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SCHEP Workshop: Sustainable Cultural Heritage Through Engagement of Local Communities Project

Workshop Overview

This panel-based session provided an overview of the USAID Sustainable Cultural Heritage Through Engagement of Local Communities Project (SCHEP), implemented by the American Center of Oriental Research (ACOR; now the American Center of Research). USAID SCHEP has developed a number of innovative approaches to cultural heritage through the engagement of local communities over the past four years. A special focus was made on community engagement and site stewardship models, which have been integral to SCHEP and its activities

at sites in Jordan. Through a focus on four case studies of SCHEP-affiliated projects: the Umm al-Jimāl Archaeological Project, the Community-Based Rock Art and Epigraphic Recording Project in Wādī Ramm, the Mādābā Regional Archaeological Museum Project, and the Temple of the Winged Lions Cultural Resource Management Initiative in Petra, this session presented an overview of the key aspects of SCHEP and its main activities and achievements primarily between 2014–2018, including its role in training and capacity-building, job creation, community and stakeholder

engagement, site conservation and interpretation, educational awareness, and the development of sustainable tourism and economic opportunities within local communities. A series of panelists and co-panelists presented on each case study, which was followed with questions and discussions. A key aim of the session was to raise awareness of the project's unique, multi-level model, and to review its successes and challenges for the benefit of future projects.

The SCHEP Community Engagement Model (Nizar Al Adarbeh)

Jordan hosts a vast number of archaeological sites that are important cultural heritage resources (CHRs) for the country. These CHRs could have substantial tourism appeal if properly developed using a sustainable preservation model that ensures their viability as long-term resources for Jordan. Implemented by ACOR, USAID SCHEP aims to engage local communities in sustainable site preservation, management, and promotion as a way to both enhance the management of Jordan's CHRs and to create opportunities for economic growth. Through funded field projects across Jordan, SCHEP and its partners demonstrated the substantial benefit of community engagement at nine pilot CHR sites during its first phase of implementation, from 2014 to 2018.

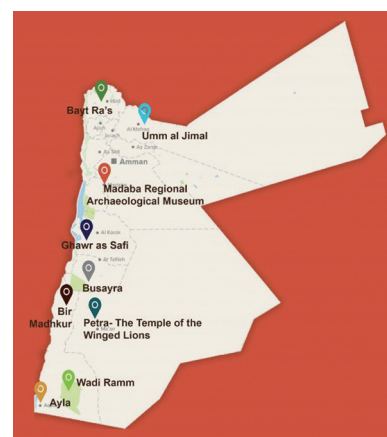
SCHEP fostered a collaborative environment with key local partners, including the Department of Antiquities, Petra Development and Tourism Region Authority, and the 'Aqaba Special Economic Zone Authority, to strengthen the role of communities in preserving cultural heritage. The following sections will highlight the key areas of community engagement that form overall SCHEP Model. This is demonstrated also in the four projects presented in this session, which highlight different case studies and approaches to site preservation

and development through community engagement.

Site Development

SCHEP selected diverse CHR sites to serve as the base for site development activities focused on engaging local communities. Across the country, nine sites were chosen: Karak, Busayra (Ṭafila), Umm al-Jimāl (Mafraq), Bīr Madhkūr (Wādī 'Arabah), the Temple of the Winged Lions (Petra), Bayt Rās (Irbid), Wādī Ramm, Ayla ('Aqaba), and Mādābā (FIG. 1). SCHEP partnered with pre-existing CHR projects at some sites to ensure the effectiveness and sustainability of interventions in addition to establishing new ones in collaboration with local and international partners. The sites were chosen in part due to their diversity in terms of location, accessibility, size, etc. By working with a wide variety of sites, SCHEP confirmed that there is no one standard model to be followed to preserve, protect, and promote heritage sites with the direct involvement of the surrounding communities; however, engagement of these communities in such projects is indispensable.

Community members worked with the CHR projects in all aspects of site preservation, development, presentation, and



1. A map showing the SCHEP nine associated CHR sites.



2. Local community members in Umm al Jimāl help to clear new pathways throughout the archaeological site as part of the Umm al-Jimāl Project. Photo courtesy of USAID SCHEP.



3. Participants in the Archaeological Surveying Diploma—Phase IV. Photo by Zaid Kashour.

interpretation, which all have been combined with hands-on training programs (FIG. 2). Although specific forms of intervention necessarily varied from site to site,

the ultimate goal was to ensure that each site was able to reach its potential as a destination for education, exploration, and community-building, in addition to enhancing its readiness to receive visitors and eventually contribute to the development of the local economy.

Capacity-Building

In partnership with its affiliated projects as well as CHR institutions, universities, and others, SCHEP offered a wide range of capacity-building opportunities for both local community members and cultural heritage sector employees. The aims of the capacity-building program were to foster career development and better employment outcomes, strengthen the cultural heritage sector on the whole, and ensure transfer of knowledge from international experts to those doing work on the ground.

By conducting needs assessments, evaluating past projects, and holding conversations with stakeholders, SCHEP's training courses and workshops targeted areas that needed strengthening or new skills that were lacking. In its first four years, SCHEP conducted more than 20 training programs in key areas of cultural heritage, including documentation, conservation, interpretation, management, museum studies, and tourism development, benefiting more than 300 community members and cultural heritage professionals (FIG. 3).

Job Creation

Many of Jordan's CHRs lie in economically under-served areas. Sustainable development of these CHRs could help to grow local economies by creating new opportunities for revenue and employment. Seizing on this potential, SCHEP-



4. Local community members work on site development in Ghawr aş-Şāfi. Photo by Barbara A. Porter.

supported projects and companies helped generate 300 job opportunities, including 134 opportunities for those living in poverty pockets or areas with high concentrations of refugees. SCHEP and its partners made sure that many of these opportunities went to women, aiming to increase women's participation in the cultural heritage sector and in the workforce overall. As detailed further below, SCHEP has also helped community members to establish heritage and tourism companies and supported them to become self-sufficient and sustainable sources of employment for local community members (FIG. 4).

Tourism and Economic Development

In order to ensure sound and sustainable development of SCHEP CHR sites,

enhance marketing and promotional efforts, and strengthen the mobilization of local resources towards tourism development, SCHEP supported the establishment of four local Micro and Small Enterprises (MSEs) at SCHEP sites (FIG. 5). In 'Aqaba, Busayra, Ghawr aş-Şāfi, and Umm al-Jimāl, former SCHEP partners and site stewards are now leading their own initiatives, aiming to help manage local CHRs, develop tourism products and experiences, attract new visitors, and provide income and employment opportunities for their communities.

As part of the effort to achieve sustainable growth in tourism to its nine supported sites and to ensure that they are included on the national tourism map, SCHEP has also worked with organizations like



5. Logos for the four MSEs established with the support of USAID SCHEP.



6. Awareness activity with handicapped youth in Wādī Ramm, World Tourism Day 2017. Photo by Yusuf Ahmad.

the Jordan Inbound Tour Operators Association (JITOA) and Jordan Tourism Board to introduce tour operators to the lesser-known sites and produce materials that introduce curious visitors to what they have to offer. The project also offered training on site promotion, offering local stakeholders the knowledge and skills they need to turn their local sites into national and international destinations.

Awareness

SCHEP works with communities to foster pride and a close relationship with nearby CHRs through awareness and education activities. Under the SCHEP “Generations for Heritage” (#Generations4Heritage) Awareness Program, the project focused on raising awareness of youth and students near SCHEP sites and other CHRs by conducting workshops, site visits, and lectures that promote the value of cultural heritage. SCHEP engaged more than 6,000 students in awareness and education activities, including a series of interactive workshops for schools using hands-on learning activities, such as field visits to archaeological sites, visiting museums, mending broken modern pottery, making mosaics, and identifying

and reading ancient inscriptions (FIG. 6). SCHEP engaged multiple stakeholders in awareness activities, including the Ministry of Education, Madrasati Initiative, the Children’s Museum, and Jordan Friends of Archaeology and Heritage Society (FOAH), with the active participation of the CHR institutions, SCHEP team members, and Site Stewards in conducting the activities.

CHRs Institutional Development and Knowledge Sharing

SCHEP is working towards embedding its results within official structures and organizations to ensure information transfer and enhance the institutionalization of knowledge and practice. In this capacity, SCHEP helped to develop several important policies and guidelines to guide the Jordanian heritage sector toward sustainability, self-reliance, and engagement of local communities at all levels. Over the project’s first four years, SCHEP created a list of general best practices for site management, helped compile Archaeological Site Usage Guidelines, contributed to the development of Petra’s Integrated Site Management Plan, and provided other institutional support for the CHR sector. Finally, SCHEP

brought together sector stakeholders to initiate the development of a new, holistic Archaeological Heritage Strategy for Jordan for the coming years.

Conclusion

SCHEP's model for community engagement has proven its effectiveness in enhancing the work of the heritage sector and shown how CHRs can be managed more sustainably, contributing not only to the archaeological body of knowledge, but also to genuine local economic development which fosters employment, job creation, and poverty alleviation. A key lesson learned from the first four years of SCHEP is that community engagement is not a fixed model nor made up of rigid or strict components, but rather an adaptive and customizable approach that must be based on the specific nature of sites, communities, and other core factors. Moreover, a sustainable engagement model should be enhanced through working from the bottom-up as well as from the top down. This approach was demonstrated well during the first phase of USAID SCHEP, and can be the answer to guiding future projects toward more sustainable outcomes. The SCHEP team looks forward to learning from the experiences of the first four years and continue working on the new phase until 2022.

The Site Stewards Model (Jehad Haron)

Introduction

In this paper I will present the experiences of USAID SCHEP in developing its novel approach to site stewardship in Jordan. The model developed by the project has been applied in some other countries with different levels of engagement. The Site Stewards play a critical role in SCHEP due to their continuous presence at the sites and their deep engagement at the local community level. While Site Stewards fulfill roles and duties that are specific to their respective sites, they all work towards the

overall goals of protecting, preserving, and promoting SCHEP sites in their host communities. Under the employment of SCHEP and its affiliated project directors, and in coordination with the SCHEP team, the Site Stewards fulfill the aims of both local sub-grantee projects and broader SCHEP objectives. With support from their project directors and the SCHEP team, the Site Stewards are entrusted with protecting CHRs for future generations.

Coordination Among Stakeholders

Site Stewards interface with various community, national, and international stakeholders to promote coordinated efforts and cooperation. Stakeholders may include, but are not limited to: the project director and his/her team, the SCHEP team, the Jordanian Department of Antiquities (DoA), academic researchers, municipalities, public and private schools, cooperatives, non-governmental and semi-governmental organizations, local businesses, and other associations. So far, SCHEP has successfully recruited 15 Site Stewards, distributed across the nine project sites.

The Role of the Site Steward

In the SCHEP model the below set of actions were carried out by the project Site Stewards:

- Act as the point of contact for SCHEP team and others in planning visits and meetings related to the site in host communities.
- Tell the story of the site based on the project directors' site narrative, conveying the site's history, significance, and potential.
- Convey information about archaeological work at the site, SCHEP, and other topics.
- Encourage all visitors to protect the site's cultural and natural integrity.
- Communicate with visitors in

Arabic and English.

- Provide information about available facilities and services (e.g., restaurants and restrooms).
- Monitoring: the Site Steward is also required to report vandalism and other damage to the site's integrity (e.g., degradation due to natural causes) to the project director, SCHEP, a DoA point of contact, and any other relevant parties.

Their role does not exceed the above actions in order to avoid any overlapping with other field key players.

Community Outreach

Working within local communities is not an easy task, especially if the work is related to preserving the cultural heritage surrounding these communities. This difficulty is due in part to the lack of any direct relationship between these communities and the archaeological sites that are in their surroundings. Such connections may be lacking for many reasons, such as a lack of in-depth awareness about the sites, in addition to the absence of any material benefit from preserving them. On the contrary, in some cases the presence of the archaeological site is a burden on the local population. Hence, SCHEP Site Stewards were chosen from among the rural or under-served communities living around the project's affiliated heritage sites. The site steward role proved critical to helping establish a relationship with the community, engage members of communities around and near SCHEP sites to encourage their participation in the project, raise awareness about local cultural heritage resources, and conduct events such as informational meetings, lectures, site visits, clean-up campaigns, and other activities. Such activities target children and youth especially, utilizing educational modules and curricula when available.

Capacity-Building

Various capacity-building courses have been customized to fulfill the needs of the Site Stewards to enhance their capabilities and ensure knowledge transfer, including:

- General courses (intro to the legal context, English language, management, tourism promotion and communication).
- Customized technical training in varied topics based on the site type (e.g., conservation, world heritage site management, documentation, etc.).
- Field visits to some selected success examples in cultural and tourism sector, the aim was to expose the site stewards to other experiences.
- Participating in national conferences linked to cultural and tourism activities.

Conclusion

One of the most challenging issues that faced the archaeological project directors was the need to extend their projects' duration. Most of them committed to grant agreements with firm deadlines, but due to their commitments abroad they had to work on a seasonal basis, and this affected their achievements and work progress. Our model bridged this gap through finding qualified local people like the Site Stewards who could take over the project director's role on the ground, while the directors themselves could still oversee their work from abroad. In this way, the project meets deadlines and avoids major delays. This practical model was tested among SCHEP's nine affiliated sites, and we can claim successes in implementing this model, especially in Umm al Jimāl, Bayt Rās, and Mādābā. This applied model for site stewardship is the first of its kind in Jordan and we hope it will be generalized across Jordan and beyond, especially in remote communities and

around endangered archaeological sites. We believe that adopting the Site Steward model from the government's side would have a positive impact on the protection of many archaeological sites in Jordan.

Signage Manufacture at Umm al-Jimāl: Creating a Microbusiness for Vandalism-Resistant Installations (Bert de Vries)

Developing Signage Production at Umm al-Jimāl (UJ)

The production and installation of 33 signs for the UJ Interpretive Trail by the Umm al-Jimāl Archaeological Project (UJAP) through two grants by SCHEP helps provide visitors with answers to the question, "How did they live?" By June 2016, 20 signs had been installed. Production of these signs included training a local team in the design and production of (1) the graphic images, including the writing of text in English and Arabic, creating and editing photographs and graphics, and effective layout; (2) durable steel frames produced locally; (3) display panel printing by a Mafrāq advertising firm; and (4) assembly of all components. All display panels were vetted and approved by the Department of Antiquities. Assembly and installation of the first twenty signs was done by a local team overseen by UJAP field director, Muaffaq Hazza (FIG. 7).

The signage development was financed by SCHEP's first-phase grant to UJAP.¹ The



7. First generation sign, "Construction Techniques," installed summer 2016. Photo by Bert de Vries.

outcomes included the completion of the eastern portion of the Interpretive Trail and establishment of an experienced signage production team based at Umm al-Jimāl.

Monitoring and Evaluation

Study of signage performance at major sites in Jordan led to the conclusion that all signage systems failed within three years because usually the installation of new signs was considered the final step; there was no follow-up funding and staffing for maintenance. Therefore, UJAP decided that an Umm al-Jimāl signage system could succeed only with an annual maintenance and repair plan. For that UJAP implemented monitoring and evaluation of the twenty signs installed by in May 2016. Fortunately, this process could be incorporated in the resumption of SCHEP stage two grant renewal in March of 2017 along with the completion of the western portion of the trail and the remaining thirteen signs. The year of monitoring produced the following results:

- Adequacy of the steel frames—the steel frames proved durable, but the

¹ The design team included: concept design, UJAP Team; text development, Elizabeth Osinga, Paul Christians, Jenna Morton, and Bert de Vries; photographs, Jeff DeKock, Bert de Vries, and Paul Christians; graphic design, Jeff DeKock and Paul Christians of Open Hand Studios; frame design, Na'il Aqil and Muaffaq Hazza; frame manufacture, Na'il Aqil; sign assembly and installation, Muaffaq Hazza, Ali Aqil, and local site management trainees; Arabic translation, Abdullah al-Khdeer.

display panels were too horizontal, which proved problematic because: (1) the displays were difficult to view, and (2) windblown dust accumulated on the plexiglass covers. Solution: angle panels more vertically for improved visibility and better sustained cleanliness.



- Natural wear and damage—south-facing signs suffered splitting of the graphic printed on the plastic film. Solution: reorient signs at point of installation.
- Moisture and sand under the plexiglass—flexibility of stainless-steel lock-in wrap sealing was not adequate to prevent moisture and sand entry in rain and wind. Solution: a more waterproof lock-in frame in place of the stainless-steel wrap.
- Colorfastness of the printing—under plexiglass the colors and ink density remained stable without fading. Exposure without plexiglass (removed after vandalization) resulted in fading after several months. Conclusion: colorfastness on the plastic film is very good if sign damage can be prevented.
- Durability of the stainless-steel wrap and sealants—this wrap proved durable and impervious to the elements but was inadequate for protecting the plexiglass and for locking in a waterproof sealant. Solution: switch to a steel frame cover that is more rigid and easily removable for maintenance of the display panel.
- Vandalism was by far the worst cause of damage. Shortly after installation, people attacked the plexiglass with rocks (FIG. 8). Over

8. Vandalized first-generation sign. Photo by Bert de Vries.

the two-year life of this signage, 60% of the covers were completely gone and survive only in the immediate vicinity of House 119. In a third of the signs the plastic film was ripped away. While 19 of the frames remained securely, the 20th was tumbled on its side. Solution: include greater durability in the redesign and lobby for increased site security.

Redesign Manufacture and Installation of All 33 Signs

The 20 signs were removed and their frames redesigned for a more vertical angle, and with an improved lock-in cover as demonstrated by Muaffaq Hazza (FIG. 9). The plexiglas specification was upgraded from 3 to 5 mm thickness, and better sealing gaskets were used. All graphic panels were reprinted. Frame design and assembly done by Muaffaq Hazza and production and by Na'il Aqil.

Signs 21–33 were fully designed and manufactured by the UJAP staff, ready for assembly and installation, but installation was delayed by lingering site security issues. Open Hand Studios trained the local UJAP architectural team in the graphic design methodology. Thus, production of the



9. Redesigned frames with greater display verticality and improved panel lock-in cover, demonstrated by project manager Muaffaq Hazza. Photo by Bert de Vries.

10. Graphic image of flora sign, layout produced by Dana al-Faraj and Mais Haddad.

second-generation signs became a totally local operation² (FIGS. 10–11).

Training Effect: Ingredients for a New Signage Production Business at Umm al-Jimāl

The training process included deliberate localization of expertise in signage development, aspects of which include:

1. Design of all components and materials needed for durable signage.
2. Presentation content prep through access to archaeological and heritage data at Umm al-Jimāl.
3. Visual documentation of features to be displayed using cameras and architectural documentation.
4. Professional graphic design using the necessary range of computer software for drawing and layout.



11. Installation of second-generation sign at Double Church (Ali Aqil seated on apse wall). Photo by Bert de Vries.

5. Manufacture of steel frames at Umm al-Jimāl.
6. Market awareness for acquisition of all materials specified within the Mafraq district.
7. Assembly of all components at Umm al-Jimāl.
8. Installation skills by local trained site managers.
9. Marketing skills and capability to develop signage production on a national level.

² The production team included: Text development, Elizabeth Osinga, Jenna Morton, and Bert de Vries; photography, Bert de Vries and Open Hand Studios; translation, Abdullah al-Khdeer; graphic design, Dana al-Farraj and Mais Haddad; redesign of sign assembly; Muaffaq Hazza and Jehad Suleiman; manufacture, Muaffaq Hazza and Na'il Aqil. All signs were installed on the SCHEP-funded trail by a local team overseen by Muaffaq Hazza, Jehad Suleiman, and Ali Aqil in October 2018.

Conclusion

This project has proven it is possible to produce interpretive signs for archaeological sites locally in a rural setting like Umm al-Jimāl, with proper training and adequate experimentation. This process has not just created jobs but made it possible to create a highly technical local community sustainable business based on archaeological site management. The team reached the conclusion, that while signs can be made durable, they cannot be made vandalism-proof. Therefore, to have signs last over multiple years, any site management program needs to budget for repairs to cover both the ravages of weather and recurrent vandalism. UJAP's production and installation of 33 signs has set the stage for the establishment of signage production business operating country-wide to be established by Hand by Hand Heritage Corporation of Umm al-Jimāl, itself organized and chartered with funding and advice from SCHEP.

The project also pioneered in developing a high-quality set of signage texts and graphics that tell a coherent story on the theme, "How did they live?" Particularly this story included, not only the results of UJAP's archaeological research, but also included the modern community through information based on ethnographic study, surveys, and oral history. After a year in place the signs have proven to be popular among local, Jordanian, and foreign visitors, all of whom can understand the entire site through them, and some of whom can recognize themselves in them.

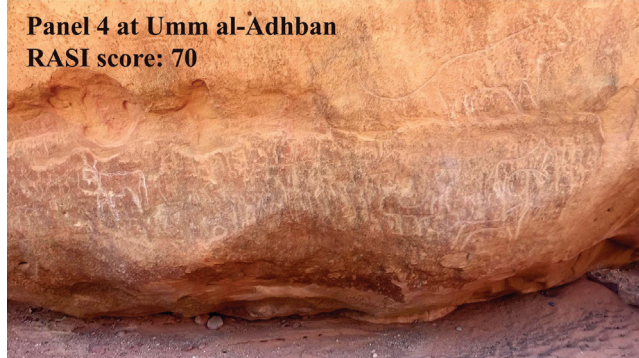
The Rock-Art Rangers Program: Enhancing Tourism and Improving Employment Outcomes in Wādī Ramm (Kaelin Groom, Casey D. Allen, and George Bevan)

In 2017, the Community-Based Rock-Art and Epigraphic Recording (CB-RAER) Project, funded by USAID SCHEP,

completed several interrelated goals in the Wādī Ramm Protected Area (WRPA). Besides providing an effective site stability monitoring program for this World Heritage site via smartphone-based GIS data-collection, the project combined Jordanian and foreign CB-RAER team leaders' expertise with data gathered during field surveys to create the Rock-Art Rangers (RAR) program, expanding local guides' knowledge and skillsets. Despite being one of the last projects initiated by the SCHEP team—thus the shortest overall in duration—the CB-RAER and RAR programs surpassed all expectations both in terms of productivity as well as community awareness and engagement.

The initial phase of the project addressed the project's primary, and ultimate, goal of helping create a long-term, sustainable system, run by local WRPA staff to document and protect the abundant rock-art and epigraphy in the Wādī Ramm area using the Rock Art Stability Index (RASI) and online GIS. Created by a multidisciplinary team of heritage scientists, RASI is an observationally based field assessment tool to identify and evaluate rock decay and other indicators of geologic instability of rock art panels (Dorn *et al.* 2008; Cerveny *et al.* 2016). The numerical RASI "scores" provide clear criteria for site management and prioritization of resources to the most at-risk panels as indicated by higher RASI values (FIG. 12). Specifically designed to be intuitive and self-explanatory, the index can be easily learned and understood by anyone—thus encouraging direct stakeholder and community involvement—but still providing in-depth geomorphological information vital for effective cultural resource management in the region (Groom *et al.* 2019).

The successful combination of RASI with user-friendly GIS data collection (smartphone apps) produced incredibly valuable and detailed stability reports



12. Comparative rock art and epigraphic panels in Wādī Ramm with corresponding RASI scores indicating different levels of decay/instability. Photos and scores from new WRPA online geo-database.

addressing both human and natural geologic concerns geospatially tied to specific sites and panels. Beyond workshops and guided data-collection, the local CB-RAER documentation team continued RASI analyses throughout the year and have collected, to date, assessments of nearly 1,200 individual rock art panels across 85 different sites throughout the protected area. Ultimately, the documentation element of the project trained over a dozen local heritage professionals and volunteers by experts in the field, put commercial off-the-shelf (COTS) GIS and mobile data-collector solutions in the hands of local Wādī Ramm management, and took the first steps in creating a fine-grained comprehensive database of the truly vast rock art and epigraphic heritage in Wādī Ramm (FIG. 13).

Complementary to RASI, the other main aspect of CB-RAER project promoted knowledge sharing, capacity-building, and local empowerment through the Rock Art Rangers Program. More than 25 tour

guides representing tourism guilds from Rum Village, Disi, and other neighboring villages participated in an intensive epigraphic and geographic workshop run by the CB-RAER core team in December 2017. Of these, 15 of the most committed were selected to participate in the official three-month Rock Art Rangers program, during which time they learned about the geology, geography, rock-art, and epigraphy of Wādī Ramm, and subsequently used this knowledge to create new rock-art tours in and around the WRPA. Upon successful completion of this program, tour guides were accredited as Rock-Art Rangers and as guides qualified to offer enhanced tours that focus on the region's rock-art heritage. As more tourists seek out new experiences in Wādī Ramm that go beyond its spectacular natural heritage, we believe that this RAR accreditation will become ever more important for local guides and many have already used their training to promote rock art heritage tours and local stewardship of heritage sites.

13. Core Team members, site steward, and Jordanian scholars practicing RASI in the field and learning mobile GIS collection methods (*i.e.*, smartphone GIS). From left to right: Mohammad Dmayan, Salem al-Zalabiyah, Nassar al-Zawaydeh, Saleh al-Noaimat, Kaelin Groom (behind Saleh), Zeyad al-Salameen, and Ibrahim Sadaqa. Photo by George Bevan.



It could be argued that the greatest success of the CB-RAER project has been the level of enthusiasm and dedication exhibited by the local community members who got involved in the research and training programs (FIG. 14). Throughout the program there were noticeable changes in the perception and attitude of the local community towards the WRPA's rock art and inscriptions. Especially after the epigraphic training when local community

members learned how to read and write in the ancient language of the region. Many members of the program expressed gratitude and excitement for feeling reconnected with past peoples and histories of the region. While only a handful of members from the community directly participated in the RAR training programs and workshops, those participants then returned home and taught their friends and families what they learned. It was an ideal response to this kind of



14. Group of Rock Art Ranger trainees learning about Thamudic inscriptions and interpretation from Core Team member Mohammad Dmayan (center in tan shirt). Photo by Kaelin Groom.

project: organic knowledge sharing among those who can benefit from it the most.

While the primary focus of this project was capacity-building and community engagement, some on-site improvements were also provided in the form of two interpretive signs at the key rock art sites of Khazali Canyon and Alameleh rock outcrop, as well as a sign at the visitor center informing tourists of the new Rock Art Tours to be provided by certified Rock Art Rangers tour guides. In addition, Rock Art Rangers Handbooks were given to each RAR graduate for future reference, plus educational and training material were left with the WRPA, should they wish to resume the program in the future (FIG. 15).

Ultimately, one of the key products of the CB-RAER programs was attitude: by engaging local tour guides and community members alongside site management professionals as peers, the Rock Art Rangers program illustrated how valuable community engagement, instead of exclusion, in scientific research can promote

more sustainable site management. Fighting the unfortunately common adage “it’s lasted this long, how fragile can it be?” the knowledge and skill gained through this program are shared freely within the communities best suited to enact effective change. In the end, CB-RAER has not only provided geospatial stability data to help create new protective policies by the WRPA but also fostered mutual respect and collaboration within the local communities. By participating in the program as equals, both management and local communities can now support new policies and promote social agency to actively contribute to the protection and understanding of the region’s immense natural *and* cultural stone heritage for generations to come.

Acknowledgements

Enough thanks and gratitude cannot be expressed to our Core Team in Wādī Ramm, Saleh Al-Noaimat, Mohammad Dmayan, Nassar al-Zawaydeh, and Salem al-Zalabiyah (official project site steward),



15. First graduating class of the Rock Art Rangers program with their certificates. Photo by Casey Allen.

who were instrumental in making the project a success, our Jordanian scholars Dr. Zeyad al-Salameen and Professor Ibrahim Sadaqa for their dedication and passion, as well as the support and guidance provided by SCHEP leadership and support teams.

Community Engagement in Downtown Mādābā: The Mādābā Regional Archaeological Museum Project (MRAMP) (Douglas R. Clark and Marta D’Andrea)

The Mādābā Regional Archaeological Museum Project (MRAMP) is an international endeavor to transform an endangered urban archaeological area in downtown Mādābā into a new regional archaeological museum for the preservation of the cultural heritage of the Mādābā region. Plans call for an open-design building situated above restored late 19th century architecture that also respects the layout of the Mādābā Archaeological Park West.

From its inception in 2015, MRAMP sought to engage a large number of stakeholder groups in the process of establishing a state-of-the-art regional archaeological museum in the Mādābā Archaeological Park West (FIG. 16). Embracing objectives of 1) protecting, preserving, and presenting Jordan’s cultural heritage; 2) developing and enlarging present economic opportunities sustainably; and in the process 3) securing a future for Jordan’s legacy and for Madaba’s

citizens, MRAMP was conceived within the field of community archaeology (D’Andrea *et al.* 2018a; 2018b; Richard *et al.* 2019).

Because of the nature of the community of Mādābā and of the museum project itself, the pool of stakeholders and stakeholder groups is diverse and robust. This factor assumes and affirms the essential participation of all stakeholders, individuals who can engage with the project, participate in discussions and decisions, collaborate with others in achieving project outcomes, and support the project through wealth, work, and/or wisdom.

As currently organized, MRAMP stakeholders fall into the following categories:

1. *Policy makers at the levels of international, national, regional, and local governments:* including United States and Italian embassies and related entities, the Jordanian Ministry of Tourism and Antiquities, the Department of Antiquities, the Mādābā Governorate, and the Mādābā Municipality.
2. *Business support organizations:* including the Mādābā Chamber of Commerce, the Mādābā Tourism Development and Heritage Preservation Society, and the Amman-based Talal Abu-Ghazaleh Organization.



16. Stakeholders Meeting, December 2018. Photo by MRAMP.

3. *Business and industry*: including construction industries and local shops, restaurants, and hotels.
4. *Academic research institutions/projects*: institutions and projects of academic research, including USAID/ACOR/SCHEP; international universities such as Gannon and La Sierra in the US and Perugia and La Sapienza of Rome in Italy; regional archaeological excavation projects at 'Ataruz, Dhībān, Ḥisbān, Iskandar, Jalūl, al-Mukhayyat/Nebo, Lahūn, Machaerus, Mādābā, Safra Aṣ-Ṣafrā', Wādī Thamad, 'Umayrī, Umm ar-Raṣās, and Murayghāt; and institutions like the Studio Strati architectural firm and CAMNES (Center for Ancient Mediterranean and Near Eastern Studies) in Italy.
5. *Public and private organizations (cultural, religious, educational)*: private and public organizations are many and varied, including organizations like the Mādābā Institute of Mosaic and Art Restoration, the La Storia Museum, and the Friends of the Archaeology and Heritage of Jordan, along with universities with which MRAMP is affiliated like the University of Jordan, Hashemite University, the American University of Mādābā, and the German Jordanian University. Other educational entities involve the Mādābā Department of Education and elementary and secondary schools. Religious institutions of both Muslim and Christian traditions are also important stakeholders, as are the many outlets of digital and print media.
6. *The tourism sector*: Tourism sector central stakeholders include the Ministry of Tourism (Amman and Mādābā), the Department of Antiquities (Amman and Mādābā), and the Mādābā Tourism Board.
7. *International organizations*: including the American Schools of Oriental Research, ACOR, the Council for British Research in the Levant, Institut français du Proche-Orient, the German Protestant Institute of Archaeology, the Italian Archaeological Consortium in Jordan, as well as a large contingent of international scholars.
8. *Families and citizens*: finally, there are the citizens of Mādābā (the city and the region), including the large Muslim population and the minority Christians, many of the latter who are descendants of the 1880s migration of Christians from al-Karak to Mādābā, which had been lying in ruins for a thousand years.

The local community in particular, but also the more broadly based community, is essential to MRAMP, and has been encouraged to participate in the project, developing a strong stakeholders base. This has occurred to a large degree by means of public and private meetings, symposia, and capacity-building workshops and training courses. The future will incorporate Open Learning Environments for deeper and more sustainable educational results.

To illustrate, Department of Antiquities employees and others in Mādābā (and at times from other places in Jordan) participated in workshops about mosaic and stone-wall conservation under Bettina Lucherini (May and September 2017) and Franco Sciorilli (March–May 2018). Many of them were also a part of training courses in museum management and museum curation with Fadi Balawi (June 2018) and artifact photography with Jillian Logee and artifact organization and display with Fatma Marii (FIG. 17), Qais Tweissi, and Jack Green (September 2018).



17. Artifact Organization and Display Workshop with Fatma Marii (left center). Photo by SCHEP.



18. Onsite visit by AUM architecture interns. Photo by MRAMP.

In addition, a program with local university architecture students was held in Mādābā in December 2017 in an open meeting sponsored by SCHEP; architectural museum design features were presented by the Studio Strati architects to students from University of Jordan, Hashemite University, and American University of Mādābā (AUM) and discussed by and with the students. Moreover, an entire course at the American University of Mādābā was dedicated to MRAMP, and AUM students presented their work to MRAMP staff in a class seminar and discussion held at AUM, still in December 2017. An internship program was developed in collaboration with SCHEP in order to engage AUM students in MRAMP

(FIG. 18); the interns presented their work in July 2018.

The mapping of potential stakeholders and the development of the stakeholders' base was accomplished through a series of dedicated initiatives. An initial meeting of the local communities was held in December 2016. The official public MRAMP Launch sponsored by SCHEP took place on site at the Mādābā Archaeological Park West on May 17, 2017 with the participation of around 200 attendees, including key local, national, and international stakeholders, along with the citizens of Mādābā. Subsequently, a second stakeholders meeting was held at the Mādābā Institute of Mosaic and Art Restoration in December 2017. Finally, a



19. Stakeholders meeting at Talal Abu-Ghazaleh Organization. Photo by MRAMP.

symposium sponsored by the Talal Abu Ghazaleh Organization (FIG. 19) was held in Amman in September 2018, aimed at involving local stakeholders in the business and industry sectors.

In particular, the December 2017 stakeholders meeting was focused on the presentation of a draft proposal and 3D model of the envisioned new museum to the community, followed by discussion that allowed the MRAMP team to receive feedback, critique, and suggestions. This opened the way for engaging conversation about cultural heritage and best practices.

Emergency Conservation and Community Training at the Temple of the Winged Lions, Petra (Jack Green and Franco Sciorilli)

The Temple of the Winged Lions (TWL) is an important Nabataean site in Petra dated to the 1st to 4th centuries AD, excavated by Philip C. Hammond as part of the American Expedition to Petra (AEP) between 1974 and 2005. Key findings included the Cella, with its column capitals adorned with winged lions, an inscription from the reign of Aretas IV, and the “goddess

of Hayyan” idol.

The Temple of the Winged Lions Cultural Resource Management (TWLCRM) Initiative, implemented by ACOR since 2009, has made efforts in excavation and documentation, conservation, safety and interpretation, and educational awareness at the site (Tuttle 2013). Initiated by Christopher Tuttle of ACOR, the initiative was supported between 2011 and 2017 by grants from the US Ambassadors Fund for Cultural Preservation, among other donors. From 2015, the Initiative was also supported by USAID SCHEP. A recent phase of activities at the site, supported by USAID SCHEP between 2017 and 2018, enabled the completion of vital emergency conservation of the Cella and the Southwest Quadrant, as well as backfilling areas to help preserve the site in future years. The preparation of pathways and addition of signage has made the site safe and accessible to visitors.

During 2017 and 2018, the project directors from ACOR were Glenn Corbett as Associate Director (until October 2017) and Jack Green (from October 2017). Elena Ronza served as a co-director until March 2017. Monther Jamhawi, former Director-



20. Before and after the application of a protective mortar capping on the Cella podium in 2017. Photos by Franco Sciorilli.

General of the Department of Antiquities (DoA), was a project co-director. Eman Abdessalam and Ahmad Mowasa were employed as SCHEP Site Stewards and played a vital role in project delivery. Franco Sciorilli was lead conservator. Giuseppe Delmonaco, engineering geologist of ISPRA, was a project consultant. Marco Dehner of Humboldt University helped document the site's Lapidarium. The TWLCRM Initiative acknowledges contributions by Sela for Vocational Training and Cultural Heritage, a non-profit organization based in Umm Şayhoūn. The TWLCRM Initiative is conducted with the support of the DOA and the Petra Development and Tourism Region Authority (PDTRA).



21. Landscape team members Agelah Jmeidi and Khatmeh Albedul backfilling in the SW Quadrant. November 2017. Photo by Eman Abdessalam.

Emergency Conservation

Emergency conservation in the Temple Cella was required due to the prevalence of salts, leaning columns, and exposure of its altar to the elements. These problems were exacerbated by poor drainage over several decades. Solutions included the provision of a mortar capping and a magnesium panel

for the temple altar (FIG. 20). Backfilling of the Cella with geotextile at a gradient has helped improve drainage of rainwater away from the site. In the temple's west side, two leaning columns were braced with wooden supports; a third was partially restored. The Cella is now safe and accessible.

The rubble slope in the SW Quadrant

was in danger of collapse due to continued rainwater infiltration and the threat of earthquakes, which may have led to a landslide destabilizing the Temple podium. A sandbag buttress and over 130 m³ of soil was used to support the rubble slope and backfill the quadrant (FIG. 21). A drainage channel was added. A cleaning and consolidation intervention was carried out with lime-based mortar applied between the joints of stone blocks to reinforce the walls. This helped stabilize the site and improve rainwater run-off. The SW Quadrant was cordoned off to discourage visitors from climbing over conserved areas. A graphic panel in this area highlights the role of local community team members in the site's conservation.

Training and Education

An important element of conservation has been the hands-on training of local TWLCRM team members and PDTRA staff, among others, during the project, enabling the transfer of knowledge, skills, and best practices (FIG. 22). This provides potential for new or enhanced employment opportunities for those who received such training. Several team members have since been employment within CRM roles within

Petra and elsewhere in Jordan. Halemah Nawafleh, for example, a documentation assistant with the TWLCRM Initiative, helped record the Lapidarium and assisted in the conservation of Southwest Quadrant between 2017 and 2018. She since became a full time PDTRA employee.

In addition to practical on-the-job conservation training, the continued documentation of the site's condition and the recording of interventions has been a vital part of the project. Training of team members has included the analysis of the condition of archaeological areas, architectural documentation and monitoring, vegetation monitoring and removal, monitoring of rainwater channels and pools, and documentation following conservation interventions.

Through SCHEP's educational awareness program, team members played a vital role in sharing the message of site conservation and preservation through hands-on activities. Site Stewards Eman Abdessalam and Ahmed Mowasa hosted over 250 Jordanian schoolchildren and multiple tourist groups. Schoolchildren came from across Jordan, from Bayt Rās to 'Aqaba. The Experience Petra program gave participants the opportunity to engage



22. Training session at the Umm Şayhoūn Project Office. January 2018. Photo: Franco Sciorilli.



23. Experience Petra: TWL Team member Shaker Alfaqeer prepares Busayra girls' school pupils for mortaring of a demonstration wall. November 2017. Photo by TWL team.

in on-site activities including sifting for artifacts, washing pottery, cleaning and mortaring a wall (FIG. 23), and documenting the site through drawing and photography. Following a successful pilot, it is hoped that it may become part of a future program to help further communicate the value of cultural heritage preservation to schoolchildren and tourists.

Summary

In addition to sharing achievements and project outcomes, it is important to present experiences of training and education as a key element of site conservation and management, for local partners, local community members, and visitors. An important factor is the transfer of knowledge and skills, especially at the end of a project. Hands-on participation and continuity within long term, active projects are key to the transmission of skills and knowledge, as well as observing the impact of conservation interventions over time under changing conditions. While skills such as cleaning, mortaring, backfilling, and salts removal, can be transferred among multiple trainees and across projects, maintaining the specialist support of experienced conservation professionals is essential for quality control and guidance. Lastly, continued monitoring and maintenance of sites is important. It is hoped that a long-term site management plan will be developed for TWL. In the meantime, assigned PDTRA staff already familiar with the site's challenges continue to monitor and maintain the site.

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