



Angkor World Heritage site achieves ISO 14001 certification

The historic World Heritage site of Angkor has achieved a major objective – ISO 14001 certification of its ambitious environmental management programme. The success has been due to collaboration between the Cambodian Government and many local stakeholders – including school children, monks, villagers, park vendors, tourist guides and local heritage police – to preserve the “Crown Jewel of Cambodia” for future generations.



by **Tan Sambon**

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The Archaeological Park of Angkor, registered on the World Heritage List in 1992, is famous as the site of numerous temples of which the best known are Angkor Wat and Bayon. This area of great natural and historic beauty is also home to many local villagers, and has become a major — and endangered — attraction for thousands of national and international tourists.

Angkor has been under the protection and management of the Cambodian Government’s APSARA Authority (Authority for the Protection and Management of Angkor and the Region of Siem Reap) since 1995.

In May 2003 APSARA decided on an ISO 14001 environmental management system (EMS) implementation programme



(From left to right) **Ueda Matahiro**, President of the Japan Quality Assurance Organization (JQA) presenting the ISO 14001 certificate to **Bun Narith**, Director General of APSARA.

involving many stakeholders, including its own management and staff, provincial authorities, local police, park vendors, monks, villagers and school-children.

This impressive collaborative effort was the subject of two previous articles — see “EMS to help protect Angkor — ‘Crown Jewel’ of Cambodia”, *ISO Management Systems*

September-October 2004, and “Cambodian school children put EMS basics into practice to preserve Angkor site”, *ISO Management Systems* November-December 2005.

Celebrating a big success

The endeavours of all stakeholders were finally rewarded with the successful ISO 14001 certification of the Angkor Park earlier this year, followed by a ceremony of congratulation to all involved, held in front of the Temple of Angkor Wat in the presence of high ranking government and APSARA officials, and representatives of all interested parties.



APSARA Deputy Director **Tan Sambon** speaking at the Congratulation Ceremony on 4 May, 2006, to celebrate the ISO 14001 certification of Angkor’s EMS, attended by the High Representative of Deputy Prime Minister Sok An, and representatives of all stakeholders in Cambodia’s innovative environmental project, including APSARA’s management and staff, provincial authorities, local police, park vendors, monks, villagers and school children.



Combining ancient and modern: Cambodia’s cultural traditions blended with Angkor’s new ISO 14001-based EMS at the Congratulation Ceremony which took place in front of the historic Angkor Wat Temple.



At the ISO 14001 certificate award ceremony were, (left to right) **Junji Himeno**, Director of the Japanese Promotion Centre of the Japan Quality Assurance Organization (JQA), **Ueda Matahiro**, President of JQA, **Bun Narith**, Director General of APSARA, and **Tan Sambon**, Environmental Management Representative and Deputy Director General, APSARA.

This happy occasion underlined the organic nature of the programme and the contributions of so many people aimed at conserving and protecting Angkor’s natural resources, restoring its his-

torical structures, and promoting the sacred region as an attractive tourist destination – while balancing conservation with sustainable development.

Achievements and initiatives

Following are highlights of the key achievements and initiatives of this remarkable EMS project, under the responsibilities of each APSARA department, as part of the overall EMS implementation plan:

Department of Administration, Personnel, Finance and Public Relations

- Site environmental policy posters in every office and distribute environmental policy cards to all staff.

The success has been due to collaboration between the Cambodian Government and many local stakeholders

- Provide annual environmental education for all APSARA staff.
- Conduct a waste collection campaign on public streets.
- Encourage savings in office materials and equipment.

Department of Monuments and Archaeology I and II

- Provide environmental education for Angkor’s temple guardsmen and vendors.
- Collect refuse daily throughout the Angkor site.
- Pump water from Siem Reap River into Angkor Wat moat and Srah Srang pond, and clear vegetation.
- Prevent temple structures from deterioration by continually cutting back intrusive vegetation.
- Plant and irrigate grass surrounding Angkor Wat.
- Distribute leaflets on house construction principles in protected zones to local authorities and residents.

- Issue house construction permits and control the construction process.



Local villagers clear weeds from the Angkor Wat moat for APSARA’s Department of Monuments and Archaeology, as part of the organization’s ambitious EMS programme.

Department of Urban Planning

- Plant grass, flowers and trees on the Siem Reap River bank to keep the view clean and green.
- Plant trees along streets and the old market of Siem Reap town.
- Conduct a survey of the town’s master drainage and water supply plan.

Department of Angkor Tourism Development

- Provide environmental education to local tourist guides, high school students and private universities.
- Broadcast an environmental campaign on TV and radio to visitors during main events.

Department of Demography and Development

- Educate Pradak villagers on refuse management and compost production.
- Educate local Kravan and Srah Srang primary school-children on ISO 14001 principles.

Department of Water and Forests

- Conduct a survey of tree species, seed bed preparation and nurseries to sustain local forests.
- Maintain and treat diseased trees that have been tapped for resin.
- Attach 1535 scientific name labels on trees in the Angkor Park, and use natural soil enrichment resources such as tree leaf compost.
- Create a botanical garden.
- Replant 6854 trees in the park and distribute 17 000 seedlings to residents for local reforestation.
- Survey air and water quality, and measure ground water levels twice per year.
- Improve the existing irrigation and canal system for agricultural use.



Japanese support

The stimulus for the Angkor ISO 14001 project came from Japan and several Japanese organizations have been providing support for its implementation.

The Cambodian authorities were introduced to the EMS concept and ISO 14001 by Professor Yoshiaki Ishizawa, President of Sophia University, Japan (www.sophia.ac.jp), one of the world's foremost historical specialists on Angkor and head of the first UNESCO Angkor research team. He also leads the Sophia University International Angkor Mission

Environmental education, EMS guidance, EMS training support and technical assistance for environmental surveys has been provided by the following organizations:

- **The Quality Assurance Institute Inc. (QAI - www.jqai.jp)** provides support for EMS training.
- **The Japan Quality Assurance Organization (JQA - www.jqa.jp)** provides technical support to help the APSARA Authority conduct surveys on water, air, and waste management, and educate school children on environmental issues.
- **The International Standards Research Institute, Inc. (www.isri.co.jp)** provides environmental education and guidance in building and operating an EMS.

Environmental education of stakeholders plays a key role in Angkor's ISO 14001-certified EMS. Here, local residents/temple vendors/local tourist guides/heritage police are taught to be more environmentally aware by trained APSARA staff.



Intervention Unit

- Provide annual environmental education to heritage and tourism police working in the park.
- Stop illegal logging, quarrying and unauthorized construction work in protected zones.
- Prevent forest fires and respond to emergency fire situations.

EMS Unit (which acts as the project secretariat)

- Provide weekly EMS training for the promotion team.
- Issue a bimonthly EMS newsletter.
- Organize internal auditor training.
- Check programme performance once per month.
- Monitor the EMS process.
- Support the environmental activities of each department.

Foundation for the future

Having come this far in our EMS journey, culminating in ISO 14001 certification of the Angkor Park, we have plans in place to ensure that progress is maintained, particularly in raising the environmental awareness of all those involved in living and working around the site, and in upgrading the EMS. Following are examples of our continuing efforts:

Education and awareness

Providing environmental education and raising awareness is one of our highest priorities. And making people realize the benefits of protecting the unique Angkor world cultural heritage site also makes proper EMS implementation easier.

With this aim, APSARA will further upgrade training programmes for its staff, especially for secretariat members,



As part of its programme of ISO 14001-certified environmental initiatives, APSARA's Department of Water and Forests monitors and treats diseased trees in the Angkor Park.

promotion leaders and persons in charge of each environmental management programme. This will enable them to cascade environmental education to schoolchildren, villagers and interested parties in the region. Our staff will also play a core role in leading EMS development in the region and in Cambodia as whole.

'Keep our home and village clean'

Children at the two local Kravan and Srah Srang primary schools have already progressed through two steps of a three-year environmental education programme which follows them through their school grades.

In Step 3 which took place in July 2006, grade 6 children participated in the *Keep our Home and Village*

Clean programme at the Srah Srang and Kravan villages. Having already had training in the basics of the Plan-Do-Check-Act cycle over the past two years, the pupils are now involving their families and villages in waste prevention and collection strategies, using the EMS methods, knowledge, and experience gained.

Educational programmes have also been designed and for temporary workers by the respective APSARA departments. The aim is to ensure that all participants support environmental protection and pollution prevention for the benefit of future generations.

The environmental management programme

To make the EMS more effective and beneficial, APSARA continues to add environmental objectives and targets to maintain the excellent momentum already achieved. To strengthen internal audit capabilities, we are providing further training to the existing team of 15 internal auditors.

