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**World Heritage**

**9 EXT.COM**

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**UNITED NATIONS EDUCATIONAL, SCIENTIFIC  
AND CULTURAL ORGANIZATION**

**CONVENTION CONCERNING THE PROTECTION OF  
THE WORLD CULTURAL AND NATURAL HERITAGE**

**WORLD HERITAGE COMMITTEE**

**Ninth Extraordinary Session**

**Paris, UNESCO Headquarters, Room XI**  
**14 June 2010, 3.00 - 5.30 pm**

**Item 4 of the Provisional Agenda: Examination of International Assistance requests**

**SUMMARY**

**Background:** The World Heritage Centre has received **2** international assistance requests as of 01 February 2010, for decision by the Committee.

**Action by the Committee:** The Committee is requested to make a decision on the approval of the requests presented in this document.

**Draft Decisions: 9 EXT.COM 4.1 and 9 EXT.COM 4.2, see items II**

## EMERGENCY ASSISTANCE

### - Cultural Properties

N°	Region	State Party – Name of activity	Amount requested (US\$)	Amount recommended for approval (US\$)
1	Arab States	<b>Jordan</b> – Urgent Investigation of the Rock Stability in the Siq in Petra	67,579	67,579

### Natural Properties

N°	Region	State Party – Name of activity	Amount requested (US\$)	Amount recommended for approval (US\$)
2	Africa	<b>Madagascar</b> – Humid Forests of Atsinanana	99,900	99,900

**Funds available as of 28 May 2010 for approval: US\$ 400.000**

**Total amount of requests submitted for approval by the Committee:**  
US\$ 167,479

**Comments of the Secretariat :** sufficient funds.

Details of these requests on the following page.

**REQUEST N° 1**  
**Emergency Assistance**  
**Cultural Heritage**  
**Arab States**

**State Party:** JORDAN

**Status of dues to the World Heritage Fund as at 31 December 2009:** contributions settled. However, payment of contributions is not obligatory to benefit from Emergency Assistance (see paragraph 237 of the *Operational Guidelines*).

**Name of activity:** Urgent Investigation of the Rock Stability in the Siq in Petra

**Amount requested:** US\$ 67,579

**Previous contributions from the World Heritage Fund for this property/activity:** - technical co-operation (1988), US\$ 50,000  
- technical co-operation (1996), US\$ 29,500

**Background:**

One of the major risks that Petra faces is the instability that affects rock-forming slopes throughout the Siq – a 1.2 kilometer-naturally-formed gorge which is the main entryway into the Petra Archaeological Park. This is mainly attributed to the structural setting of the geological formations outcropping in the area. In the Siq area the most common recognized landslide types are toppling and rock fall. Usually these types of movements develop on fractured rock slopes; and in the absence of a monitoring system, the moment of detachment is unpredictable, and very rapid. These large and rapid movements constitute a menace for monument conservation in rupestrian areas such as Petra, and more urgently, they pose a very dangerous threat to visitors: the Siq is the single visitor entry and exit point into Petra Archaeological Park (on average 2,300 tourists pass through this narrow gorge on a daily basis, with an average peak of 5,000 tourists daily) and once within the 1.2 km gorge, there is limited movement and difficulty for emergency access.

The Siq is formed by very steep slopes with variable height from the ground level, from some metres at the entrance up to approximately 70 metres at certain points of the path. Most of the slopes, composed of Disi sandstone (Precambrian) formation, exhibit a massive aspect. Nevertheless, due to tectonic and geomorphic activities, the slopes may present discontinuities (faults, joints, and bedding planes) that, following their orientation and spatial persistence in the rock mass, may produce blocks of variable dimension. Stresses acting on slopes and blocks may induce progressive enlargement of fractures and create unstable conditions that may cause massive rock blocks to fall with potentially hazardous consequences for tourists that crowd the Siq during their visit to Petra.

In March 2009 the situation described above was demonstrated when a block on the south slope of the Siq developed a fracture. This block is located approximately 300 metres from the entrance, in a particularly narrow stretch of the Siq, requiring that visitors walk very close to the high risk area. Furthermore, in May 2009 a smaller rock detached from the slope and crashed to the ground in the area of the Camel Caravan relief, which is a stopping area where visitors usually pause to admire the

carved images while listening to explanations from their guides. It was extremely lucky that no visitors were injured on that occasion.

These incidents flagged the emergency status of the Siq's safety and the urgent need for a risk map and monitoring. The Department of Antiquities of Jordan (DoA) will undertake the stabilization of the fractured rock, but it cannot carry out the full rapid assessment of the Siq; therefore it has requested that UNESCO undertake the work. Three short-term UNESCO missions were undertaken in April, June, and August of 2009 at the request of the DoA to determine the immediate mitigation requirements regarding the unstable block in the Siq. These rapid investigations revealed that the Siq throughout its entire path is immediately threatened with further risks of collapse. Certain potential hazardous areas of the Siq were detected, especially where discontinuity systems outcrop in the sandstone rock and present stability conditions prone to failure, although with variable potential impact on tourist safety and monument preservation, depending on the volume of rock masses that may potentially fall. These volumes may vary from under 100m<sup>3</sup> to 1000m<sup>3</sup> and above. The latter can be catastrophic according to the evolution of the movement, which is extremely rapid.

Unstable rocks not only endanger visitors to the site, but the monuments themselves – falling rocks may crack the original paving stones in the Siq, damage the hydrological features (which include Nabataean clay water pipes), inscriptions and carved reliefs. In most cases the rocks are interlinked and a single rock fall could trigger other adjacent rock movements. This may lead to a series of collapses which would have a very high impact on this important monument and pose a very serious risk to visitors passing through the Siq.

Entrance to the site through this dramatic Nabataean processional way forms a major part of the visitor experience. Without remedial action taken, the potential risk posed by landslides is very high, and may result in the need to close the Siq. As the Siq is the main entry road into the site, its closure would affect the whole site and greatly undermine the overall visitor experience.

Systematic recognition of potentially unstable areas of the Siq and long-term monitoring of the rock-block deformation are critical for conservation and safety strategies of Petra. To-date, there is no conservation strategy that has been established and furthermore, there are no measures in place to anticipate the risk to Petra's sandstone, nor risk mitigation processes.

As a result of the experts' preliminary findings, it is recommended that an urgent and thorough preliminary mission be undertaken to assess the extent of the immediate threats in the Siq and to develop methods for a large-scale project covering the Siq of Petra. This preliminary study will provide a rapid assessment of the status of dangers anticipated in the Siq and on the basis of consolidated field investigation techniques and related technologies. The assessment will provide the definition of the structural and geological typologies of decay as well as actual and potential instability conditions of the geological formations and monuments. The study will be based on data collection by accurate field survey, data analysis and mapping. The first stage will focus on an in-depth assessment of landslide risk that affect the Siq and its monuments using mainly engineering geology field survey techniques. Such a study will take account of available maps developed by CuTech as part of its ongoing research in Petra.

In the second stage, all data will be analyzed by implementing structural modeling that will provide landslide types identification and kinematics as well as a landslide

hazard map. All data and results will be provided in digital format to be geo-referenced and managed in a GIS environment. The above information is vital for the implementation of emergency and temporary measures to prevent rock falling or sliding.

The main approach of this preliminary investigation will be the following:

- \* Engineering geological survey of geo-structural characteristics of potentially unstable slopes in the Siq area with clear evidence of static structural critical conditions, by means of visual assessment.
- \* Preliminary topographical survey on selected potentially unstable areas in the Siq.
- \* Implementation of 3D scanning or photogrammetric techniques to monitor cracks and rock deformation in some selected potentially unstable sectors.
- \* Preliminary slope stability hazard map with identification of landslide types/potential kinematics and photographic record including videos of the study area.
- \* Preliminary definition of structural emergency interventions for consolidation of most hazardous unstable rock mass and preservation of monuments in the Siq with particular attention to application of engineering techniques for slope stability.

This will form a preparatory step to launch the second phase: the large-scale project focusing on the Siq and other prominent monuments of Petra, that will develop a final risk map using the latest technologies, to fully understand the extent of the problems and to recommend urgent and long-term mitigation measures required to stabilize rock deformations in the entire site of Petra.

The issue of the weathering of the sandstone façades was also addressed within the framework of the Petra Stone Preservation Project between 1993 and 2002. The project was carried out with the support of the German government, through the Technical Co-operation Agency (GTZ) as technical assistance to the DoA. A methodology for the conservation of the façades was developed and includes all the necessary documentation and studies, to be followed by testing of materials and the evaluation of data, planning for conservation, and finally the implementation of conservation measures. None of the previous studies, however, have addressed the landslide risk in the Siq except for the UNESCO proposed management plan of 1994 which recommended “consolidation of the rock walls where there is a danger of collapse”.

**Objective:**

- Monitoring of consolidation works on fractured rock in Sector 8
- Define rock fall risk in the Siq
- Set the standard for conducting larger risk management for the overall site
- Long-term safety for visitors to the site
- Continued protection of the Siq's monuments and hydraulic features
- Greater understanding of the risks posed in the remaining areas of the site, and methods for stabilization.

**Duration of the project:**

Dates: from August 2010

Duration: 5 months

**Expected results:**

<i>Expected results</i>	<i>Indicators</i>	<i>Means of verification</i>
Result 1: Installation of Monitoring system	Monitoring with remote sensing Gauges installed where possible	Results from gauges and remote sensing
Result 2: Visual assessment of the instability conditions of the Siq rock slopes and identification of the areas most threatened with collapse	Survey of the Siq and surrounding areas Visual assessment carried out	Report detailing recommendations for intervention
Result 3: Landslide hazard map with special attention to monuments prone to risk	Survey of the Siq and surrounding areas Areas of high risk identified	Map detailing areas most prone to risk
Result 4: Project document for the geology and monuments risk assessment in Petra	Meeting of experts to discuss means for larger assessment in Petra Collation of all documents resulting from Preliminary assessment	Project proposal

**Budget :**

<b>Total activity budget (in US\$):</b>	<b>67,579</b>
<b>National or other contributions (in US\$):</b> Ministry of Tourism & Antiquities – local staff The Department of Antiquities is seeking funding of 150,000 US\$ from the Ministry of Tourism for the stabilization of an unstable block in the Siq. They will not be able to sponsor an assessment study of the area to identify areas at risks where proper prevention measures shall be taken.	<b>In kind</b>
<b>Amount requested from the World Heritage Fund (in US\$):</b>	<b>67,579</b>
<b>1. Organization</b>	<b>8,000</b>
Co-ordination fees	4,000
Administrative costs	2,000
Meetings	2,000
<b>2. Personnel / consultancy services (fees)</b>	<b>34,100</b>
<u>International experts</u>	
Team leader/engineering geologist	5,750
Engineering geologist/environmental engineer	3,750
Interferometry specialist	3,750
<u>National experts</u>	
Team leader/conservation weathering specialist	4,750
Geologist	3,230
Photogrammetry specialist	3,230
Surveyor	2,800
Labourer	420

<u>Other</u>	
Ongoing training of DoA - DoA staff involvement	3,000
Ongoing training - PAP staff involvement	3,000
Labourer	420
<b>3. Travel</b>	<b>6,644</b>
International travel cost (US\$ 1,060 x 4 persons)	4,240
Terminal allowance (US\$ 152 x 2 persons)	304
Transportation one way Amman/Petra (US\$ 140 x 8 persons)	1,120
Rental of 4WD in Petra (US\$ 30 for 28 days)	840
Diesel for car in Petra (US\$ 5 for 28 days)	140
<b>4. Accommodation</b>	<b>14,750</b>
International team leader in Amman (US\$ 240 x 11 days)	2,640
International team (US\$ 240 x 6 days)	1,440
National team leader (US\$ 200 x 12 days)	2,400
National team (US\$ 200 x 9 days)	1,800
UNESCO staff (US\$ 200 x 3 days)	600
Local DoA, PNT (US\$ 200 x 9 days)	1,800
Locals in Petra (US\$ 110 x 37 days)	4,070
<b>5. Equipment</b>	<b>3,615</b>
Upgrade or rental of total station, surveying, equipment and others	2,120
Drill	495
Deformation gauges	1,000
<b>6. Evaluation</b>	<b>185</b>
Reports production	185
<b>7. Miscellaneous</b>	<b>285</b>
Visas (US\$ 15 x 4 persons)	60
Consumables	285

### Comments of the Advisory Bodies:

ICOMOS, 13 January 2010

The proposal to carry out a study which would stabilize the Siq in Petra seems focused on a problem of the highest priority, and critically important for continued use of the site. It appears also very carefully put together, and fully thought through in terms of scientific and professional organization and tasks proposed.

Principal questions which arise are linked to the proposed budget.

1. The first issue is that investment by the WH Committee is meant to be catalytic in nature and to inspire spending by others. This principle is not being observed here. However, the State Party IAR states:

The Department of Antiquities is seeking funding of 150,000 US\$ from the Ministry of Tourism for the stabilization of an unstable block in the Siq. They will not be able to sponsor an assessment study of the area to identify areas at risks where proper prevention measures shall be taken.

The State Party request for funds has not explained why “they will not be able to sponsor an assessment study”. As well, it should be noted that the sum requested is rather large in terms of the Committee’s available budget. Hence ICOMOS would

recommend that this budget request be supported if the funds to carry out the stabilization of the stone block in Siq are all found from other sources. In this way these funds could be seen as serving a catalytic function for the full project (study plus implementation).

2. The budget is not fully filled out – all of the “units” shown should be specified; without this information, it can not be fully understood what is being requested by the State Party.

3. The funds requested in the first section of the budget (Organization: administrative costs – 2,000., co-ordination fees – 4,000., meetings – 2,000. ) totaling \$8,000) are not explained or justified. As well, without specifying the “unit” being used for calculations, again, it is impossible to understand what the funds requested will be used for. If this is an “overhead” cost, it should not be supported by the WH Fund.

ICOMOS would be prepared to approve this request provided that:

- \* the budget is fully detailed

- \* explanations provided for the Organization costs demonstrate that these costs are tangible and incurred by the project, and not in-house overhead costs meant to be covered by the WH Fund

- \* the State Party is informed that if these costs are covered without a State Party contribution at this stage, then they should understand that any future requests for funding the cost of implementation of the work will not be considered by the WH Committee.

ICCROM

ICCROM comments will be presented orally to the World Heritage Committee.

#### **Comments of the Secretariat:**

The Advisory Bodies and the Secretariat agreed on 15 January 2010 that while the action might be urgent, this request could not be considered as Emergency assistance as defined in the *Operational Guidelines* (para. 241 of the *Operational Guidelines* states that Emergency assistance 'does not concern cases of damage or deterioration caused by gradual processes of decay, pollution or erosion') but rather that it qualified for Conservation & Management Assistance, because while the risks at the Siq were predictable, they did not threaten the Outstanding Universal Value of the property on the one hand and on the other, they come under a policy issue (visitors' safety) which is not an item that the WHF is meant to cover.

It was suggested, therefore, that the State Party could either reduce the amount of the request to US\$ 30,000 for approval by the Chairperson, or keep at its current level and go to the World Heritage Committee. The State Party chose to submit the request as it was for the decision of the World Heritage Committee.

The Secretariat supports the approval of this International Assistance Request and agrees that this work is essential and should be carried out as soon as possible.



**II. Draft Decision**

***Draft Decision: 9 EXT.COM 4.1***

*The World Heritage Committee,*

1. *Having examined document WHC-10/9 EXT.COM/4,*
2. *Decides to approve the following request:  
Jordan: Urgent Investigation of the Rock Stability in the Siq in Petra, for an amount of US\$ 67,579, under the category 'Conservation & Management'.*

**REQUEST N° 2**  
**Emergency Assistance**  
**Natural Heritage**  
**Africa**

**State Party:** MADAGASCAR

**Status of dues to the World Heritage Fund as at 31 December 2009:** US\$ 66 outstanding for 2008 and 2009 contributions. However, payment of contributions is not obligatory to benefit from Emergency Assistance (see paragraph 237 of the *Operational Guidelines*).

**Name of activity:** Humid Forests of Atsinanana

**Amount requested:** US\$ 99,900

**Previous contributions from the World Heritage Fund for this property/activity:** - Preparatory Assistance (2005), US\$ 25,000

**Background:**

Following the 2009 political crisis which was an unexpected event in Madagascar, two of the six national parks comprising the World Heritage property of Atsinanana have fallen victim to illicit logging of rosewood in 2009. This looting of natural resources has resulted in the loss of integrity for two of these protected areas as during the illicit exploitation of the rosewood a large number of people lived in these two parks setting up a temporary camp, poaching lemurs and other game. An evaluation of the true picture in these two protected areas is required to evaluate the situation regarding their Outstanding Universal Value.

The threat to the property originates from the poaching of lemurs by those exploiting the rosewood and endangering these species that comprise the Outstanding Universal Value of the property. Furthermore, the conveyance of the rosewood logs causes disturbance to the habitat in this property.

Three species of lemurs that make up the Outstanding Universal Value of the property have certainly been disturbed by human presence in 2009 : *Propithecus diadema candidus* (EN) and *Eulemur fulvus albifrons* (VU) in Marojejy National Park; *Varecia variegata rubra* (EN), in Masoala National Park.

The project will undertake the following actions to counter this threat:

- carry out a scientific study to evaluate the state of the Outstanding Universal Value of these two parks; this methodology shall then be applied to the other protected areas of the property;
- clear the two parks of all the people still present, notably in Masoala, by means of mixed control missions (Forest Service, Police Force, Army) and Park agents;
- strengthen control and surveillance during the three-month period of the project in the field with the local surveillance committees;
- strengthen awareness raising of all the concerned parties: local administrative authority, the support committee for the two parks that is unable to react efficiently due to lack of funds, the local community through the collective vigilance committee

(Andrimasompokonolona) during the period of the project. With the funds from the project each "fokotany" with an operational collective vigilance committee will have a conservation contract to implement;

- in the framework of this operation, make an appeal to all the services concerned to collaborate in halting this illicit exploitation;
- strengthen control of all transportation of rosewood.

**Objective:**

1. Better knowledge of the situation concerning the Outstanding Universal Value of these two parks, notably with regard to the lemurs and flora;
2. Exploitation of rosewood in the two parks definitively halted in 2010;
3. The level of pressure of lemur poaching in the two parks to be reduced to a minimum (less than 1 trap per year);
4. Awareness raising of the population around these two parks and increased authority for all responsible bodies in the region to counter the activities of any illegal operators;
5. The participation of the adjacent community in the surveillance and control of these two protected areas will become effective in 2010.

**Duration of the project:**

Dates: from August 2010

Duration: 3 months for the 2 sites

**Expected results:**

<i>Expected results</i>	<i>Indicators</i>	<i>Means of verification</i>
Result 1: State of the Outstanding Universal Value, notably the threatened lemurs	Field mission report	Final report of the survey group
Result 2: Zero exploitation of any type of wood in the 2 parks	Number of cut stumps in the year in the 2 parks	Surveillance report of the management team of these 2 parks
Result 3: The poaching of lemurs and the other degradations of these 2 parks are reduced to a minimum level	Annual number of traps found in the 2 parks	Annual technical status report of conservation in the 2 parks
Result 4: A number of operational surveillance committees shall be created by park sector	Number of operational surveillance committees in each community and "fokotany" around the 2 parks	Annual report on the 2 parks

**Budget :**

<b>Total activity budget (in US\$):</b>	<b>99,900</b>
<b>National or other contributions (in US\$):</b> State Party funds for this project amount to US\$ 47,500 to cover the salaries of personnel participating in the operation (Madagascar National Parks staff, Environment and Forest Service agents, Police Force agents, Army); these funds will be made available at the time of receipt of funds requested under international assistance.  Madagascar National Parks shall provide the rolling stock (cars and motobikes for the 2 parks, a boat for Masoala National Park) as well as the Co-ordination Bureau at Antananarivo (Madagascar National Parks Headquarters, Maroantsetra for Masoala and Andapa for Marojejy)	<b>47,500</b>
<b>Amount requested from the World Heritage Fund (in US\$):</b>	<b>99,900</b>
<b>1. National Expert</b>  Production of maps updated from satellite photographs and scientific evaluation of the property at both parks USD 1,250 / week for 12 weeks  Implementation of a field inspection mission USD 1,670 / week for 12 weeks	<b>35,040</b>  15,000  20,040
<b>2. Others</b>  Ensure the inspection, surveillance and repression missions by a mixed brigade USD 1,650 / week for 12 weeks  Raise awareness, encourage and support the collective vigilance committee in each sector USD 835 / week for 12 weeks  Strengthen road controls USD 585 / week for 12 weeks  Undertake a mission to appeal to local administrative authorities USD 415 / week for 12 weeks  Implement alternative High Labour Intensive (HIMO) micro-projects USD 1,920 / week for 12 weeks	<b>64,860</b>  19,800  10,020  7,020  4,980  23,040

**Comments of the Advisory Bodies:**

IUCN (10 February 2010)

**POSITIVE in principle; need for clarification as detailed below**

The project is proposed in response to illegal logging, in particular of rosewood, in two components (Marojejy and Masoala National Parks) of this serial property

comprised of six protected areas. At the time of inscription (31 COM 8B.9) logging was identified as one major threat. The latest state of conservation report and the corresponding Committee Decision (33 COM 7B.147) point out very serious and acute concerns in the above two components, including logging. Consequently, there is a very strong case for immediate support and action.

It is important to emphasize that the previous reports refer to a broad range of threats in this serial property, including encroachment, fire, hunting and poaching, artisanal mining and illegal logging. The description of the threat in the proposal has a focus on rosewood logging which does not seem to do justice to the complexity of the identified threats to the property.

The project is a well-designed contribution to start addressing the problems. While much can be achieved, the duration of only three months is very limited. Therefore, it seems helpful to incorporate a more forward-looking element into the current proposal. In addition to the generation of information to assess the current situation and plausible short-term activities, the elaboration of a clearly defined and realistic follow-up strategy and plan should be an integral element of the project. This could for example include the development of alternative income options for residents currently involved in illegal activities. All longer term efforts require financing, which means that the project should not only identify priorities for future action but also their funding options and sources. Ensuring that the outputs of the project feed into the future management and its financing would greatly improve the value of the project. This seems feasible and fundable within the suggested budget.

A minor suggestion, which has no implications whatsoever for this IUCN evaluation, would be to reflect and communicate the objective and character of the project in the title. The current project title is simply the name of the property.

#### **Comments of the Secretariat :**

The Secretariat first notes that this request does not fulfil the requirements and criteria for Emergency Assistance as set out in the *Operational Guidelines* and therefore has to be considered under Conservation & Management assistance. The payment of contributions is mandatory for this type of assistance, but the State party has not paid all its dues to the World Heritage Fund as of 28 May 2010.

The Secretariat fully agrees with the opinion of IUCN that the threats this request proposes to address (logging activities) are urgent threats. However, the Secretariat notes that this wave of illegal logging, according to the reports received, has been to a large extent created by a number of decisions taken by the Government which have allowed the export of precious hardwoods, as detailed in the State of Conservation report. At the time of the submission of this request, these measures were still in place and only recently, the Government took some measures to stop at least the export of rosewood. The effectiveness of these new measures needs to be evaluated.

The Secretariat in principle supports the request but considers more details should be provided on the planned activities and proposed budget as it is unclear what it will concretely pay for. The State Party should explain how it plans to undertake the planned assessment and how it plans to address the governance issues related to the illegal logging activities. The request currently seems to give priority to repression missions, without providing details on how these patrols will be organised, how much

staff will be involved and it does not indicate how local communities will be involved in these control and surveillance patrols.

The Secretariat is also concerned that the short time frame of the proposed activities may fail to address the issue in a sustainable way as the request does not show how these short term measures are part of a larger overall strategy to address the threats. In that respect the Secretariat believes the proposed activities need to be integrated in the global action plan which is currently being prepared between the State Party's technical departments and the major donors involved in funding activities related to environment. Finally, as a result of the political crisis and the restriction imposed by the UN System on cooperation with the current Government, it is important that the modalities for the implementation of the activities are clarified.

A letter was sent to the State Party on 22 April 2010, asking for the revision of the international assistance request, based on the given comments. As of 28 May 2010, such revised request had not been yet submitted. Therefore, it is recommended that the examination of this request be postponed until the 34th session of the World Heritage Committee (Brasilia, 25 July – 3 August 2010).

## II. Draft Decision

### ***Draft Decision: 9 EXT.COM 4.2***

*The World Heritage Committee,*

1. Having examined document WHC-10/9 EXT.COM/4,
2. Decides to postpone the examination of the following request until a revised version is submitted:  
*Madagascar : Humid Forests of Atsinanana*