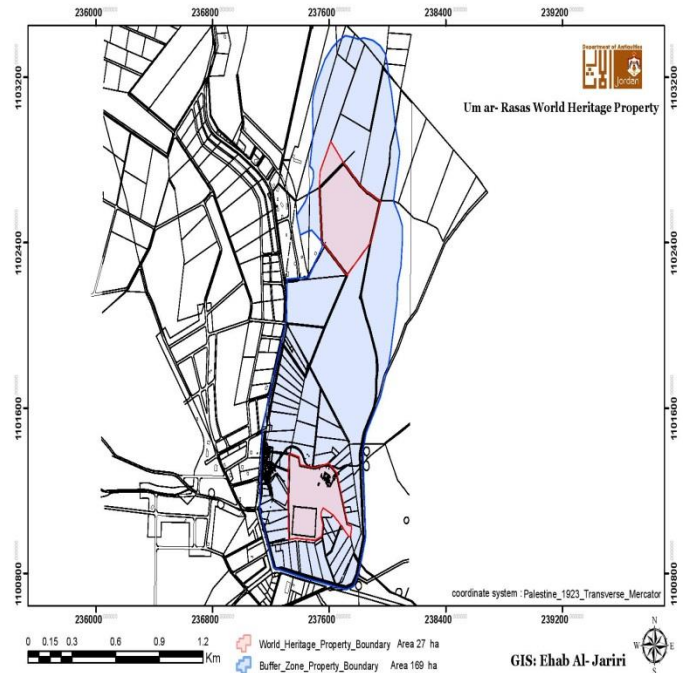
Attractions and Activities

- Engage with the private sector to improve the presentation, management and interpretation of cultural resources and key heritage sites.
 - Determine between the two proposed models for Private Sector engagement:
 - Outsource services under direct concessions to the private sector. Concessioners would develop, promote and manage tourism services at heritage sites in accordance with sustainable use guidelines set by the government.
 - Integrate site management capability within the ministry with the Department of Antiquities as well as private sector representatives to be responsible for planning, procuring and managing delivery of visitor services at publicly-owned tourism sites based on public-private-partnerships.
 - Develop historic site conservation and management plans for priority sites, identifying needed physical enhancements and site preparedness to host entertainment and visitor experiences.
 - Improve interpretation at, and the presentation of key Jordanian cultural sites and attractions by providing on-site services and amenities as well as sound site management and interpretation.
 - Enhance signage and presentation of the value and significance of sites, and improve linkages with surrounding local communities.
 - Ensure the sustainability and well-being of cultural assets by putting in place robust and clear guidelines for site use, management and conservation.
- Enhance visitor entertainment experiences at key regional destinations.
 - Develop both national trails (spanning several towns and villages) as well as local trails (within a certain locale) which will add to the richness of Jordan's offering and deepen visitor engagement with local communities (a key driver in today's holiday selection).
 - Develop Cultural villages - Jordan's great history can be brought to life through cultural villages that recreate aspects of ancient civilizations that inhabited Jordan to immerse, engage and entertain visitors.
 - Improve the quality and presentation of local markets to serve as a greater draw for tourists.
- Revolutionize and promote Jordan's museums as distinguished experiences.
 - Employ new management models involving private sector partnerships in museum development and management.

- Promote and package a National ‘Museum Trail’
- Explore the use of Technology to enhance interpretation within Museums and enhance the range and scope of print media in local interpretation and dissemination.
- Develop festivals and events product.
 - Attract, develop and promote major and local festivals and events that capitalize on Jordan’s unique selling points such as a hiking festival, a food festival, a vintage car rally or a cultural festival link as the now defunct but, very successful Jerash Festival, will provide more reasons to visit and help Jordan capture new markets and market segments.
 - Place an emphasis on traditionally “off-season” months which will greatly help to mitigate seasonality and increase overall visitor numbers.

4.1.2. Core and buffer zones

The two Core zones of the site (Castrum and ecclesiastical northern complex, and Stylite tower and associated structures) are owned by the Department of Antiquities. Most parcels surrounding the core zones are owned by MoTA. Doa and MoTA agreed on imposing a large buffer zone to protect the site through land acquisition around the archaeological area and the area extending from the tower to the fort. However some private parcels are still within the boundaries of the buffer zone of the World Heritage site, although they are being acquired by MoTA. The current boundaries and buffer zone cover a surface of one square kilometer.



4.1.3. Areas outside the buffer zone

The areas outside of the buffer zone are governed by the **Building and organization regulations for urban and villages, year 2015 issued under article 67 of the Organization of cities and villages and buildings Law No. (79) of 1966.**

According to the Umm ar-Rasas Master Plan, the areas adjacent to the archaeological site boundaries and buffer zone belong to the following categories: Residential B, Residential C, Public and Commercial. Residential B and C allow a maximum of 4 floors (including ground) and a maximum height of 15 meters for buildings.

Category area	Front	Side	Back	Percentage of building	Floor N.	Elevation	Green Space
Category C	4m	3m	3m	51%	4	15m	15%
Commercial	-	4m	4m	70%	4	16m	-
Public	2m	2m	-	-	4	16m	-

4.2. Competent authorities

4.2.1. The Department of Antiquities and the Umm ar-Rasas Management Unit

The **DoA is responsible for** all activities related to the conservation, "administration, protection, maintenance, repair and preservation, beautification [...] and display [...]" of the site and of its surroundings (Antiquities Law 21/1988, art. 3).

Within the field of competences of the DoA, the administration and management of Umm ar-Rasas may be schematized as follows:

- Ordinary activities, including monitoring and maintenance of the site;
- Extraordinary activities, including extra-budgetary conservation and rehabilitation projects, administered by DoA's Central Office in Amman through its Madaba Directorate as per projects' field of action and requirements.

Ordinary activities include regular monitoring of the site and of its surroundings as well as periodic maintenance works. Ordinary activities are administered by Umm ar-Rasas Management Unit in coordination with DoA's regional Directorate in Madaba.

The management unit is composed by:

- The Head of Umm ar-Rasas unit (an archaeologist in charge of monitoring, conservation and maintenance works).
- Six guards , two responsible of the stylite Tower and four responsible for the whole site (St. Stephen complex, Castrum and other structures)
- Three Site controllers
- Three Tickets staff
- Three clerks/administrative staff
- Three Cleaners

The responsibilities of the Head of the Umm ar-Rasas unit are:

- Administrative: follow up the presence of the employees in the visitor center and in the site
- Fill the monitoring sheets with the technical staff four times yearly.
- Coordinate with the authorities any activity at or near the site (with the Municipality coordinate the cleaning of the entrance of the park and around of the site).
- Offer information to visitors.
- Submit plans and reports to Antiquities Madaba Directorate
- Coordinate awareness workshops with local schools and societies.

The responsibilities of the site controllers are:

- preserve the site and help visitors
- submit to the Unit's head any information concerning problems at the site
- conduct assessment and basic maintenance of the mosaics



Meeting between the team of site management plan and the local community

The cleaners responsibilities are to remove rubbish from the site, especially near St. Stephen and Bishop Sergius churches

The two guards at the Tower site work on 24 hours alternate shifts.

The four guards at the castrum site work with this schedule: 2 from 8am to 8pm, and 2 from 8pm to 8am.

The three ticket sellers will work on this job from January 2016. For the moment they help the site controllers.

Three administrative staff work in the offices located at the visitor center.

4.2.2. The Ministry of Tourism and Antiquities

The **Ministry of Tourism and Antiquities is responsible for** all that concerns tourism development issues and especially the identification, implementation, management and maintenance of tourism-related infrastructures and activities. This includes, among others, the maintenance and regular cleaning of the visitor centre, the development and maintenance of paths and shelters supporting access to the site and the site's marketing and promotion to the public. In order to guarantee that interventions are compatible with the protection and conservation of antiquities, in theory all MoTA's interventions need the DoA's approval prior to their implementation.

The workforce allocated within MoTA to superintend, design and implement tourism-related activities at Umm ar-Rasas includes:

- One staff Head of the Visitor Center Section in charge of tourism-related infrastructures maintenance and development of visitor center.
- One staff assistance of the Head of the visitor Center Section.
- One Cleaner
- Two Guards
- Two Gardeners

Tourism-related **activities** at Umm ar-Rasas may be divided between ordinary and extraordinary. Ordinary activities include the regular maintenance of tourism-related infrastructures, namely the visitor centre. Extraordinary activities are carried out on an ad-hoc basis and address the development of specific services and infrastructures.

4.3. Key stakeholders

Umm ar-Rasas stakeholders were identified in consultation with the MoTA and DoA, and based on the analysis of all national and international public and private institutions who can have an impact on the site or be impacted by it. These include:

- National institutional actors, including all Jordanian Authorities variously involved in the management and development of the site and its surrounding areas. These include:
 - Ministry of Tourism and Antiquities
 - Department of Antiquities
 - Jordan Tourism Board
 - Department of Lands and Survey (Ministry of Finance)
 - Ministry of Agriculture;
 - Ministry of Environment;
 - Ministry of Interior/Domestic Affairs;

- Umm ar-Rasas Qada' Directorate
 - Municipality of Umm ar-Rasas
 - Civil Defence
 - Tourism Police
 - Badiya police
- Ministry of Public Works and Housing
- Ministry of Water and Irrigation
- Ministry of Energy and Natural Resources
 - Natural Resources Authority
- National Electric Power Company
- Private sector and civil society in Jordan, namely the non- or semi-governmental organizations that are variously involved in activities related to the site. Globally, the stakeholders under this category include:
 - National Commission for UNESCO
 - MIMAR – The Madaba Institute for Mosaic Conservation
 - University of Jordan
 - Hashemite University, Queen Rania Institute for Heritage and Tourism
 - Jordan Museum
 - Handicrafts associations and producers in Umm ar-Rasas and Madaba
 - Jordan Society of Tourism and Travel Agents (JSTA)
 - Jordan Inbound Tour Operators Association (JITOA)
 - Jordan Tour Guides Association (JTGA)
 - Students and archaeologists
 - Umm ar-Rasas Schools
 - Umm ar-Rasas Women Association
 - Umm ar-Rasas Mef'a Association
 - Conservation Association of Umm ar-Rasas Antiquities
 - Umm ar-Rasas Youth Center
 - Umm ar-Rasas Community Development Center
- International actors, namely the international organizations and institutions variously involved in the conservation, management and presentation of the site at various stages, or conducting projects at other Byzantine and Umayyad sites:
 - UNESCO
 - ICOMOS
 - Studium Biblicum Franciscanum

Concerning the Institutional (Government) stakeholders, the interest is greater among Ministries and Institutions more directly involved in the protection and development of the site:

MoTA, DoA, Municipality and *qada'*. As for the other stakeholders, work is needed in order to raise their awareness about the national and international importance of the site and be sure that their strategies, programs and actions are aligned with the final aim of conserving the site values for the future generations.

The same can be said for the private sector and civil society: there is intellectual and scientific interest from Universities and local NGOs, but the tourism sector needs to be encouraged to invest in Umm ar-Rasas. As for the local community there is no particular bonds with the site itself, with the exception of few individuals and associations which have either an intellectual or economic interest in the site. It is however possible that the community will show more interest in protecting the site, especially if educational programs among schoolchildren will be successful in raising awareness on the importance of the site, if the raising numbers of tourists and better targeted tourism-related economic activities will increase opportunities for the community, and if the national program of providing part of the ticket revenues to the concerned municipalities will be successful in providing funds for needed services and improvements to the local infrastructures.

As far as the international stakeholders are concerned, UNESCO obviously remains the primary one given the World Heritage status of the site. The interest of the Studium Biblicum Franciscanum remains at the level of publication of the excavations, although for the moment there is no program for further research at the site.

4.4. Financial resources

Presently the operational budget for the site is approximately 25,000 JD from the Department of Antiquities and a similar sum from MoTA (for bills concerning cleaning contracts and electricity). The introduction of a ticket in January 2016 will provide supplementary revenue to the site. The ticket will cost 3 JD for foreigners. 1 JD will go the Municipality, and 1 to a Tourism Site Management Fund. 20% of the fund revenues will be provided to DoA for allocations according to needs and proposals. The Fund will be managed by a Committee which includes DoA.

4.5. Visitors' numbers, profile and impact

4.5.1. Tourists' flows

The tables below show visitor numbers at major tourist sites, including Umm ar-Rasas. Statistics for Umm ar-Rasas are available only since 2011. They show an increase in visitor numbers until a peak of approximately 15,000 in 2014.

Site	change 2013-2014	2014	change 2012-2013	2013	change 2011-2012	2012	2011
Dead Sea	159.2%	35,150	-17.8%	13,562	5.7%	16,500	15,611
Jarash	8.8%	248,750	0.1%	228,550	-5.6%	228,350	241,900
Karak	11.2%	34,250	-54.3%	30,791	-31.0%	67,306	97,550
Madaba (Map)	0.9%	208,959	-2.6%	207,021	-2.3%	212,550	217,518
Madaba Museum	2.6%	19,050	18.7%	18,575	17.7%	15,650	13,300
Madaba Center Visit	8.7%	101,141	0.9%	93,066	-16.9%	92,272	110,991
Maghtas	6.0%	91,555	-2.6%	86,339	-9.1%	88,662	97,530
Mount Nebo	-3.1%	167,904	-8.4%	173,210	-9.0%	189,188	207,821
Mukawir	12.1%	12,181	-17.3%	10,871	-5.3%	13,143	13,884
Petra	-2.0%	596,602	-4.3%	609,044	1.0%	636,146	629,864
Umm ar-Rasas	21.7%	15,945	21.1%	13,102	-11.1%	10,817	12,165

Source: Ministry of Tourism and Antiquities

A 52% decrease was observed in the first 6 months of 2015. Although this may be also due to the regional political situation, this decrease is higher than in other sites, where it is in the range of 35 to 40%. There must then be other reasons for this decline.

Month	2014			2015			Relative Change 14/15		
	Foreign	Jordanian	Total	Foreign	Jordanian	Total	Foreign	Jordanian	Total
January	607	20	627	446	65	511	-26.5%	225.0%	-18.5%
February	1,609	31	1,640	512	15	527	-68.2%	-51.6%	-67.9%
March	1,610	144	1,754	833	76	909	-48.3%	-47.2%	-48.2%
April	2,285	114	2,399	1,442	176	1,618	-36.9%	54.4%	-32.6%
May	1,670	166	1,836	564	112	676	-66.2%	-32.5%	-63.2%
June	969	209	1,178	232	13	245	-76.1%	-93.8%	-79.2%

Total	8,750	684	9,434	4,029	457	4,486	-54.0%	-33.2%	-52.4%
						Source : Ministry of Tourism & Antiquities			

4.5.2. Tourist and visitor profiles

Less than 10% of the visitors are Jordanians. Unfortunately no statistics exist on foreign nationalities, although numbers from other sites and empirical observations show that the majority of tourists come from Europe, mostly from France, Germany, Italy and Spain.

A short survey was conducted in October 2015 by the Umm ar-Rasas unit at the visitor center. The survey revealed that most visitors liked the visitor center facilities and would recommend the visit to others, but found that explanations and displays at the visitor center and on site were not sufficient to convey the importance and characteristics of the site.

4.5.3. Tourism impact and management

Trails were designed to keep tourists away from danger points and unexcavated or partially excavated areas. Unfortunately tourist behavior is not always appropriate. They have been observed climbing walls and walking on mosaics. Tourist guides are known to tamper with buried mosaics, removing sand and plastic or geotextile covers (such as in the Lions' church), to show them to tourists, and leaving them exposed or covering them back without proper care. What is worse, tourists have been observed collecting loose tesserae from mosaic floors or sherds from the site's surface. Lack of garbage bins along the trails is also an issue, as careless visitors leave garbage behind, especially plastic bottles and snack wraps.

CHAPTER 5 – SITE SIGNIFICANCE AND VALUES

5.1. Cultural significance

5.1.1. Historical value

The early historic importance of Umm ar-Rasas is provided by biblical texts which mention a locality called *Mefa'at*²². The presence of Iron Age sherds found under St. Stephen's church and of a reused Iron Age capital would then confirm the existence of a settlement during that period.

The establishment of a Roman army cavalry unit formed by local people (*equites promoti indigenae*, see Lewin 2001) is at the origin of the construction of the castrum. Eusebius in his *Onomasticon* (128,21) describes the site as a camp of the Roman army, also referring to its biblical antecedent. The *Notitia Dignitatum* (81, 19), a Late Roman administrative document containing information on thousands of places in the Roman Empire, describes the location as a camp under the command of the Dux Arabiae. The late Roman period occupation has not been studied yet, given the massive later occupation both inside and outside the castrum, which has obscured the earlier occupations of the site.

During the Byzantine period the site became one of the most important monastic centers in the entire region. This importance is witnessed by the 14 excavated churches and chapels present in the site²³, by their rich, high quality mosaic floors, and the presence of a stylite tower, the only such structure identified so far in the Levant, although the practice of ascetic monks to isolate themselves on top of a column is known from other locations. This ascetic practice was introduced by Saint Simeon (388-459 AD) who is said to have spent 35 years of his life on top of a column, which was later incorporated in a church that became a place of pilgrimage. Ruins of the church, monastery and pilgrim facilities are conserved at the site of Qalaat Semaan, near Aleppo (the site is part of the World Heritage site "Ancient villages of Northern Syria").

The Islamic conquest did not change the Christian and monastic character of the site, as churches continued to be built during the Umayyad and Abbasid periods, up to the end of the 8th century. A massive earthquake hit the town in 749 AD, probably causing substantial damage, but as this episode seems to mark the end or substantial reduction of settlement in other sites, this is not the case for Umm ar-Rasas, where inscriptions found on mosaics show that they continued to be executed up to the end of the 8th century. The historical importance

²² Gios 13,18; 21,37; 1Chron 6,64; Jer 48,211. See also Germer-Durand 1897; Piccirillo 1994: 37-43; Niccacci 1994.

²³ To these one must add a still non defined number of unexcavated churches and chapels

of Umm ar-Rasas is also provided by direct evidence, such as the names of three bishops from the Madaba diocese mentioned on mosaic inscriptions, providing evidence that the Madaba diocese was still active until the 9th century AD and reaching the Wadi al- Mujib area.

The site is also mentioned in Arab sources: al-Bakri, Ibn Hisaq and Ibn Hisham say that the village of Mayfa'ah is in the Balqa of Syria where Zayd Ibn 'Amr ibn Nufayl, one of the four ahnaf (people from Mecca who believed in one God before Mohammed received God's revelation) met a Christian monk who told him to go back to Mecca because a prophet was going to find the true religion (see also Griffith 1994:51). According to these sources, however, Zayd was killed in the land of the Lakhm when he was making his return to Mecca. (Ibn Hisham, see Griffith 1994:52).

5.1.2. Religious value

The large number of churches found at Umm ar-Rasas provides a clue about the important role provided by this community in spreading the Christian faith in the region between the 4th and 5th centuries. This is also confirmed by the so far only evidence of a stylite tower found in the Levant. Stylitism is an ascetic practice found only in the Middle East, as it was introduced by Saint Simeon who lived on the top of a pillar for 35 years during the first half of the 5th century in the Aleppo region.

The site is also important for providing evidence of the evolution of Christian cultic practices from the 6th to the late 8th century, given the archaeological evidence provided by the architectural evolution of the churches and their liturgical installations (Michel 1994), as well as by the highly symbolic mosaic representations, which at least in the case of the Church of Bishop Sergius seems to carry through the images of the mosaic floor a catechism lesson (Gautier 2000). Moreover the St. Stephen complex must have been, according to the archaeologists that excavated and studied it, a place of pilgrimage, given the size of the place, the passages open from church to church of the complex, and the transformation of a courtyard into a church, probably to allow more pilgrims to take part in ceremonies probably dedicated to the cult of a saint whose remains were perhaps conserved in one of the churches (Piccirillo 1994).

The traces of iconoclasm²⁴ found on the mosaics of Umm ar-Rasas have been interpreted by scholars as an indication of a debate, at times violent, between Christians on the opportunity to display images of living beings inside a church.

²⁴ Piccirillo prefers to speak of *iconophobia*, since he does not believe that there was a systematic program of defacement following an order from the higher church hierarchies. See Piccirillo 1994 and Ognibene 2002.

The evidence of a strong Christian community in Umm ar-Rasas until the 9th century confirms the tolerance towards other religions during the Islamic periods in the region.

5.1.3. Archaeological value

Only a small portion of the site has been excavated, and excavations have mostly concentrated on religious buildings. For this reason the site holds a tremendous archaeological potential, especially as it concerns the study of domestic and military architecture. The castrum, for example, is one of the best preserved military structures of this type found in the region, and its study will certainly provide further information on the structure of the Limes Arabicus, especially if this study will include the smaller forts and outposts which are still preserved in the area.

As far as the Byzantine period is concerned, there is still little information on the structure of the settlement, whether it was only a monastic complex or it actually included also other inhabitants.

The late Ottoman traditional village that was established among the ruins of the site between the 18th and early 20th centuries has never been investigated. Given the fact that the site was abandoned and a modern settlement was established at the margins of the archaeological area, this late occupation also holds significant archaeological potential and value.

Besides this potential, the archaeological value of the site resides also in the material that has been recovered and not studied yet: skeletal material, artifacts, inscriptions, excavation reports. There is an opportunity for scholarly research both in the publication of this material, and in its further study and interpretation. Skeletal material for example may yield information on diet and diseases, pottery may give us clues on areas of production and local exchange, while the study of agricultural fields and water harvesting systems may not only provide information on the way this population was able to prosper in a hostile environment, but also suggest adopting some of these solutions to modern day needs.

More archaeological value is provided by the representations of cities in the mosaics of Umm ar-Rasas (mainly in St. Stephen church): these representation seem to mix generic representations of buildings with realistic reproductions of important buildings in each city (Duval 1994), thus providing further information on the characteristics of buildings that are now lost or in ruins.

5.1.4. Artistic and aesthetic values

The quality and characteristics of the mosaics of Umm ar-Rasas make them stand out among the many found in Jordan. Although many suffered iconoclastic (or iconophobic) damage, others show their original composition. The mosaics in the presbytery of St. Stephen church are signed by Staurachios of Hesban and Euremios of Madaba, an indication of the fact that some of the best mosaic artists of the time worked there.

The variety of motifs, from geometric to highly figurative and the quality of execution give to the Umm ar-Rasas mosaic a very high artistic and aesthetic value.

Besides the mosaics, there are other artistic representations that were only found in Umm ar-Rasas, such as a sculpted capital representing a lamb, and other objects such as glass vessels, wood and bronze objects showing high technical and artistic skills. Mural paintings, although rare, have been found as well. Sculpted stone lintels add to the artistic production found at the site.

5.1.5. Architectural value

The stylite tower is a unique monument. There is consensus on the fact that it served the function of allowing a monk to isolate himself from the world, following a practice known as stylitism, after Saint Simeon introduced it during the early 5th century. The building withstood time and earthquakes, an indication of a solid construction. The fact that it is still not completely understood (there is for example one channel running from the room on the top to the bottom of the tower, and different hypotheses have been presented to explain its use) only adds to the architectural importance of the building.

The tower is not the only architecturally important building on site: the size of the churches, among the largest in Jordan, the solidity of the castrum, and the complexity of some subterranean structures, such as the so-called winery, may justify the name of the site, which has been said it derives from the root raṣṣ indicating the action of putting something on top of something else in perfect alignment, such as a well-built wall.

The architectural value of the site also resides in the representations of buildings and monuments in several mosaics found at the site (especially St. Stephen, but also in the churches of Bishop Sergius and in the Lions' church), which provide detail on building types and on monuments that existed at the time the mosaics were made.

Moreover the evolution of interior architectural elements in churches (Michel 1994) is an indication of the evolution of cult practices, providing a link between architectural, historical, and religious values.

Although few domestic or public structures have been investigated, it is also worth to mention the Palace that was partly excavated in the early 2000's, being this a very large building whose function is still unclear.

5.1.6. Natural and landscape values

The ancient terraced fields surrounding the site are both of archaeological and natural value. Archaeological, because they are a witness to the use of the land in ancient times and of the mastering of scarce water resources. Natural, because they contribute even today to slow down erosion and to contribute to the rural character of the area. This element contributes to the definition of the Umm ar-Rasas region as a cultural landscape, which clearly shows a long interaction between man and nature.

There are many herbs that grow in the area which are used in traditional medicine by the local Bedouins (see below), and rare animals including the daba', a local hyena.

Umm ar-Rasas is located at the edge of the badiya (steppe) close to the deep Wadi al- Mujib canyon. Wadi el-Mujib is a site of great geological and natural importance and a natural reserve containing a variety of flora and fauna. Considered as "The Grand Canyon of Jordan", Wadi el-Mujib is the deepest found in the country, and one of the few permanent rivers which flow from the Jordanian plateau to the Dead Sea or the Jordan Valley. At a short distance from the site are the springs of Wadi el-Mujib, a site of great natural beauty which include deep pools and waterfalls.

5.1.7. Scientific value

The inscriptions found on mosaics and stone provide information about names of places in ancient Palestine, Transjordan and the Nile delta (toponomastic and historical geography) and names of people (anthroponomastic). More than 50 personal names are mentioned, most of them Arabic names.

The mosaic representations also feed other disciplines: zoology and botany, for example, given the highly detailed representations of animals and plants; as well as architecture.

5.1.8. Social values

Modern Umm ar-Rasas is a Bedouin community (Al- Hqaish from Bani Sakher tribe) which largely maintains its traditional ways of life. These traditions include herbal medicine, and two local villagers master this skill so well that they receive patients from all over Jordan.

The abandoned late Ottoman houses inside the site are witness to a semi-nomadic way of life which has given place in the past few decades to a more permanent lifestyle. The social aspect of that mode of life and its evolution to today's standards should be recorded before its memory fades away.

5.2. Other site values and assets

5.2.1. Tourism and economic development

The World Heritage inscription and the tourist development at the site, which are included a large investment from the Government, are providing opportunities for economic development: a local cooperative society has a contract with the MoTA to operate a café and a souvenir shop in the visitor center, and other initiatives such as handicraft production are already established. The development of infrastructures together with the construction of the visitor center and land acquisitions in order to establish a protected zone around the site have also raised the value of land in the area. It is clear that economic growth and infrastructure improvements (new paved roads for example) are the result of investments in the site. There is huge potential for further growth, considering the present low number of tourists visiting the site, which may in turn create better economic opportunities for the local community. The introduction from January 2016 of the Unified entry ticket (Jordan passport), will give the Municipality of Umm ar-Rasas one dinar per each ticket sold. This will provide the site with extra income to provide services and improve infrastructures in the village.

5.2.2. Education

Because of the many complex “layers” of information which are present at the site, there are tremendous opportunities to establish educational and awareness programs in schools and for the local community, involving local volunteers and NGOs. Educational themes such as the Roman Empire and the defense of their eastern border, the Byzantines and the information we can derive from the mosaic representations and inscriptions, the Islamic conquest and the tolerance of Umayyads and Abbasids towards other religions, ancient technology, water harvesting, and ancient agricultural practices, can give children and adults alike the information they need to better understand the site and appreciate the need for its conservation.

Universities and research institutions in Jordan and internationally should also be interested in expanding their knowledge about the site and transmitting it to their students.

5.2.3. Outstanding Universal Value

The Retrospective Statement of OUV is not very detailed and generically mentions the settlement of the Byzantine/Umayyad period inside the castrum, its northern *extra- muros* extension, and the stylite tower complex. As already mentioned, the site was inscribed on criteria (i), (iv) and (vi) on the basis of the human creative genius represented by the St. Stephen complex mosaics, the outstanding example of a type of building represented by the stylite tower, and the association of the site with monasticism and the spread of monotheism in the region (see Chapter 1).

CHAPTER 6 – SUMMARY OF CONDITIONS, RISKS AND KEY ISSUES

The assessment of conservation, management and interpretation of Umm ar-Rasas has shown that there are several issues occurring at the site needing intervention in order to protect its OUV. These issues can be grouped together according to themes in order to facilitate their discussion. These are:

1. Legal and institutional framework;
2. Conservation and documentation;
3. Maintenance and monitoring;
4. Interpretation and presentation;
5. Research and excavations;
6. Tourism, facilities, services and infrastructures;
7. Public awareness and education;
8. Community participation and economic development opportunities
9. Investments, marketing and funding.

Each aspect is presented below with clarification of key evidences and root problems. These elements provide the baseline reference for the identification and development of site management policies and actions.

6.1. Legal and institutional framework

The buffer zone boundaries of the World Heritage site include some private properties. Most are in the process of acquisition by MoTA. The normative framework provided by Antiquities Law 21/1988 gives power to DoA and MoTA to enforce heritage protection regulations. However, the common approach by DoA²⁵ is to purchase land rather than impose use regulations. An additional problem is the rapid growth of land prices, which imposes a heavy toll on MoTA's finances.

Clear definition of the World Heritage core and buffer zone boundaries and land property, are a first priority at Umm ar-Rasas to ensure the enforcement of existing protection laws.

There is coordination between DoA and MoTA on actions concerning the site, however a formal flow of communication is required between these authorities.

²⁵ Following article 5 paragraphs d) and e) of Antiquities law 21/1988 and its amendments, as well as of law 12/1987 and its amendments (Law for the Purchasing of Land for Public Use)

A final important management issue within the DoA concerns the way the site is supervised and monitored on a daily basis. The process to get permissions to carry out regular maintenance activities requires excessive bureaucratic procedures, and there are scarce resources available.

6.2. Conservation and documentation

St. Stephen complex and the stylite tower are presently attracting most attention at the expense of many other locations. There is also a lack of specific technical studies on mortar composition, construction techniques, stone provenance, geological and petrographic studies, quarries, water harvesting and management, thus limiting the capacity of the conservators to provide appropriate preventive and remedial interventions.

Proper documentation of previous interventions is also lacking: there are no final excavation reports or reports on conservation interventions conducted by teams other than those of the Department of Antiquities, no object inventories available to DoA, while most preliminary reports are in Italian only. This lack of information limits the possibility to plan interventions based on priorities.

The production of clear documentation guidelines and the easy access to published and unpublished reports is required, for instance through the setup of a site documentation centre and a formal process of archiving available documentation.

The conservation of Umm ar-Rasas is hampered by natural decay and the action of agents such as wind, sandstorms, rainfall, humidity and moisture, vegetation growth, high temperatures, day/night temperature variations, bird droppings (under St. Stephen's shelter). Human factor impacts include open excavations, use of inappropriate conservation material, some illegal activities, urban development and encroachment and visual pollution. The quantitative and qualitative monitoring and analysis of these agents' impact on the site may help in determining specific strategies of intervention.

6.3. Maintenance and monitoring

Although monitoring is conducted at the site, this is not done with a precise schedule. The adoption of a systematic approach to site monitoring and maintenance, on a regular basis, and according to precise protocols, would allow ensuring that any decay is detected from its very beginning and before it seriously damages the structures.

Today the maintenance of the archaeological remains is focused on St. Stephen's complex and shelter, and the stylite tower, thus limiting the possibility to intervene on other structures, given the small number of technicians dedicated to maintenance activities.

6.4. Interpretation and presentation

Currently there is no interpretation, presentation, and signage on site, limiting the capacity of the visitor to understand the history and importance of the site, but what is especially missing is the entire interpretation vision based on the full understanding of the site values. Unfortunately the fact that most publications about the site are only preliminary reports limits the possibility to provide "stories" to the public. For the same reason the tour guides not always provide correct information.

No other informative material is available on site such as brochures, booklets and maps. Site interpretation and presentation needs to be tackled in line with an improved understanding of tourism trends and tourist profiles, in order to fully express the site potential and values.

According to Antiquities Law 21/1988, site presentation is a responsibility of DoA. By practice, however, tourism development activities in Umm ar-Rasas are a task of the MoTA, which is in charge of the maintenance and development of the visitor centre. It has been mentioned that there is no formal communication mechanism between these two bodies. This creates a grey area of overlapping competences and possible miscommunication which is not conducive to the effective presentation of the site's values and which needs clarification in order to enhance the visitors' experience.

6.5. Research and excavations

The archaeological value of Umm ar-Rasas is an enormous resource due to the scientific elements it brings to the understanding of late Byzantine cultural environment and its survival during the early Islamic period, and for its potential contribution to tourism development in the region and in the country. The investigation and presentation of other archaeological features besides the churches and mosaics excavated so far would provide precious information on the actual structure and variety of the settlement. There is also an opportunity to investigate and present other sites in the region, related to the network of forts and outposts related to the Limes Arabicus, the Roman frontier, many of which are in a relatively good state of conservation, and located in pristine desert landscape setting. Their accessibility for tourism purposes would allow stretching the duration of stay at Umm ar-Rasas, with increased opportunity for business-related activities on site. Still, most of research and excavations

activities to date have focused only on the St. Stephen complex and its exceptional mosaics, leaving other excavated structures to decay (such as the winery and the so-called Palace).

The lack of a comprehensive, strategized research plan is evident: after 30 years of excavations researchers still do not have a clear understanding of the site's organization and function. Another important remark that emerges so far is that, as it appears, none of the archaeological campaigns included a phase of consolidation/restoration and presentation of the excavated structures.

Documentation of archaeological excavations and their hand-over to DoA, together with collected artifacts, is another important issue. Existing excavation reports do not provide all key information, such as stratigraphic units sequence and detailed reports, section/plan drawings and photographs, artifacts inventory, excavation/layers levels, etc. The lack of these fundamental pieces of information is a serious issue, because it confines the interpretation of excavation data to the excavators only, and impedes future researchers from their critical revision and re-interpretation –which in other sites has often allowed unexpected discoveries. The hand-over of recovered artifacts upon completion of excavations represents an additional, serious issue. Indeed, it appears a common practice that the DoA leaves these items with the excavation teams in order to ensure that they be documented and analyzed as per highest investigation standards. Unfortunately, this often leads to their oblivion and consequent loss. Concrete provisions are needed to ensure that their movement be monitored and that they return to DoA upon completion of the investigations.

6.6. Tourism, facilities, services and infrastructures

Visitors' behaviors can be a concrete risk for the site, particularly vandalism. The scarce awareness on Umm ar-Rasas's values and importance may be part of the root problem, together with the ignorance on appropriate, respectful behaviors and on existing sanctions against heritage damage. Imposing restrictive measures and enhancing guarding services thus appear as a fundamental action to mitigate the impact of visitors' presence on the site.

The underlying problem seems connected to the lack of a comprehensive, strategic plan for tourism development at the site, based on a thorough understanding of the site's values.

The design of a comprehensive, value-based tourism development strategy, firmly relying on an accurate analysis of tourists at Umm ar-Rasas appears as a fundamental precondition for the enhancement of the site and its better appreciation. The formulation of the strategy will have to take into consideration also issues such as the addition of facilities to allow the access to the

site to people with disabilities, and the design of presentation / interpretation facilities in the visitor center.

In general Jordan tourism sites need better promotion which should come from the combined efforts of MoTA, JTB and the tour operators.

6.7. Public awareness and education

The educational value is one of Umm ar-Rasas opportunities. At present, however, few activities capitalize on this aspect of the site, thus missing an important opportunity to inform new generations on their heritage, origins and identity. This is particularly true for the local communities, especially the youth.

Scarce awareness on heritage importance and values can also be the basis of the disrespectful, inappropriate behavior of some visitors (as evidenced for example by the uncovering of reburied mosaics). Education and awareness-raising are a key component of sustainable conservation and management of the site and need being tackled through ad-hoc projects and interventions, particularly at the local level.

6.8. Community participation and economic development opportunities

Community participation is still low at Umm ar-Rasas, for several reasons. One is certainly the fact that visitation numbers have remained low since the site was inscribed in the World Heritage list more than 10 years ago, and that promised economic opportunities have not materialized. There is then an urgent need to launch a new programme of local economic development based on realistic expectations, with the understanding that until visitation numbers will remain low there will be little hope for a consistent growth and for community engagement in sustainable heritage preservation and management. Having said so, the full involvement and participation of the local community is highly desirable as the site's conservation depends on their support.

6.9. Investments and funding

At the national level the funds available for Umm ar-Rasas are limited and mainly cover basic maintenance and daily running costs. They are drawn from the global budget of the DoA and amount to approximately 25,000 Jordanian Dinars per year. Similar resources are also made available by the MoTA for visitor center-related purposes. These resources do not prove adequate to the size and importance of Umm ar-Rasas, a World Heritage Site.

Appropriate site development and management would indeed require, among others, the continuous research of opportunities for site enhancement and tourist fidelity promotion through continuous site investigations, exhibitions setting and communication/marketing campaigns, also targeting national visitors and aiming at reducing the yearly decline of site visits. This could be done, among others, by favoring the creation of a network of tourism infrastructures in the area, which would allow networking among the multiple cultural and natural resources available. Budget allocation and fundraising reinforcement thus appear as a fundamental need for the most appropriate conservation and presentation of Umm ar-Rasas, if the site is to fulfill international commitments and expectations as a World Heritage Site and as a regional and national emblem of Late Byzantine and early Islamic culture and arts.

As it concerns private investments, these are still limited, but there is increasing interest at local and national levels towards an increase of tourism in the *badiya* region. This interest should be encouraged on one side, but also managed and directed in order to avoid inappropriate activities being implemented, which could harm the site, its values, and ultimately also the possibility to have long term economic benefits from its presence in a still relatively unspoilt region of the country. The combination of natural and cultural features in the *badiya* is an asset to conserve and its sustainable management and exploitation for eco-tourism and conservation initiatives should be implemented as soon as possible in order to encourage local community participation and bring the government to adopt long term conservation measures in the region.

TABLE – THREATS AND RISKS IN UMM AR-RASAS

THEME	PROBLEM	LEVEL OF THREAT/RISK		
		Low	Med	High
Legal and institutional framework	There are private lots in the process of acquisition within the fence and within the limits approved by UNESCO as buffer zone		X	
	Issue of Urban Aesthetics (code 20 of National Building Law No. 7/93) as it concerns buildings close to the buffer zone / fence of the site, requiring close coordination with Municipality.		X	
	Authorization for maintenance activities requires excessive bureaucratic procedures. There is also a lack of basic resources to carry out the activities.			X
Conservation and documentation	The focus on the conservation and documentation of St. Stephen complex and stylite tower limits the interventions on other site features, with the risk of not paying sufficient attention to other important values		X	
	Studies and analyses are lacking about many technical aspects such as ancient mortar compositions, construction techniques, geological and petrographic studies, quarries, stone provenance, etc., limiting the capacity of providing high quality conservation and interpretation at the site			X
	Lack of archive from previous archaeological and conservation projects, lack of inventory of finds, lack of publications, and mostly only preliminary reports which are not in English or Arabic.			X
	Natural agents of deterioration include: rainfall (especially violent storms), wind and sandstorms, vegetation growth, humidity accumulation and moisture, high temperature/day/night temperature variations, material decay, animal activities, bird droppings (under St. Stephen shelter) and earthquakes.			X
	Human factors of decay include: open excavations, use of inappropriate conservation material, some illegal activities, urban development and encroachment, visual pollution, garbage and pollution.			X
	Lack of guidelines/conservation protocols indicating the principles, practices and minimum professional expertise required			X
	Scarce and hardly accessible documentation on conservation campaigns (non-DoA) limits the possibility to plan new interventions based on previous achievements and challenges		X	
Maintenance and monitoring	Maintenance of the archaeological remains is principally focused on St. Stephen complex mosaics and shelter and the stylite tower. This limits activities on other type of structures thus not allowing preventive maintenance and risk reduction			X
	Monitoring activities require a better defined schedule		X	

Interpretation and Presentation	The absence of interpretation, presentation, and signage on site limits the capacity of the visitor to understand the history and importance of the site			X
	The limited number of scientific studies and publications limit the capacity to provide updated interpretation “stories” to the public		X	
	The tour guides do not always provide correct information, also due to the limited number of publications and interpretation on the subject of discoveries and the history of the site		X	
	Trails need to be better designed to follow original paths and alleys		X	
Research and excavations	Research and excavation has focused on the most appealing and best known elements of the site (churches and mosaics), leaving in the shadow and almost unexplored the other structures, thus limiting a thorough understanding and presentation of the site as a whole		X	
	Past archaeological excavations included only a limited conservation and presentation component, limiting the possibility to present these features to the larger public and leading to the progressive deterioration of the excavated areas and structures			X
	Scarce and hardly accessible documentation on previous excavations limits the possibility to reinterpret this information and to integrate old data with new acquisitions and discoveries			X
	Absence of a finds inventory does not allow the selection of objects for display or further study.			X
Tourism, services and infrastructures	Inappropriate and disrespectful behaviors and the lack of awareness on heritage preservation and values have an adverse impact on the conservation of the site, but no communication tool exists on site to inform on most suitable conducts nor on penalties against the damage of cultural heritage (particularly damage to mosaics and decorated stones)		X	
	The quality and impact of the visit is much undervalued due to the limited use of the exhibition space and to the lack of interpretation material			X
	The site is not accessible to people with disabilities due to the lack of proper disabled-friendly accesses and infrastructures	X		
	There is no clear trail connection between the two core zones.		X	
	There is no operational plan for the visitor center, creating problems of maintenance and appropriate use		X	
	Payment of services at the visitor center is a grey area as MoTA pays water and electricity for other services such as the police post, the cafeteria, the gift shop and the post office			
Public awareness,	Not enough knowledge among local community on the history and importance of the site		X	

education				
	Scarce knowledge of heritage value and of appropriate behaviors in heritage sites create serious conservation problems (such as removal of cistern covers, uncovering of backfilled mosaics, etc.)			X
Community participation and economic development opportunities	Handicraft products are not specific to the site and current product quality is low.		X	
	No real economic development opportunities until tourism numbers remain low		X	
Investments and funding	Need for a strategic development project for the site			X
	No local private investment in tourism development projects		X	

SECTION III – SITE MANAGEMENT PLANNING

CHAPTER 7 – VISION, AIMS, POLICIES AND ACTIONS

This chapter presents the long-term vision for the conservation and management of Umm ar-Rasas, together with recommended aims and actions to implement it. The vision addresses the site as a whole complex of values while aims and actions are presented as a response to the issues that have emerged from the assessments made throughout the planning process and presented in chapter 6. They will therefore target:

1. The legal and institutional framework (Aims and actions: LEG.1-6)²⁶
2. The appropriate use of the site (Aims and actions: USE.1-2)
3. Conservation and documentation (Aims and actions: CON.1-6);
4. Research and excavations (Aims and actions: REX.1-5);
5. Maintenance and monitoring (Aims and actions: MNT.1-3);
6. Interpretation and presentation (Aims and actions: INT.1-3);
7. Tourism, facilities, services and infrastructures (Aims and actions: TFS.1-10);
8. Public awareness and education (Aims and actions: EDU.1-3);
9. Community participation and economic development opportunities (Aims and actions: COP.1-2)
10. Investments, marketing, and funding (Aims and actions FND.1-2).

On top of these aspects, the aims and policies will ensure that all activities, from conservation to tourist development, remain compatible with the core values, authenticity and integrity of Umm ar-Rasas World Heritage Site (WHS).

7.1. Vision

Umm ar-Rasas is a site of Outstanding Universal Value due to its cultural significance as a place where artistic and architectural elements testify the development and consolidation of a religious tradition within a changing social, political, and religious environment. The permanence of Christian religious practices for more than three centuries after the Islamic conquest of the region is a witness to the tolerance of the new rulers towards other religions.

²⁶ In order to facilitate internal and external reference, the proposed nine aims are indicated by short abbreviations, as follows: i) LEG (Legal and institutional framework); ii) USE (Appropriate use); iii) CON (Conservation and documentation); iv) REX (Research and excavation); v) MNT (Maintenance and monitoring); vi) INT (Interpretation and presentation); vii) TFS (Tourism, facilities, services and infrastructures); viii) EDU (Public awareness, and education); ix) COP (Community participation); x) FND (Investments, marketing and funding). Policies and Actions are indicated by a code composed of the above abbreviation followed by a number, e.g. LEG.1 will indicate Policy 1 under LEG (Legal and institutional framework), and LEG.1.1 indicates action 1 under policy 1 of the Legal and Institutional framework.

The World Heritage significance of the site will be presented to the visitor through appropriate displays and information, and the site will be prepared and presented to the public ensuring their safety. More research will be conducted in order to better understand phases of occupation and type of buildings not sufficiently studied in the past. The conservation of significant elements of the site will be conducted to international standards and their constant monitoring and maintenance will ensure their preservation.

Educational and capacity building activities will raise local and national awareness about this site and in general about cultural heritage. The local community will participate in the presentation of the site and its landscape, benefiting from new economic opportunities brought by infrastructure improvement and tourism development in the region.

7.2. Aims, policies and actions

7.2.1. Legal and institutional framework (LEG)

Aims

The legal and institutional framework will be conducive to the conservation and presentation of the site's values, authenticity and integrity and will ensure the enforcement of protection by-laws, the strategic and coordinated management of the site and its field-based monitoring and supervision.

Policies and Actions

LEG.1: This SMP will be approved by the Director General of Antiquities and it will be forwarded to the Minister of Tourism and Antiquities for its endorsement. Once approved, this SMP will have a binding value for all actions to be undertaken on site. This SMP will be periodically reviewed to adapt to new emerging needs. A first review of this SMP will be implemented after one year from its entry into force.

LEG.1.1: Ensure adoption of the SMP through its approval by the Director General of Antiquities and its endorsement by the Ministry of Tourism and Antiquities.

LEG.1.2: Ensure periodic revision of the SMP. A first evaluation of the effectiveness of the SMP will be undertaken after one year from its entry into force, and necessary steps will be undertaken towards its adaptation as per emerging needs.

LEG.2: The management of Umm ar-Rasas will be articulated in three levels:

- a. **Strategic**, that will identify the strategy and actions to be undertaken in Umm ar-Rasas over the medium and short term, through a Site Annual Plan (SAP). The SAP will provide an annual action framework, including budget for its implementation and will be developed in full accordance with the vision and policies of this SMP and with Antiquities Law 21/1988, and it will have a legally binding value. It will be prepared on a regular basis by a Joint Committee of technical experts including the heads of: the DoA Site Management Directorate (SMD) (which will also act as Secretariat of the Committee), the World Heritage Sites Section of SMD (WHSS), the Tourism Site Management Directorate

at the Ministry of Tourism and Antiquities (TSMD), the Madaba DoA directorate, the Umm ar-Rasas Site Management Unit (SMU). The SAP will be approved by the Director General of Antiquities and it will be endorsed by the Minister of Tourism and Antiquities.

- b. **Coordination**, executed by the DoA through the SMD and its World Heritage Sites Section (WHSS). The SMD will report to the Director General of Antiquities and will coordinate and supervise the correct execution of the above-mentioned actions as expressed by the SAP, in full accordance with relevant policies and guidelines. The SMD will be in charge to ensure that the Joint Committee regularly meets (twice a year) and works as needed for the timely submission of the SAP to the Director General's approval. Quarterly reports on the SAP implementation will be prepared by the SMU, transmitted to the SMD who will be in charge to forward them to the DG of the DoA for approval. The DG will send them to the Minister of Tourism and Antiquities for endorsement. The SMD will also ensure the largest communication and coordination with relevant national and international stakeholders through the organization of periodic meetings and through the set-up of ad-hoc information sharing mechanisms and tools.
- c. **Implementation**, carried out by the Site Management Unit (SMU). The SMU will ensure the proper execution of the actions assigned by the SMD, under supervision of the Madaba Directorate and will report back to the SMD through the Madaba directorate.

LEG.2.1: Set up a Site Management Unit (SMU) for the concrete implementation of the SAP and monitoring of field-based operations and actions. The SMU will be composed of a field-based Head appointed by DoA, and of staff as required by the site's needs. The SMU will be coordinated by the Head, while a Visitor Center Site Manager (VCSM) depending from the SMD will coordinate all issues pertaining to the monitoring and maintenance of the visitor center, site paths and furniture, and shelters. The SMU Head will report to the SMD copying the Director of the Madaba Directorate.

LEG.2.2: Establish the Joint Committee of technical experts through the SMD and WHSS. The Committee will be composed of MoTA and DoA's staff, as detailed below:

- From the DoA, it will include: the Head of the SMU, the Director of the Madaba Directorate, the Director of the SMD, the Head of the WHSS, the Director of the Conservation Directorate, the Director of the Excavations and Surveys Directorate.
- From the MoTA, it will include: the Director of the Tourism Site Management Directorate (TSMD) and the Director of the Projects Development Directorate (PDD).

The SMD and the WHSS will act as the Secretariat to the Joint Committee of technical experts, and will coordinate on the draft of the site's SAP.

LEG.2.3: The DoA SMD will convene the Committee every six months to prepare the SAP and to monitor the implementation of the plan. Every five years the Committee will revise the SMP as per evolving site needs. The SMD will act as the Secretariat to the

Committee, and it will ensure that MoTA and DoA actively collaborate in the preparation and delivery of the SAP.

LEG.2.4: Develop procedure manual clarifying the administration of communication procedures and job descriptions of the SMU.

LEG.3: The boundaries of the buffer zone will be periodically reviewed in order to guarantee the protection of the site's values, integrity and authenticity. If necessary minor boundary modifications will be proposed to the World Heritage Committee

LEG.3.1: Verify and follow-up on boundaries' registration by the Department of Lands and Survey. Ensure that land is assigned to the Department of Antiquities (DoA) as per Antiquities Law 21/1988.

LEG.3.2: Continue the purchase of land parcels in the buffer zone, especially those parcels adjacent to the WHS boundary, in line with purchase plans as defined by the MoTA and the DoA.

LEG.3.3: Modify fence to include the areas (North, south and east) of the WHS boundaries (zone of the stylite tower), currently outside of the fence, in order to protect them from infringements

LEG.3.4: Provide minor buffer zone adjustments in the two locations west of the property boundaries (stylite tower area) where there is no buffer zone. Ensure that at least 25m or more are left in this point between the boundaries of the WH property and the boundary of the buffer zone. Expand buffer zone to east and north of the Northern Core zone (stylite tower area) to include newly acquired plots of land.

LEG.3.5: Inform the World Heritage Center about buffer zone modification according to newly acquired land plots in the eastern and northern side of the northern core zone.

LEG.3.6: Periodically monitor and review boundaries and buffer zones limits and regulations (yearly at least), in order to avoid infringements and adjust as required by changing circumstances.

LEG.3.7: Ensure enforcement of penalties for the infringement of boundaries and buffer zones, as per Antiquities Law 21/1988 and its amendments, and widely disseminate their awareness among national and international stakeholders.

LEG.4: The protected area will be subject to enhanced enforcement of Antiquities Law 21/1988 and its amendments and penalties will be applied upon its infringement, particularly on the occasion of the development works implemented by any national or international body without previous written authorization by the DoA. In this regard, the DoA will ensure broad dissemination of the site's boundaries, the existing protection by-laws and related infringement penalties among relevant national and international stakeholders.

LEG.4.1: Land parcels which are MoTA's property and where archaeological remains are found should be transferred to DoA in order to rationalize the legal status of the site and ensure their protection under the Antiquities Law

LEG.4.2: Promote and foster awareness on Antiquities Law 21/1988 and particularly the legal implications on the destruction of antiquities among all concerned stakeholders.

LEG.4.3: Promote and enforce among all stakeholders the authority of the DoA with regards to all activities directly or indirectly concerning the site, as per provisions set forth in Antiquities Law 21/1988.

LEG.5: Coordination with the Municipality and the Governorate will ensure that no infringements or undesirable buildings or infrastructures will impact the context of the site.

LEG.5.1: Ensure that Municipality and Governorate, as well as relevant Ministries, share with DoA and MoTA any new infrastructure plan. Existing legislation is sufficient to protect the landscape value of the site (not only Antiquities Law 21/1988 and its amendments but also the National Building Law 7/1993 and its code 20 on Urban Aesthetics, among others), but proper coordination is required in order to apply the laws and avoid infringements.

7.2.2. Appropriate use (USE)

Aims

Umm ar-Rasas is an exceptional World Heritage Site where the large number of churches and extended occupation into the Umayyad and Abbasid periods testifies to the tolerance of the new rulers towards other religions. It is a place where, for parts of its history, people conducted a life adhering to the principles of monasticism and asceticism. An appropriate use of the site will ensure that it remains authentic to its original configuration and setting, including its landscape values, and that no intervention affects the integrity of its remains.

Policies and Actions

USE.1: Any site use issues will be discussed and agreed upon by the key competent authorities, namely the Department of Antiquities (DoA) and the Ministry of Tourism and Antiquities (MoTA). Its most appropriate implementation will be validated by the DoA's Sites Management Directorate (SMD) and will be supervised by the SMU.

USE.2: Guidelines will be developed by the SMD, in close consultation with the SMU and other concerned stakeholders, to ensure the sustainable use of the site by private and public institutions.

USE.2.1: Develop guidelines for the sustainable use of the site, including clear and strong use limitations to protect the Outstanding Universal Value (OUV) of the site. The guidelines will also incorporate provisions concerning requests from public and private institutions and individuals for the use of the site for public or private events.

7.2.3. Conservation and documentation (CON)

Aims

Umm ar-Rasas will be conserved in its setting, form and material, respecting its authenticity and integrity, in order to maintain the Outstanding Universal Value (OUV) of the entire site. Site

conservation will particularly endeavor counteracting man-made and natural threats and will ensure the long-term sustainability and minimum impact of interventions, as per highest international standards. Accurate and accessible documentation on interventions will ensure transparency of conservation actions and their continuous revision in the light of new technical discoveries and acquisitions.

Policies and Actions

CON.1: Site conservation will seek the holistic preservation of cultural and natural values through a balanced distribution of interventions on the diverse features of the site, including late phases of occupation, and type of buildings not sufficiently represented among those excavated. A conservation strategy will be defined by the DoA in consultation with concerned national and international stakeholders. The strategy will be turned into concrete actions on a yearly basis based on their importance, urgency and on existing opportunities. These actions will be incorporated as part of the SAP and will define conservation needs, priorities and estimated budget needs.

CON.1.1: Develop specific objectives concerning the conservation of each site in the archaeological area, identify actions to be implemented on the short term and include them in the SAP with accurate budget estimates. In consideration of the grave state of deterioration of the Villa, of the Winery, of the Church of the Reliquarium (Makhtar), their excavation, conservation and eventual presentation or backfilling should be prioritized. Priority should also be given to the Stylite tower and of the castrum fortifications in consideration of their precarious state of conservation.

CON.2: Conservation interventions will be approved and coordinated by the Joint Technical Committee or the SMD and CD. Their implementation will be ensured by the SMU under the supervision of the Madaba directorate, who will be responsible for their correct execution as per highest technical and scientific standards.

CON.2.1: Joint Technical Committee or the SMD and CD receive, approve (via Director General), and coordinate conservation intervention

CON.2.2: Ensure that any development work in the area, including those planned by MoTA for tourism development purposes, are subjected to a previous cultural heritage impact assessment and are validated by the Joint Technical Committee, and approved by the Director General of Antiquities.

CON.2.3: Ensure monitoring of approved development works by DoA's archaeologists and the Madaba Dir., in line with Antiquities Law 21/1988 and its Regulations.

CON.3: Conservation guidelines will be developed to counteract man-made and natural threats and risks as identified in this SMP. They will also indicate the principles guiding conservation interventions on site, as per international standards and with particular reference to: i) long-term sustainability; ii) minimum impact on the authenticity and integrity of the site; iii) reversibility.

- CON.3.1:** Establish conservation guidelines concerning interventions on each site and for identified threats and risks. Guidelines will recommend the minimum standards for intervention, including professional profiles required for the supervision of project implementation. They will also incorporate risk preparedness guidelines and protocols, which will be developed together with a risk matrix.
- CON.3.2:** Compilation of the guidelines will follow established standards and the authors will seek the opinion and advice of national and international experts. Provisions for site protection in case of war will also be mentioned, such as the display of the Blue Shield and other recommendations set forth in the Convention for the Protection of Cultural Property in the Event of Armed Conflict (1954) and its two Operational Protocols (1954; 1999).
- CON.4:** Conservation guidelines will also recommend that conservation works be executed by experienced professionals, and will provide minimum educational and professional requirements.
- CON.4.1:** Develop qualitative and quantitative studies and analyses to assess the impact of key emerging risks and threats and most appropriate impact reduction strategies, including visitor flow management, to serve as a background in the development of conservation guidelines.
- CON.4.2:** Ensure a solution to the problem of birds entering and nesting under St. Stephen's shelter.
- CON.4.3:** Tackle the issue of vandalism and removal of covers from buried mosaics by a combined action of better guarding and sign-posting. In the visitor center, provide information on the damage caused by vandalism, as a way to raise awareness on this threat and instruct on proper behavior.
- CON.4.4:** Consider light, temporary fencing/wiring of archaeological areas, such as the churches, the villa, and the cisterns/water basins in order to limit damage and vandalism to these sites, but also as a safety measure
- CON.4.5:** Conduct technical studies on various technical aspects such as ancient mortar compositions, construction techniques, geological and petrographic studies, quarries, stone provenance, etc., in order to inform conservation activities.
- CON.4.6:** Ensure that water is drained away from monuments (especially St. Stephen complex). The DoA's SMU and SMD will collect data and will study drainage issues at each major location and will recommend installation of, improvements or modifications to existing systems.
- CON.5:** Conservation guidelines will contain clear instructions for documentation and reporting on conservation interventions, particularly: i) the periodicity of the reports; ii) the content of the reports; iii) the modalities for submission of the reports; iv) the photographic documentation to be attached to the reports.

CON.5.1: Establish a standardized reporting format for conservation and documentation activities, and include instructions on minimum standards for photography and graphic documentation and archiving.

CON.6: Documentation and reports will be archived in the Umm ar-Rasas Documentation Centre (UaRDoC). The UaRDoC will be physically accessible at DoA's premises. Published material will also be available on site at Umm ar-Rasas and online through contents' digitization, with the view to enhance the internationalization of researches and studies on the site.

CON.6.1: Establish the Umm ar-Rasas Documentation Centre (UaRDoC). All published and unpublished material on Umm ar-Rasas will be collected and digitized, both those already available at DoA's documentation centre or made available by other institutions in the course of the years. The initial lot of published and unpublished studies will consist in the documentation collected by the SMP Team for the preparation of this SMP.

CON.6.2: The Joint Technical Committee will decide where and how to storage the paper and digital information and what kind of access should be granted to researchers external to DoA.

CON.6.3: Define rules for access to and use of UaRDoC by external scholars.

7.2.4. Research and Excavations (REX)

Aims

Research in Umm ar-Rasas will be promoted in order to reinforce and further enhance the OUV of the entire site for all chronologies and architectural/archaeological structural typologies. Particular attention will be devoted to the archaeology of later phases of occupation as well as the Ottoman period village, and buildings and structures that are not associated to a religious function, given the scarce information available on this matter. Investigations will be undertaken as per the highest international standards and will ensure that their outcomes are accessible to the international community and the larger public. Accurate, periodic and accessible documentation of excavations will ensure transparency of interventions and their continuous revision in the light of new technical discoveries and acquisitions. Provisions will be made to ensure that recovered artefacts are accurately recorded, declared and returned to DoA upon completion of research.

Policies and Actions

REX.1: Research and excavations will seek the investigation of cultural values through a balanced distribution of interventions on the diverse chronological and structural components of the site.

REX.1.1: Develop a research strategy in consultation with national and international research centres and other stakeholders. The annual implementation of the strategy will be included in the SAP with related budget estimates.

REX.1.2: The research strategy will list excavation/research priorities, especially as they concern partially excavated areas (such as the winery, the Villa, and the Church of

Reliquarium/Makhtar), and less investigated structural typologies (such as domestic and military architecture, terrace fields, quarries, etc.) and chronological periods (such as the Late Roman and the Umayyad, Abbasid, and post-abandonment phases, including the Ottoman period and early modern occupation).

REX.2: Research and excavations will be coordinated by the Joint Technical Committee or by the Excavations and Surveys Department (ESD) and the SMD and their implementation will be supervised by the SMU, who will be responsible for their correct execution as per highest technical and scientific standards.

REX.2.1: Ensure that all research and excavations requests are in line with the above-mentioned strategy and that their authorization be approved by the Directorate of Excavations in close coordination with the SMD. Research and excavation requests will be validated by the Director General of Antiquities, as per Regulations for Archaeological Excavations and Surveys in Jordan (2015).

REX.2.2: Ensure that excavations be undertaken under the monitoring of a DoA representative following the Regulations for Archaeological Excavations and Surveys in Jordan (2015).

REX.3: Research and excavations will be executed by national and international bodies of high professional standard and will abide to the Antiquities Law 21/1988 and to the Regulations for Archaeological Excavations and Surveys in Jordan (2015). Specific guidelines will be developed to ensure that they are carried out correctly and particularly that: i) excavation reports are submitted to the DoA on a regular basis and no later than 3 months after the end of each archaeological campaign; ii) excavation reports contain all relevant scientific information for future analysis and reinterpretation of data contained therein; iii) consolidation and presentation interventions are guaranteed upon completion of excavations, where applicable; iv) artefacts are documented, catalogued, inventoried and returned to the DoA within a maximum time limit.

REX.3.1: Invite research centres and universities to apply for excavation and research permits at the site, in accordance with identified research priorities.

REX.3.2: Provide excavation teams with the following documents: i) Antiquities Law 21/1988 and the Regulations for Archaeological Excavations and Surveys in Jordan (2015); ii) reporting format, which will include at a minimum the following information: description and pictures of stratigraphy and features; Harris matrix, list, description, and pictures of artefacts found; archaeological interpretation of the data found during the excavation.

REX.3.3: Foster remote sensing surveys in the perimeter of the archaeological area in order to identify buried features and establish a complete archaeological map of the area.

REX.3.4: Complete the archaeological survey of the site, expanding it to the buffer zone and beyond, in order to ascertain the archaeological potential of the site and its surrounding areas.

- REX.3.5:** Establish GIS maps for Umm ar-Rasas to manage the archaeological and conservation intervention.
- REX.3.6:** Establish a system for inventorying and monitoring the movements of objects from the site to storage facilities and museums, and for those on loan to national or foreign institutions.
- REX.3.7:** Ask the Studium Biblicum Franciscanum to provide an inventory of the objects in storage with them, and impose a time limit for the return of the objects.

7.2.5.Maintenance and monitoring (MNT)

Aims

Regular site monitoring and maintenance will ensure that the values of the site, its authenticity and its integrity remain intact and are properly conveyed to all stakeholders. Tourism flows will also be closely monitored to reduce its impact on the site.

Policies and Actions

- MNT.1:** A maintenance strategy will be defined by the MoTA and the DoA and turned into concrete actions on a yearly basis based on their importance, urgency and on existing opportunities. These actions will be incorporated as part of the SAP and will define priorities and estimated budget needs. Site monitoring and maintenance will be coordinated by the SMU for all that concerns the archaeological remains and tourism infrastructures.
 - MNT.1.1:** Develop specific objectives concerning the maintenance of archaeological sites. On a yearly basis, identify actions to be implemented on the short term and include them in the SAP with accurate budget estimates.
- MNT.2:** Monitoring and maintenance of archaeological structures will occur on a regular basis and at least once every four months, based on an annual action plan to be incorporated as part of the SAP. Guidelines and protocols for site monitoring and management will be developed by the SMU in close collaboration with the Madaba Directorate and SMD.
 - MNT.2.1:** Develop monitoring and maintenance guidelines and protocols for archaeological sites, establishing a list of actions to be conducted at every monitoring exercise. These guidelines and protocols will be developed in close collaboration with conservation specialists working on specific projects on site.
 - MNT.2.2:** Continue monitoring and information recording, and enter the data collected in a dedicated database or spreadsheet. Interval of monitoring exercises will be decided by the SMU in coordination with the SMD and ideally will never exceed four months, establishing a quarterly cycle.
 - MNT.2.3:** Establish training on the implementation of monitoring and maintenance activities, including filling monitoring forms and carrying out specific on-site activities (e.g. grassing, cleaning, etc.).

MNT.3: Monitoring and maintenance of the Visitor Centre and other tourist infrastructures will be ensured by MoTA under the direct supervision of the SMU and close coordination of the SMD, and their quality will aim to attain high international standards as per global tourism expectations.

MNT.3.1: Develop monitoring and maintenance guidelines and protocols for tourist infrastructures (visitor center, paths, shelter, site furniture, etc.), establishing a list of actions to be conducted at every monitoring activity.

MNT.3.2: Monitor tourist facilities on a regular basis and as per established guidelines and protocols, under the supervision of the SMU and TIM. Strict supervision is required when works are carried out by external contractors.

MNT.3.3: Maintain the walkways under St. Stephen shelter, especially the glass panels.

7.2.6. Interpretation and presentation (INT)

Aims

Umm ar-Rasas will be interpreted and presented to foster the understanding of its cultural values as expressed by the SMP. Communication strategies will be designed to meet visitors' needs and expectations, and will endeavour to minimize visitation's impact on site conservation. The MoTA and the DoA will concertedly collaborate to ensure highest interpretation and presentation standards through the synergy of their specific expertise and competences.

Policies and Actions

INT.1: An interpretation and presentation plan will be defined by the Joint Technical Committee in consultation with concerned national and international stakeholders. The strategy will be turned into concrete actions on a yearly basis based on their importance, urgency and on existing opportunities. These actions will be incorporated as part of the SAP according to priorities and will contain estimated budget needs.

INT.1.1: Develop interpretation plan and actions to address the issues of interpretation at the site. The interpretation strategy will seek a holistic view of the area and embed all its values.

INT.1.2: Develop signage to be placed on site and guide visitors to discover the significant aspects of the site. Signage will indicate places of attraction, pathways, viewpoints, as well as rules of behaviour and risks. Signage will be printed on durable material, scratch proof.

INT.1.3: Develop a new exhibition prepared by specialists and displayed in the visitor center.

INT.1.4: Introduce interactive displays and multimedia communication (e.g. virtual tours) in the visitor center. The displays will use high quality, high definition photographic and graphic documentation collected on site. Procurement of this material and 3D models may be recommended.

INT.1.5: Develop and print brochures, map, and a guide booklet to distribute or sell on site.

INT.2: Seek the collaboration of the local community in developing “stories” for site interpretation and presentation

INT.2.1: SMU, Madaba Directorate and SMD will work with local NGOs and cultural associations to include the local community’s perspective in the presentation of the site. This may take the form of including information on site or in the visitor centre about the local tribes and their history, and their relationship with the site.

INT.3: Interpretation and presentation will develop several “themes” derived from the discoveries made at the site, which may include the story and significance of the Limes Arabicus, the importance of monasticism and ascetism in early Christianity, the religious tolerance demonstrated by the permanence of the Christian cult during the Umayyad and Abbasid periods, mosaic art, historic geography, etc.

INT.3.1: Consult archaeologists and conservation specialists to develop the interpretation of the site.

INT.3.2: Design and implement the thematic itineraries through the most suitable communication tools such as panels, virtual tours, 3D models, etc.

7.2.7. Tourism, facilities, services and infrastructures (TFS)

Aims

Umm ar-Rasas World Heritage Site is a unique site that should receive an important percentage of tourists visiting the country. The visitor center facilities will be re-evaluated and maintained to ensure that they remain consistent to a high standard. Paths will be redesigned and the installation of shelters on other monuments on site will be evaluated. Site development will not conflict with site conservation, and it will be subordinated to the preservation and enhancement of the site’s values, authenticity and integrity. The development of other sites and itineraries in the region may contribute to the increase of tourism numbers.

Policies and Actions

TFS.1: The development of facilities and services will be planned based on a thorough analysis of tourist needs and physical/environmental constraints, to ensure the best hospitality on site.

TFS.1.1: Identify priorities and actions for tourism facilities and services’ development, to be integrated in the SAP, based on consultations with other stakeholders (e.g. tour operators, guides’ associations etc.), on the results of the tourist surveys, and market analyses to identify the target consumer.

TFS.1.2: Provide an operational plan for the visitor center, including required monitoring activities and schedules, maintenance activities, etc.

TFS.1.3: Regulate the issue of service payments at the visitor center. Install separate water and electric meters for the operations of the various activities and include specific clauses in service contracts concerning this issue.

- TFS.2:** MoTA will strategically promote the site to relevant groups and institutions in order to encourage tour operators to market it as a tourist and educational destination and ensure its inclusion in national and international visiting circuits and tourism offers. The inclusion of the site in a “heritage trail” may increase the possibilities for a rapid growth of tourism numbers.
- TFS.2.1:** MoTA, the Jordan Tourism Board (JTB) and other relevant stakeholders, in close coordination with the DoA, will develop promotional material and will promote the site also via the organization of special events
- TFS.2.2:** Ensure the celebration of the International Day of Monuments and Sites, on April 18 every year, and/or of a “Umm ar-Rasas day” on , every year (date of inscription of the site on the World Heritage List).
- TFS.2.3:** Organize trainings for tour guides, tour operators and the media to ensure the correct dissemination and promotion of the site’s cultural values.
- TFS.2.4:** Consider the creation of “heritage trails” based on themes, such as the Limes Arabicus, including significant forts in the area (Qasr et-Thuraya, Qasr al-Bshir, Lejjun), a “mosaics trail” (Madaba, Mt. Nebo, Nitl), or a “Christian trail” (Hesban, Mount Nebo, Madaba, Mekawer). The opportunity to link the site with visits of Wadi Mujib and its waterfalls should be explored, as the wadi can be an opportunity to develop trekking activities starting from Umm ar-Rasas.
- TFS.3:** The execution of any development work on site will be subordinated to the DG approval. In this regard, the DG will seek the advice of the Joint Technical Committee to assess the potential impact of planned development works over the cultural and archaeological values of the site. Site development projects will be preceded by heritage and environmental impact assessments, to ensure that no major threat emerges to the preservation of the site. Where applicable, development works will be assisted by experienced archaeologists for salvage/rescue operations, to ensure their minimum impact on the cultural and natural values of the site.
- TFS.3.1:** Ensure that tourism development interventions are preceded by impact assessments in order to minimize consequences on the cultural values of the site (see also CON.3.1).
- TFS.3.2:** Design new paths using as much as possible identified streets and alleys, to facilitate the comprehension of the town plan. Consider the installation of sheltered/canopied areas or platforms for rest or where guides can make their presentations
- TFS.3.3:** Minor modifications to the existing situation will require projects prepared by MoTA’s technical offices and approved by the DG upon recommendation of the SMD. They will be implemented under direct supervision of the SMU.
- TFS.3.4:** Ensure that development works are implemented by specialized contractors under the monitoring of DoA’s experienced archaeologists and/or environmentalists for salvage/rescue operations throughout every phase of the works.

- TFS.4:** Tourism support services will be enhanced to international standards and expectations (e.g. refreshments, tour guides, handicrafts, etc.). Where possible tourism support services should seek the participation of the local community (see COP.2)
- TFS.4.1:** Encourage local associations and cooperatives to improve quality and variety of handicrafts and products sold in souvenir shop, including packaging and branding.
- TFS.4.2:** Ensure the presence of staff that can assist tourists (e.g. ticket vendors should be able to communicate in English).
- TFS.5:** Facilities' improvement and landscaping will respect the original environment, they will not harm the aesthetics and values of the site, and they will be fully reversible.
- TFS.5.1:** Avoid landscaping, introducing plants and other elements that are not part of the present environment.
- TFS.5.2:** Eliminate old or obsolete signs on and near the site, and replace with consistent, unobtrusive signage.
- TFS.5.3:** Study the possibility to use animals or light transportation to transport tourists from St. Stephen church to the ancient agricultural fields, Church of the Quarry/Building of the Rolling Stone, and continuing to Stylite tower area.
- TFS.5.4:** Restore the toilet block near St. Stephen church, studying the possibility to transform it to a dry toilet system
- TFS.6:** Facilitating access for people with disabilities will be considered for at least a portion of the site (St. Stephen complex).
- TFS.6.1:** Study the possibility to install a path from the parking near St. Stephen complex to a platform overlooking the mosaic floors.
- TFS.7:** Tourism development actions will be designed based on a thorough analysis of visitors' profiles and needs, in order to ensure results-based investment of existing resources.
- TFS.7.1:** Periodically conduct visitor surveys in order to verify visitor satisfaction and use the survey findings to correct tourism strategies and actions.
- TFS.8:** Tourists will be closely monitored by the guards throughout the opening hours of the site, and the number of guards available on site will be revised based on effective needs.
- TFS.8.1:** Monitor tourist activities and behavior through guards and the tourist police, and under the close supervision of the VCSM.
- TFS.8.2:** Install a solar-powered Closed-circuit Television (CCTV) system inside St. Stephen complex connected to the visitor center.
- TFS.8.3:** Provide uniforms for the site guards to foster awareness on their role and function on the site.
- TFS.9:** Tourism management guidelines will be developed should conservation studies prove that an excess of tourists bears a concrete, serious threat to the conservation of the site. In this

regard, carrying capacity studies will allow identifying the most appropriate strategies for the management of visitor flows.

TFS.9.1: Based on the qualitative and quantitative studies developed as part of the conservation actions, evaluate the opportunity to establish visitors' management guidelines to reduce tourism impact on the conservation of the site.

TFS.10: The capacities of staff, including field-based guards and tourism professionals, will be reinforced to ensure their optimal engagement and motivation in site conservation, management and monitoring.

TFS.10.1: Train guards on their duties and responsibilities and inform them on punitive actions in case of wrongdoing. Consider incentives in terms of salary benefits or in kind benefits for good performance.

TFS.10.2: Train guards and the tourism police on emergency issues, risk preparedness and site awareness.

TFS.10.3: In collaboration with the Civil Defence, provide training for the firefighters stationed in the nearest station for appropriate intervention at the site in case of an emergency.

7.2.8. Public awareness and education (EDU)

Aims

Umm ar-Rasas will represent an expression of Jordanian identity and culture, and its legacy will be recognized and protected by locals and nationals as part of a common heritage. Awareness will be spread among adults and the youth on its values, and on the importance of conservation and respect for their past and their environment.

Policies and Actions

EDU.1: Education and public awareness will be a core element of site management and presentation, and they will seek the holistic presentation of the site's values.

EDU.1.1: Prepare medium and short term education and awareness strategies and actions equally targeting the adults and the youth, to be incorporated in the SAP.

EDU.2: Education and public awareness will equally target adults and the youth, but they will particularly endeavour to engage the latter through the establishment of official heritage education and field-based opportunities, in order to facilitate the dissemination and promotion of heritage-friendly behaviours and a culture of heritage preservation.

EDU.2.1: Involve school and university students in educational and community activities. These may take the form of lectures, provided in schools or on site by the SMU, as well as of "Umm ar-Rasas days" where students are invited to help the SMU to clean the site, help with monitoring activities, conduct tourist surveys and interviews etc.

EDU.2.2: Encourage local non-governmental organizations (NGOs) and teachers to develop information sessions in the schools as well as extra curricular activities that can take place on site or in the visitor center in collaboration with the SMU.

EDU.2.3: Consider the establishment of a Public Archaeology program at Umm ar-Rasas, especially if archaeological and conservation fieldwork will take place. Visitors and the local community could take part in these activities. The establishment of such a program will have to consider issues of safety and security before it can be implemented.

EDU.3: Education and public awareness will take the form of permanent exchanges, projects and activities for ad-hoc dissemination of the site's values across schools and in other public venues. Such projects will be developed and implemented in close collaboration with cultural/educational organizations.

EDU.3.1: Encourage national non-governmental organizations (NGOs) and the Media to coordinate their activities with DoA's SMD and the site's SMU, in order to develop a program of site-related activities that can eventually be formalized in events to be programmed yearly.

7.2.9. Community participation and economic development opportunities (COP)

Aims

The participation of the local community will be encouraged in the fields of education and awareness, direct involvement in the presentation of the site, and in the development of culture and tourism-based economic opportunities.

Policies and Actions

COP.1: Private initiatives and community involvement will be enhanced by supporting income-generating activities directly linked to the preservation and presentation of Umm ar-Rasas. To this end, adequate surveys, studies and meetings with the local community as well as liaisons with other cultural/economic projects will be organized to assess existing opportunities for culture-based economic development in the area.

COP.1.1: Conduct periodic meetings with the local community to inform them of issues concerning the site and on economic opportunities arising in the context of site development.

COP.1.2: Encourage at the local level the development of a business plan for tourist-related income generating activities to include also the creation of an Umm ar-Rasas logo and "brand" for authorized locally produced items.

COP.1.3: Provide training on business development start-ups and access to financial opportunities and incentives

COP.2: Local private investment could be encouraged within a strategic vision for culture and tourism based development, making sure that the OUV of the site are not affected.

COP.2.1: Liaise with other economic development projects conducted in the area by other organizations in order to explore partnership opportunities.

COP.2.2: Involve the JTB and other concerned stakeholders in the marketing of the site to attract an increased number of tourists in the *badiya* region.

7.2.10. Investments, marketing and funding (FND)

Aims

Umm ar-Rasas will be allocated an annual budget for its regular maintenance and for site development, including tourism enhancement. Extra-budgetary funds will be ensured through ad-hoc fundraising activities to promote site conservation, investigation and presentation. Community-based activities aiming at tourism development in Umm ar-Rasas and in the surrounding *badiya* will be supported to enhance heritage-driven development in the area and to reinforce community participation into site conservation and presentation.

Policies and Actions

FND.1: Umm ar-Rasas will be allocated a site budget for ordinary conservation and development activities. A budget estimate and strategy will be defined by the MoTA and DoA and will be incorporated as part of the SAP. Budget allocations will be coordinated by the MoTA and DoA as per respective competencies and responsibilities.

FND.1.1: Develop budget estimates and yearly budget plan for all activities concerning the site's conservation and development, to be incorporated in the SAP.

FND.1.2: Coordinate budget allocations between MoTA and DoA, as per respective competencies and responsibilities.

FND.2: Other conservation, research, documentation and/or development projects will be carried out through the combined input of national and international funds as per upcoming needs and priorities. Depending on situations, fundraising actions may be initiated by DoA and/or MoTA. The formal preparation and submission of project proposals will be entrusted to the competent Departments/Units in the MoTA and in the DoA and communication will ensure continuous updates on funds' availability and site development perspectives.

FND.2.1: If required, conduct fundraising for specific projects. Project proposals will be developed by the competent Department or Unit at MoTA or DoA, and will be coordinated by the SMD.

FND.2.2: Seek the participation of national and international NGOs and Universities in joint projects in the fields of heritage conservation and research, as well as capacity building and any other activity that may help achieve the recommendations of this SMP and other specific plans prepared for the site.

CHAPTER 8 – PLAN IMPLEMENTATION

Implementing the plan requires coordination among all main actors and the establishment of clear decision-making and monitoring mechanisms, assigning responsibilities, and defining clear duties and milestones. This chapter describes such requirements and outlines an implementation process for each of the aims and respective actions identified in chapter 7.

8.1. Plan approval and implementation mechanism

The completed Site Management Plan (SMP) will be endorsed by the Director General of Antiquities and will be sent to the Minister of Tourism and Antiquities for approval. This approval will legally bind the Ministry of Tourism and Antiquities (MoTA) and the Department of Antiquities (DoA) to the implementation of the SMP.

Two key institutional bodies will be in charge of the implementation of the SMP:

- a. The DoA, particularly through the Director General of Antiquities, the Sites Management Directorate (SMD) with its World Heritage Sites Section (WHSS), and the Site Management Unit (SMU);
- b. The MoTA, particularly through the Tourism Site Management Directorate (TSMD).

A Joint Technical Committee of experts from MoTA and the DoA, composed by the heads of the DoA Site Management Directorate (SMD) (which will also act as Secretariat of the Committee), the World Heritage Sites Section of SMD (WHSS), the Tourism Site Management Directorate at the Ministry of Tourism and Antiquities (TSMD), the Madaba DoA directorate, the Umm ar-Rasas Site Management Unit (SMU), will be convened yearly to develop the **Site Annual Plan (SAP)** and every five years to review the SMP. The SAP will identify priority actions and existing budget for yearly interventions on site, and will be consistent with the vision, aims, policies and actions identified through this SMP. The SAP will be implemented on site by the SMU under the coordination of the SMD.

8.1.1. Ministry of Tourism and Antiquities

The MoTA will retain its responsibilities concerning the management of the visitor center and other tourist activities on site, but any new activity and site development plan or action will have to be developed within the framework of specifications issued by the DoA/Joint Technical Committee and implemented by MoTA and the supervision of DoA.

The Minister of Tourism and Antiquities

In relation to Umm ar-Rasas World Heritage Site (WHS) the Minister of Tourism and Antiquities will have the following responsibilities:

1. Approve this SMP upon recommendation of the Director General of Antiquities;
2. Periodically approve the SAP with related budget, on a yearly basis.
3. Commit to a yearly budget

The Tourism Site Management Directorate

In relation to Umm ar-Rasas WHS, the Director of TSMD will be part of the Joint Technical Committee.

Furthermore the TSMD will have the following responsibilities:

1. Coordinate with DoA's SMD and SMU all actions pertaining to the management of the site as per the recommendations of this management plan, and particularly:
 - a. All actions related to the extraordinary maintenance and improvement of infrastructures (e.g. parking area, paths, visitor center, resting areas, toilets, signage, etc.);
 - b. All actions related to the construction or development of new facilities (e.g. new paths, shelters, etc.);
 - c. All actions related to tourism product development.
2. TSMD will identify and coordinate with SMD all the initiatives that concern the product development and related investment and operational agreements
3. Once finalized and approved, projects must be implemented by TSMD.

8.1.2. Department of Antiquities

The DoA is the agency responsible for the conservation, excavation, research, management and presentation of the nation's cultural properties. It is responsible towards UNESCO to maintain the Outstanding Universal values of its World Heritage sites. With specific reference to Umm ar-Rasas, the DoA will be responsible for the approval, coordination and implementation of the site's conservation, investigation, presentation, management and development, and will furthermore ensure close monitoring of any modern development works occurring on site to minimize their impact on the cultural values and assets of the area. The DoA will therefore ensure the preparation of the Site Annual Plan, as repeatedly detailed above and in previous chapters.

The Director General of Antiquities

The Director General of Antiquities will endorse Umm ar-Rasas' SMP and SAP and will forward them to the Minister of Tourism and Antiquities for approval. Furthermore, the Director General will have the following duties and responsibilities:

1. Approve annual reports on the management of the site;
2. Receive and approve project proposals related to infrastructure and tourism development, upon recommendation of the SMD and the Joint Technical Committee.

The Site Management Directorate

The SMD is in charge of the planning and coordination of all activities concerning the management of archaeological sites and WHS in Jordan. SMD responsibilities presently include the following tasks:

1. Development of strategic plans for the conservation and management of archaeological sites
2. Preparation of site management plans
3. Development of guidelines for cultural resources management
4. Development of training and capacity building courses for DoA staff in site management issues
5. Participation in the preparation of World Heritage Nomination files

6. Preparation of State of Conservation Report for WHS
7. Organization of meetings with stakeholders and local communities.

As it concerns Umm ar-Rasas, SMD will be responsible for:

1. Assessing ordinary and extraordinary interventions on site and submit them for approval to the DoA's DG;
2. Preparation of the site's Site Annual Plan (SAP), as member and Secretary of the Joint Technical Committee, for long and short term strategic coordination of actions on site;
3. Coordination of SAP implementation;
4. Development of guidelines as required by the Site Management Plan (SMP), together with the advice of SMU's Head, of other competent Directorates at DoA and of other relevant stakeholders;
5. Establishment and implementation of information-sharing mechanism and tools, to ensure close coordination with MoTA and other relevant stakeholders;
6. Organization of meetings with relevant stakeholders to ensure continuing protection of the site
7. Development of training and capacity building courses for DoA staff in site management issues.

The SMD will also be part of the Joint Technical Committee and it will act as its Secretariat, thus ensuring that the components of the body fruitfully collaborate and timely deliver the SAP. The SMD reports to the Director General of Antiquities.

The Site Management Unit

The SMU will be responsible for the implementation of actions in Umm ar-Rasas, as identified by the Site Management Directorate (SMD) through the yearly Site Annual Plan (SAP). Its functions will include:

1. Implementing and reporting on the activities established in the SAP;
2. Monitoring development at and near the site and report threats/risks to the SMD and to the regional Directorate in Madaba;
3. Collaborating with experts and the SMD in the compilation of guidelines;
4. Provide advice to the SMD in the compilation of the SAP;
5. Organizing meetings and activities with the local community;
6. Overseeing the Visitor Centre's and tourist infrastructures management and development, and report to the SMD regarding emerging issues;
7. Collaborate with the SMD and MoTA's TSMD to improve the tourist services and the presentation of the site.
8. The Head of the SMU is part of the Joint Technical Committee

The SMU will continue to be based on the field in Umm ar-Rasas. At the technical level, the SMU will report to the SMD and the TSMD, at the administrative level, the SMU's Director of Archaeological site will report to the DoA Madaba Directorate, and the SMU's Director of Visitor Center will report to the Tourism Madaba Directorate.

Reporting

The scheme below shows the recommended reporting system: the SMU's Head Reports to SMD and TSMD on technical matters (at the administrative level the respective Madaba Directorates maintain their supervisory role). TSMD and SMD copy each other on the issue and ask the opinion of the Joint Technical Committee (if needed) otherwise report to the Minister and to DoA Director General. They reply to them with the recommended action, which is then transmitted back to the SMU's Head, copying the Tourism and DoA Madaba Directorates.

8.2. Action Program

A plan of the actions required for the implementation of this SMP is presented in the form of a table at the end of this chapter. The actions are charted by aims and policies, and they are classified based on the time and priority of implementation. In this regard, we distinguish between short, medium and long term actions, respectively for implementation within one or two years (short term), three to five years (medium term) and over five years (long term). A distinction is also made between high, medium and low priority actions.

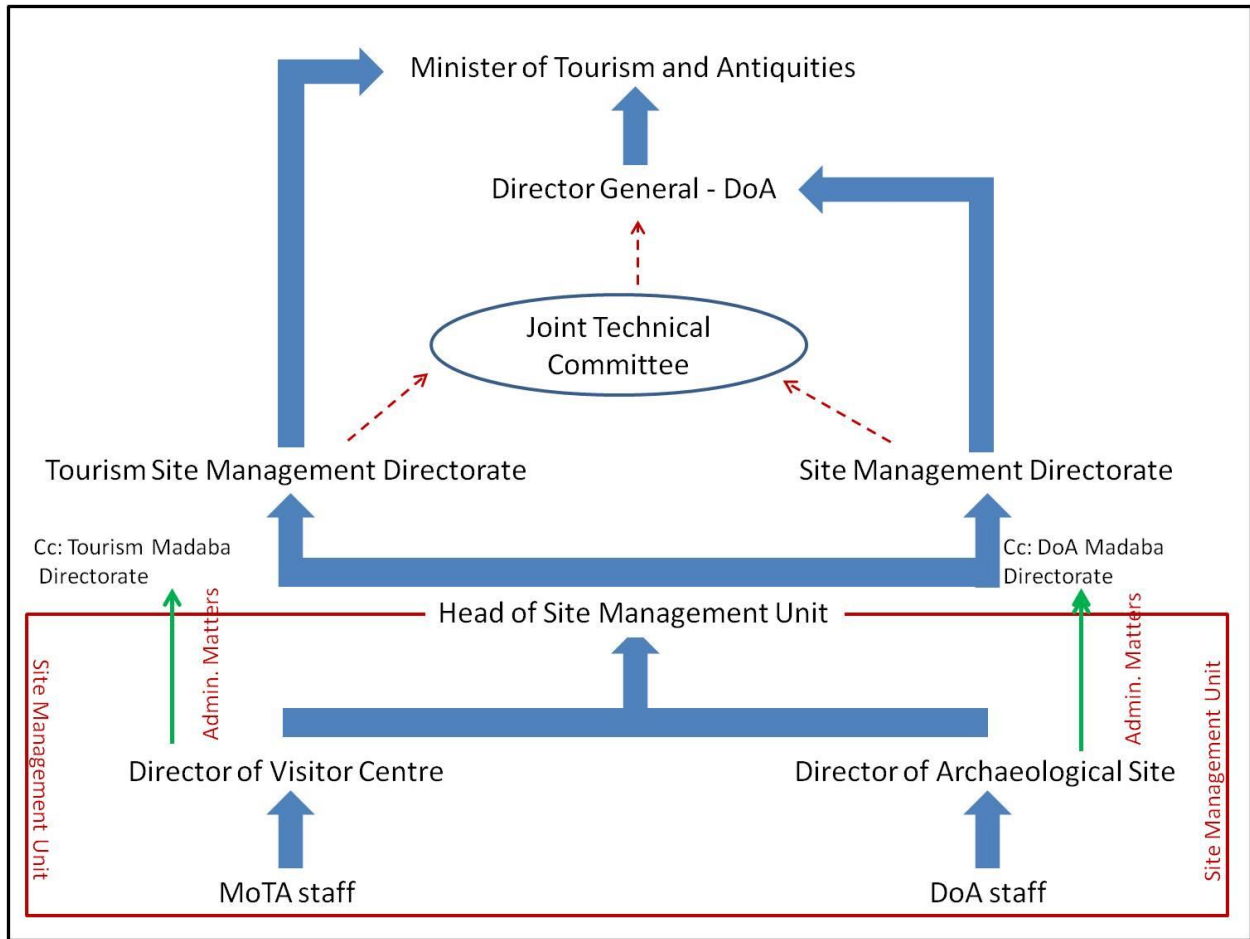
8.3. Plan monitoring and periodic review

The plan should ideally be reviewed and updated every five years. Most of the actions identified in this SMP should be completed by the end of the fifth year. A first evaluation will be undertaken after one year from the approval and endorsement of the SMP, and modifications will be applied as per relevant emerging needs.

The execution of the actions will be monitored by the SMU and coordinated by the SMD, who will also be in charge of the organization of the periodic review.

The review will consist of:

1. Organization of new condition assessments
2. Evaluation of the impact of actions undertaken at the site
3. Assessing possible changes impacting the Outstanding Universal Value of the site
4. Drafting of recommendations concerning corrective or new actions to be undertaken to improve conservation and public access.
5. Organization of stakeholders meetings to discuss draft recommendations
6. Finalize document and present to the Joint Technical Committee for adoption.



Proposed organization of SMU's reporting

8.4 IMPLEMENTATION ACTION PLAN

AIM	POLICY	ACTION	RESPONSIBLE			TIMEFRAME			PRIORITY High, Medium, Low
	No.		Description	No.	Description	BODY	Short (yr 1-2)	Medium (yr 3-5)	
Legal and institutional framework (LEG)	LEG.1	SMP approval	LEG.1.1	SMP adoption	DoA, MoTA				High
			LEG.1.2	SMP periodic revision	Joint Committee				Medium
	LEG.2	Management	LEG.2.1	Establish SMU	DoA, MoTA				High
			LEG.2.2	Establish Joint Committee	DoA, MoTA				High
			LEG.2.3	Convening Committee, SAP preparation, SMP revision	SMD, Committee				High
			LEG.2.4	Procedural manual for communication	Communication				High
	LEG.3	Boundaries	LEG.3.1	Boundaries registration	MoTA, DoA				High
			LEG.3.2	Purchase land parcels	MoTA, DoA				High
			LEG.3.3	Modify fence to include WHS boundaries and buffer zone	DoA, MoTA				High
			LEG.3.4	Adjust buffer zone boundaries	DoA, MoTA				High
			LEG.3.5	Inform WHC on buffer zone adjustments	DoA, MoTA				High
			LEG.3.6	Monitor and review	DoA				Medium
			LEG.3.7	Penalties enforcement for buffer zone infringements	DoA				High
	LEG.4	Enforcement of Antiquities Law	LEG.4.1	Transfer MoTA land with presence of archaeology to DoA	DoA, MoTA				Low
			LEG.4.2	Raise awareness of Antiquities Law with stakeholders	DoA				Medium
			LEG.4.3	Promote DoA authority with stakeholders	DoA				Medium
	LEG.5	Coordination with	LEG.5.1	Information sharing on	SMU, Madaba dir.				High

		Municipality and Governorate		development plans					
Appropriate Use (USE)	USE.1	Coordination	--	--	DoA, MoTA				
	USE.2	Guidelines development	USE.2.1	Develop guidelines	DoA, MoTA				
Conservation and documentation (CON)	CON.1	Conservation strategy	CON.1.1	Develop objectives and short term actions to incorporate in the SAP	SMD, SMU				
	CON.2	Coordination and supervision	CON.2.1	Approval and coordination	Joint Technical Committee, SMD, CD				
			CON.2.2	Cultural heritage impact assessment	SMD, WHSS, Madaba dir.				
			CON.2.3	Archaeological monitoring	SMU				
	CON.3	Conservation guidelines and immediate threat control	CON.3.1	Establish conservation guidelines and risk matrix	Joint Technical Committee				
			CON.3.2	Contribution of national and international experts in guidelines compilation	SMD, CD				
	CON.4	Addressing threats	CON.4.1	Develop studies to assess risk	Joint Technical Committee				
			CON.4.2	Solve birds problem in St. Stephen	SMU				
			CON.4.3	Solve vandalism issue and raise awareness	SMU, Madaba Dir, SMD				
			CON.4.4	Temporary fencing	SMU, Madaba Dir, CD				
			CON.4.5	Technical studies on materials	Madaba Dir, SMD, Joint Technical Committee				
			CON.4.6	Water drainage	Madaba Dir, SMU, CD, SMD				
	CON.5	Guidelines	CON.5.1	Standardize reporting	SMD, Madaba Dir				

				format					
	CON.6	Establish Documentation Centre	CON.6.1	Establish centre	Joint Technical Committee				
CON.6.2			Establish storage and access policies	Joint Technical Committee					
CON.6.3			Define access rules	Joint Technical Committee					
Research and Excavations (REX)	REX.1	Vision and strategy	REX.1.1	Develop research strategy and incorporate in SAP	SMD, Committee				
			REX.1.2	Establish priorities	Committee				
	REX.2	Coordination	REX.2.1	Establish procedures	ESD, SMD, Madaba Dir, SMU				
			REX.2.2	Monitoring	DoA Rep.				
	REX.3	Regulations	REX.3.1	Identify research priorities, invite collaborations	Madaba Dir, ExcD, SMD				
			REX.3.2	Reporting format	Madaba Dir, ExcD, SMD				
			REX.3.3	Foster remote sensing surveys	Madaba Dir, ExcD				
			REX.3.4	Complete archaeological survey	Madaba Dir, ExcD, SMU				
			REX.3.5	GIS maps	Madaba Dir, ExcD				
			REX.3.6	Inventorying and monitoring object movements	Madaba Dir, ExcD				
REX.3.7			Request inventory from SBF	Madaba Dir, ExcD					
Maintenance and monitoring (MNT)	MNT.1	Strategy	MNT.1.1	Develop objectives and short term actions to incorporate in the SAP	SMU, Madaba Dir, SMD				
	MNT.2	Guidelines, protocols and urgent actions	MNT.2.1	Develop guidelines and protocols for archaeology	SMU, SMD				
			MNT.2.2	Continue monitoring and enter info in database	SMU, Madaba Dir				

	MNT.3	Visitor center	MNT.2.3	Training	SMU, Madaba Dir				
			MNT.3.1	Guidelines and protocols	SMU, TSMD				
			MNT.3.2	Regular monitoring	SMU, TIM				
			MNT.3.3	St. Stephen walkway maintenance	SMU, TIM				
Interpretation and Presentation (INT)	INT.1	Interpretation and presentation plan	INT.1.1	Develop plan	Joint Technical Committee				
			INT.1.2	Develop signage	SMU, SMD, TSMD				
			INT.1.3	Develop new exhibition for visitor centre	Joint Technical Committee				
			INT.1.4	Interactive display and multimedia	Joint Technical Committee				
			INT.1.5	Brochures	SMD, TSMD				
	INT.2	Develop local perspectives	INT.2.1	Include local community perspective in site interpretation	SMU, Madaba Dir, SMD				
	INT.3	Develop themes for presentation	INT.3.1	Consult specialists to develop site interpretation	SMD, CD				
			INT.3.2	Design and implement thematic itineraries	SMD				
	Tourism, facilities, services and infrastructures (TFS)	TFS.1	Facilities development	TFS.1.1	Identify priority and actions, incorporate in SAP	TSMD (PDS), SMU			
TFS.1.2				Provide operational plan	TSMD, SMU				
TFS.1.3				Regulate service payments	TSMD, MoTA				
TFS.2		Site promotion	TFS.2.1	Develop promotional material and promote site	MoTA, JTB				
			TFS.2.2	Celebrate International Day of Monuments	MoTA, TSMD, SMD, SMU				
			TFS.2.3	Tour guides training, awareness for tour operators and media	MoTA, SMD				
			TFS.2.4	Create "heritage trails" involving sites in the region	MoTA, DoA				
TFS.3		Monitor development works	TFS.3.1	Cultural impact assessments	Joint Technical Committee				
			TFS.3.2	Design new paths	Joint Technical				

					Committee, MoTA					
			TFS.3.3	Minor project preparation	MoTA, SMD, SMU					
			TFS.3.4	Monitor implementation works	MoTA, DoA					
	TFS.4	Raise quality of tourism services	TFS.4.1	Encourage local association and cooperatives to improve and diversify products	MoTA					
			TFS.4.2	Ensure presence of English-speaking staff in VC	SMU, DoA, MoTA					
	TFS.5	Improvements and landscaping to respect context and site values	TFS.5.1	Avoid landscaping	VCSM,SMU					
			TFS.5.2	Eliminate old signage	VCSM, SMU					
			TFS.5.3	Study path from St. Stephen to Tower	SMU, Madaba Dir, SMD, Committee					
			TFS.5.4	St. Stephen toilet block	SMU, Committee					
	TFS.6	Facilitate access for people with disabilities	TFS.6.1	Study path from St. Stephen parking to site	MoTA, TSMD					
	TFS.7	Analyze visitors' needs	TFS.7.1	Periodic visitor surveys	MoTA, TSMD, VCSM					
	TFS.8	Tourist monitoring	TFS.8.1	Monitor tourist activities and behaviour	Guards, Police, VCSM					
			TFS.8.2	Install CCTV in St. Stephen	SMU					
			TFS.8.3	Provide uniforms to guards	DoA					
	TFS.9	Tourism management guidelines	TFS.9.1	Evaluate development of tourism management guidelines	MoTA, TSMD					
	TFS.10	Capacity building	TFS.10.1	Train guards	SMU					
			TFS.10.2	Train guards and security police in risk preparedness	SMU					
			TFS.10.3	Train firefighters	SMU					
Public awareness and education (EDU)	EDU.1	Education and awareness as core element of site management	EDU.1.1	Prepare education and awareness initiatives to incorporate in SAP	SMD, Joint Technical Committee					
	EDU.2	Develop public initiatives	EDU.2.1	Develop initiatives involving students and	SMD, SMU					

				schools/universities					
			EDU.2.2	Develop local extracurricular activities	SMD, SMU				
			EDU.2.3	Consider a Public Archaeology program	SMD, SMU, Project Directors				
	EDU.3	Involve cultural and educational institutions	EDU.3.1	Work with NGOs to develop educational programs	SMD, SMU				
Community participation and economic development opportunities (COP)	COP.1	Assess opportunities	COP.1.1	Conduct meetings with local community	SMU, SMD				
			COP.1.2	Develop local business plan, Logo and brand	SMU, MoTA				
			COP.1.3	Training on business development	MoTA				
	COP.2	Establish strategy	COP.4.1	Liaise with regional development projects	SMU, MoTA				
			COP.4.2	Involve JTB in marketing the site	SMU, TSMD, MoTA				
Investments, marketing and funding (FND)	FND.1	Site budget allocation	FND.1.1	Develop budget estimates and yearly plan	SMD, MoTA				
			FND.1.2	Coordinate budget allocations between DoA and MoTA	SMD, MoTA				
	FND.2	Fundraising	FND.2.1	Develop specific projects for fundraising	SMD, TSMD, MoTA				
			FND.2.2	Seek collaboration of national and international organizations	SMD, Joint Technical Committee				

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