



COMITE INTERNATIONAL DE COORDINATION POUR LA SAUVEGARDE ET LE DEVELOPPEMENT DU SITE HISTORIQUE D'ANGKOR
INTERNATIONAL CO-ORDINATING COMMITTEE FOR THE SAFEGUARDING AND DEVELOPMENT OF THE HISTORIC SITE OF ANGKOR

PLENARY SESSION

Twenty-third Plenary Session

Co-chaired by

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Embassy of France

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NOTICE: The languages used during the sessions of the ICC are English, French and Khmer. In the English language record of the discussions, all material spoken originally in French or Khmer is therefore a translation. Presentations and comments made originally in English are indicated by ^[OrigE] at the beginning of the contribution. The insertion ^[OrigK] shows that the original statement was in Khmer.

REPORT OF THE PRESENTATIONS

I- OPENING SESSION

I.1 Statement by the Co-chairman for Japan, His Excellency Mr. Hidehisa Horinouchi, Ambassador of Japan

[*OrigE*] “Your Excellency Dr. Phoeurng Sackona, Minister of Culture and Fine Arts, Your Excellency Mr. Yim Nolla, Secretary of State of the Council of Ministers, Your Excellency Mr. Kol Bunly, High Representative of His Majesty King Norodom Sihamoni, Ms. Anne Lemaistre, Representative of the UNESCO Phnom Penh office, Excellencies, Colleagues, Ladies and Gentlemen,

It is my great pleasure to be here today to preside for the first time as co-chair over the International Coordinating Committee’s 23rd Plenary Session.

First of all, on behalf of all the attendees present here today, I would like to express my sincere appreciation to His Excellency Dr. Sok An and the royal government of Cambodia for their strong commitment to the ICC process.

I also wish to express my heartfelt thanks to all the teams and individuals taking part in this session, many of whom have contributed to the ICC’s activities since its very inception. My gratitude also goes to H.E. Mr. Jean-Claude Poinboeuf, the Ambassador of France, for acting as my co-chairperson.

As you all know, the experiences and good practices that the ICC-Angkor has acquired over the last 20 years deserve to be recognised as the successful model they are providing for others. The ICC-Angkor recommendations, adopted with the assistance of the *ad hoc* group of experts, need to be duly respected, followed up and implemented effectively.

The discussion theme selected for this plenary session is the ‘New Ticketing System’. I am looking forward to clarification from the royal government on the ticketing system and its perspective on the long-term financial plan for the conservation activities and sustainable development of the Angkor site.

Before concluding my remarks, I would like to express my sincere appreciation to the APSARA Authority for the pivotal and increasingly important role it plays in the protection, restoration and development of the Angkor heritage sites. I would also like to thank the donor countries, the international organisations and technical teams who are also supporting the protection and restoration of the Angkor temples. I am grateful to the *ad hoc* group of experts for their hard work and valuable contributions. Finally, I thank the ICC secretariat of UNESCO, including the representative of the Phnom Penh office, Ms. Lemaistre, for helping with all the arrangements for this session.

I sincerely hope we will have fruitful discussions here today.

Thank you for your attention.”

Comment from the Co-chairman for Japan: ^[OrigE] “I would like to commence with the first part of this session, the various activity reports, with the first presentation by Mr. Beschaouch, the Permanent Scientific Secretary, who will present the activity report”.

II- ACTIVITY REPORTS

II.1 ICC-Angkor Scientific Standing Secretariat activity report by Professor Azedine Beschaouch, ICC-Angkor Scientific Secretary

“Distinguished Co-chairs,
Your Excellency Minister of Culture,
Excellencies,
Ladies and Gentlemen,
Colleagues,

First, I am pleased to announce that our young colleague, Mr. Nou Niran is now firmly settled in his function and that the UNESCO Phnom Penh-based Standing Secretariat works at full speed. I am delighted because he has successfully set up very good relationships with the French and Japanese embassies, the co-chairs of the Secretariat. This is highly satisfactory and I believe that, from now on, you will have smooth relationships with the Secretariat.

Another thing concerns the several meetings organised to which I was personally invited by His Excellency Dr Sum Map, the APSARA National Authority Director General. The Secretariat’s role consists in keeping seamless contact with the field and foremost the APSARA National Authority. Let me add that Her Excellency Dr Chau Sun Kérya has been less active in the past months, as she was finalising her PhD; although to state that Ms. Kérya was less active is rather far from the truth. She is now fully back on board assuming her role of relay between the APSARA National Authority, which she represents, and the Standing Secretariat.

Of course, relationships are smooth with the *ad hoc* experts; this is also one of our roles. Co-chairs, regarding the experts, Mr. Mounir Bouchenaki could not attend today, as his wife recently passed away. He told us that will be back among us at the next session, so we only have two *ad hoc* experts in conservation: Messrs. Lablaude and Hidaka, who have managed the workload of four people and we would like to thank them for this. We know how hard they have worked and how brave and full of beans they have been in the field, although to have a doubled workload was a hard task; may they receive my apologies for this.

In agreement with the APSARA National Authority chairman, His Excellency Dr. Sok An, and the co-chairs, we will find a replacement for Giorgio Croci who, sadly, for health reason can no longer be one of our experts. We will put forward some names and will ask for your feedback.

Finally, I have been away from the field in the past two or three months and have restarted going to sites, as it is part of our role as Secretariat in our relationships with the

APSARA National Authority, the international teams and the ICC. I can assure you that this will be done on my behalf with much enjoyment as it always has been, in association with the APSARA National Authority and the co-chairmanship.

Thank you.”

Comment from the Co-chairman for Japan: ^[OrigE] “Thank you very much. Next is the activity report of the APSARA National Authority, which will be presented by His Excellency Dr Sum Map.”

II.2 APSARA National Authority general activity report, by His Excellency Dr. Sum Map, Director General

“Distinguished Co-chairs,
Your Excellency Minister of Culture and Fine Arts,
Excellency, Deputy Minister of the State Administration of Cultural Heritage of China,
Excellency, Director General of French Heritage,
Experts,
Ladies and Gentlemen,

It is a great pleasure to welcome our guests of honour, international delegations, experts and participants who are attending this 23rd plenary session of the ICC-Angkor.

I was appointed APSARA National Authority Director General in August of 2015, and my collaborators and I have had sufficient time to study the different projects and monitor international teams’ worksites. Let me briefly introduce our 2016 activities.

On the national level, the APSARA National Authority organised several meetings with the local authorities with regard to the Cultural and Tourism City lands. *Samdech Techo* Hun Sen, the Prime Minister, decided to down-size the overall area of the city to 1,000 hectares to meet the needs of the local people and solve some land disputes. Consequently, land titles have been handed over to locals who have lived on these lands for many years and can justify extending their houses located in this area.

Meetings were also organised within the APSARA National Authority in order to re-structure some departments and strengthen their efficiency on site. Thus, the head of the Department of Water Management, His Excellency Dr. Hang Peou, Deputy Director General, now manages the Department of Agriculture and Community and the Department of Forest Management, Cultural landscape and Environment.

We also set up meetings between the provincial authorities and the APSARA National Authority in order to take measures against illegal activities with regard to land sales and deforestation in the Angkor Park’s protected areas I and II. Awareness-raising activities with the communities have continued in the Angkor Park. Seven working groups have regularly held meetings with people living in protected areas to improve co-operation between them and our officers for better heritage protection.

With regard to conservation activities, I visited the restoration and conservation work sites in Angkor with a view to better understanding the work of the Cambodian specialists of the Department of Conservation and Rescue Archaeology and improve the efficiency of the monitoring of the works.

With regard to water, the Department of Water Management carried out major works to improve drainage at the entrance of Banteay Srei. Water flow has improved in the monsoon and it is safe to walk around the temple.

To the north of Angkor Thom, a culvert has been built to improve the connection with Tonle Snougt, now being fitted with two sluice gates for future refill of the pond west of Preah Khan.

To the northeast is a major water inlet, a hydraulic structure built to connect the north and south moats, with a smaller inlet to the east facilitating water control flowing to the moats of Chau Srei Vibol Temple. A spillway located south of the temple directs the overflow to the irrigation canals of rice fields owned by local villagers.

Finally: A water inlet has been built in Kiri Minoun village in Puork district, the Kok Srok village's ancient pond in Bankong district (130 x 90 m) has been dredged and the lat-erite road fixed over a length of 625 metres.

The Department also repaired 600 metres of the west dike and 2,200 metres of the road along the West Baray.

With regard to tourism management and the implementation of the TMP (Tourism Management Plan) things have developed fast, with information and road signs assessed and improved. A working group has been established and the ICC Angkor *ad hoc* experts have expressed their satisfaction with the outcomes and gave further advice during their visit. Yesterday, His Excellency Sok Sangvar presented in detail the implementation of the 26th Technical Session recommendations on tourism development.

The implementations of the recommendations of the 26th Technical Session were discussed during meetings and followed up by the different APSARA National Authority departments liaising with the Standing Secretariat of the ICC. The *ad hoc* experts in conservation and sustainable development have been able to control and evaluate ongoing works implementing the recommendations.

Finally, the number of international visitors buying an entry ticket to the Angkor site in 2016 is 4.63 per cent up year on year, or 2,197,254 paying visitors.

With regard to international activities: We have consolidated international co-operation in several conservation fields for the development of Angkor. We signed a memorandum of understanding with the National Institute of Anthropology and History of Mexico with a view to sharing our technical knowledge in conservation of monuments and archaeological research.

Co-operation has also been tightened with Sophia and Waseda universities and Komatsu, all from Japan. A memorandum of understanding was signed between the Huang Shan World Heritage site in China and Angkor.

In the research field, a code of conduct for researchers has been drafted in cooperation with all stakeholders and we hope for its adoption during this session, in three languages; Khmer, English and French.

To conclude, I would like to express my sincere thanks to the American government that outsourced an English teacher to improve the language skills of the APSARA National Authority staff. China has also complimentarily outsourced a teacher for those who would like to learn Chinese and the French government has started the same process with French. I wish that the Japanese government will also follow suit to encourage the learning Japanese among our staff.

Co-chairs, Excellencies, Ladies and Gentlemen I would like to wish you a prosperous 2017 and fruitful co-operation.

I thank you for your kind attention.”

Comment from the Co-chairman for Japan: ^[OrigE] “Thank you very much Dr. Sum Map. This weekend is Chinese New Year and the start of a seven-day holiday in the mainland. This means that we expect the arrival of tourists from China, Honk Kong, Taiwan and Macau. We have here today Mr. Liu Shuguang, who is the Deputy Administrator of the State Administration of Cultural Heritage of China. He would like to say a few words. ”

II.3 Statement by Mr. Liu Shuguang, Deputy Administrator of the State Administration of Cultural Heritage of China

^[OrigE] “Distinguished Chairman,
Distinguished colleagues,

As you know, the Chinese government was one of the first members of the ICC-Angkor; we have done a lot of things together with the government of Cambodia and other colleagues since 1997. The Chinese government and Chinese experts have always engaged in research, experiment, conservation and restoration works with great passion and faith for protecting the common cultural heritage of human beings.

This has been especially true since 2013, when our President Xi Jinping exchanged opinions on conservation works with King Norodom Sihamoni and Prime Minister Hun Sen on many occasions. President Xi Jinping vowed that China would continue carry out relevant work here. It proposed to continue conservation and restoration work once work at Ta Keo has been completed. We discussed with the APSARA National Authority yesterday and proposed to Cambodia to organize the next phase of work in the Royal Palace. We may also start to do something in Beng Mealea from the second term this year.

Since China chairs the co-presidency of the ICC-Preah Vihear, which is a very important cultural heritage, it is a great honour for us to do something in that temple. Yesterday, I told Dr. Sum Map that we want to do something more and better. It means we need to learn more and we have to enhance the international co-operation together with all the countries and experts. We are trying to establish direct networks and co-operation with other international organisations working in Angkor.

Last year, in Paris I signed an agreement with the EFEO on the scientific research between the Chinese Academy of Cultural Heritage and the EFEO. The day before yesterday, CSA and EFEO organised their first joint conference; we discussed on how to share information and experience and how to work together, since we are eager to implement more work and acquire more knowledge in the future.

In the past twenty years, we have learnt a lot about your history, culture and civilization. Let me express our gratitude to you.

As we all know, the protection of cultural heritage requires great understanding closely related to the sustainable development of human beings. It is our common responsibility to protect cultural heritage, which conveys a rich message for the development of human beings. China would like to exchange experiences and seek for a brighter future with experts from the government of Cambodia, UNESCO and the ICC and take the international action on protection of the historic site of Angkor and Preah Vihear to a new stage.

Thank you very much. The day after tomorrow is our Chinese New Year's Eve, so I would like to wish you Happy New Year and good luck'."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much Mr. Liu Shuguang. Let us move on to the second part of this plenary session on New Projects on Conservation, Research and Archaeology. The first presentation is on the launching of the electronic programme of the Khmer inscriptions corpus and is presented by Dr Julia Estève, researcher, and Dr Dominique Soutif, lecturer at the EFEO."

III- NEW PROJECTS – CONSERVATION, RESEARCH AND ARCHAEOLOGY

III.1 Launch of the electronic inventory of the Corpus of the Khmer Inscriptions programme by Dr. Julia Estève, Researcher and Dr. Dominique Soutif, lecturer, EFEO

"Excellencies,
Ladies and Gentlemen,

I am afraid to say that this is not actually a new project. In 2002, a workshop was organized at the Siem Reap École française d'Extrême-Orient (EFEO, French School of Asian Studies) which was aimed at taking stock on the inventory of inscriptions in Cambodia.

^[slide] Organised in co-operation with the Ministry of Culture and Fine Arts of Cambodia, the APSARA National Authority and the EFEO, we also enjoyed the attendance of representatives of other institutions (Royal University of Fine Arts in Phnom Penh and the Silpakorn University, Bangkok). It was pointed out that the inventory of 1005 K numbers published by Goerge Coëdès in the 1960's and populated by Claude Jacques with 45 numbers in 1971, was incomplete and needed many corrections.

^[slide] Since the 1960s, adding 250 newly discovered texts, many ancient inscriptions of the inventory had to be entirely reworked, as they were badly documented or hard to locate. Time-consuming, careful checks were needed at the time before being able to judge whether a text was really unprecedented or not.

^[slide] In 2004, the Khmer Inscriptions Corpus (Corpus des inscriptions khmères, CIK), programme began, spearheaded by Gerdi Gerschheimer (EPHE; Gerschheimer 2003-2004). It brings together members of the EFEO, of the École pratique des hautes études (EPHE) and several collaborators from the USA to Australia, Thailand and of course Cambodia.

The long-term objective is to read, re-read and publish texts that represent the only written sources from the pre-Angkorian and Angkorian eras and also to make them easily available for study. To this end the programme is based on three preliminary essential goals: To collect sufficient graphic documents (in this picture an acrobatic rubbing carried out by Jean-Baptiste Chevance's team on Kulen); to boost the study of these texts by put-

ting together a comprehensive electronic corpus and finally, of course, to continue the inventory of the Khmer inscriptions based on George Cœdès model.

[slide] Today, I would like to focus briefly on this last goal. Obviously, the objective is not to herald the completion of the inventory, as by its nature it is never-ending. The discovery of new inscriptions means that the corpus will be regularly populated with new inscriptions and that other matters like the relocation or disappearance of some items will demand— probably too often — that corrections be made.

I would also not dare to assert that the old data have all been verified. The volume of information to be collected and processed is enormous. This is the largest epigraphic corpus in Southeast Asia and there is, let's be honest, a lot of work to be done.

[slide] Despite the huge necessary amount of corrections, the time has come to make available this inventory, now counting 1,350 entries, to all researchers. Still waiting for the development of a database to post online all inscription-related data, a page will be posted in a few days on the EFEO website at this address on screen, where you will be able to download a temporary version of the regularly updated inventory.

[slide] The available information in the table matches that of Volume VIII of George Cœdès's *Inscriptions du Cambodge*, although there are some differences that will be developed and explained in a 'manual' available on the same page.

[slide] Other inscription-related documents will gradually be posted on this page, starting with: Paleographic tables (here ancient Cambodia consoles, although it looks small on the screen): [slide] an index card per subject on the materials; this one was done by Christian Fischer, who has successfully researched Angkorian stoneware and is very interested in inscriptions in Cambodia; [slide] maps; [slide] a bibliography; tables of photographic documents or of digitalised or not rubbings, all available for browsing.

Adding to regular updates on the discovery or publication of an inscription, there is also a temporary shared table where you can suggest potential corrections or amendments following a visit to an excavation or museum storage space, or during your restoration, excavation or exploration works. Please do not hesitate to flag your corrections or amendments, as this approach is essential in improving this inventory.

[slide] Finally, with regard to the discovery of new inscriptions, let me recall that the *Corpus des inscriptions khmères programme* always has the possibility of allocating new K numbers, as long as the necessary reading documentation and data have been sent to secure the novelty of the inscription. In order to remind you of the type of data that we would like to collect, inventory form templates in French, English and Khmer will also be available on the webpage. We do not require you to fill them in entirely; this is more like a checklist for the recording of the inscription. For example, the form asks for the weight of the inscriptions and obviously we will not ask researchers to weigh the Ta Prohm or Pre Rup steles, the aim is to remind researchers that when they discover an inscribed vase that this can be very relevant data, as is the case with this vase which inscriptions mention the weight.

[slide] To conclude: Let me thank all of those here who have already brought their input to the *Corpus des inscriptions khmères programme*. Many researchers and especially young Khmer researchers have regularly sent us data and documents and rubbing workshops have already been organised in collaboration with the APSARA National Authority here at Prasat Khna, or with the Ministry of Culture in Kratie, Stung Treng or Kampong Cham. I hope that we will have the opportunity to repeat these sharing and exchange experiences.

I thank you for your attention."

III.2 Preliminary results of the 2016 excavation campaign of the Yaçodharâçrama Research Programme by Mr. Chea Socheat, APSARA National Authority, Dr. Julia Estève, researcher, Dr. Dominique Soutif, lecturer, EFEO, and Mr. Edward Swenson, archaeologist, University of Toronto

Mr. Dominique Soutif:

"Excellencies,
Ladies and Gentlemen,

[slide] Once again, this is not a new project, as it started back in 2011. The Yaçodharâçrama research programme is the outcome of an international collaboration that has brought together, for the past six years, researchers from various fields of expertise. A total of four institutes took part in the 2016 excavation season: The EFEO, Mahidol University, Toronto University and of course the APSARA National Authority. The Ministry of Foreign Affairs of France, through its excavation Commission, has supported this project.

This year works focused on *Prasat* Komnap South, the vishnuite âçrama of Angkor which is the best preserved of the monasteries founded by Yacovarman I in his capital in the late 9th century.

[slide] The excavation campaign extended from the 4th until the 25th of February, 2016, made up of four archaeologists, one trainee and 25 workers. The team dedicated two days of mechanical digging to open and fill the largest trenches.

[slide] For the second year in a row, we only worked on researching the east platform of *Prasat* South Komnap, which we believed was dedicated to the âçrama's ritual activities, whereas the central and western areas were respectively habitat and market gardening areas.

[slide] This platform is made up of two buildings consisting of long-lasting materials which are found in all Angkorian âçrama, as we had previously evidenced. The platform includes a stele and a laterite-built 25-metre long hall covered with tiles. Our goal was to check that other facilities existed around these two buildings with a view to better understand the occupation of this 150 metre-long platform.

[slide] A georadar study already hinted at the existence of linear structures to the south of the long hall. They seemed to have demarcated wide, opened buildings with areas to fit postholes supporting tile roofing. In 2015, the excavation season revealed the remains of several long, rectangular buildings to the east, north and west of the durable structures, to form a kind of protogallery made up of unprecedented types of buildings in Cambodian architecture. The fact that there exist other similar constructions led us to suggest the existence of a second protogallery to the outside or of other annex buildings located outside a restricted area surrounding the two durable buildings. Note that the same construction technique was also used for the building located at the centre of the east dike that we consider as one of the main entrances to the âçrama.

[slide] We hoped in 2016 to further research the infrastructures located to the east of the durable buildings where, in theory, was located the restricted area giving access to the sacred area.

[slide] We dug a total area of 230 m², or seven trenches. The largest trench confirmed the existence of a rectangular building to the east of the durable buildings with the same features as those already unearthed to the west, south and north in 2014 and 2015, alt-

though with more detail in the construction than those facing other directions. It revealed two courses of particularly large and joining blocks compared to a simple built course. One can posit that this additional care aimed at highlighting the value of the east-facing side of the protogallery, the usually privileged entrance to any Khmer sanctuary.

[slide] Another major point is the breaking of the alignment at the level of the stele aedicule and that another alignment was built facing east and could be interpreted as an *avant-corps* of the main entrance leading to the sacred area through the protogallery. This means that the main access to the sacred area led to the aedicule and not the religious building. This area of the building was excavated and provided a large amount of tiles, evidence of two construction or renovation stages for this building. A third trench was dug and established the connection between this alignment and the stele aedicule. Although this area has been looted several times and excavated by George Trouvé in 1932, we have still been able to confirm that these buildings were built at the same time and erected on the same foundation layer. [slide] This is the base of the stele aedicule.

[slide] Two additional trenches were dug to check the existence of a second protogallery located slightly to the east, where in 2015 we had identified two construction stages of a building on a very small perimeter. Although this year's excavation has confirmed the presence of several buildings and of two construction stages, it also showed that looting was more systematic on these secondary buildings and prevented us from drawing plans. We can also hope that the rare charcoals and ceramic samples collected in this sacred area will help us to precise the dating of the second phase of construction or renovation.

[slide] Finally, the last two trenches allowed us to check the presence of a corner building in the first gallery. Once again, past looting hindered certainties but we identified the existence of another large building confirming the complexity of the lay-out of the âçrama's sacred platform.

[slide] Despite the past plunder, the data collected have given us a good understanding of this area. We believe that new excavations would not yield more data unless they were to entirely clear out the platform.

The last excavation season is planned for 2017 in Angkor and will focus on the following items: The main entrance to South Komnap at the level of the south dike of the East Baray; the existence of a protogallery at North *Prasat* Komnap and Prei *Prasat*; the type of occupation of the east portion of South *Prasat* Komnap will be later on further detailed thanks to the coring of sediments that will be analysed within the framework of an overall geomorphologic study that will begin this year.

I thank you for your attention."

III.3 Casting for the King: Archaeometallurgical study of the Royal Palace bronze workshop of Angkor Thom (APSARA/EFEO, 2016-2019) by Mr. Brice Vincent, lecturer, École française d'Extrême-Orient (EFEO)

"Distinguished Co-chairmen,
Excellencies,
Ladies and Gentlemen,

The Royal Palace bronze workshop of Angkor Thom was discovered in 2012 and later researched within the framework of the Sculpture Workshops of Angkor Project spearheaded by Martin Polkinghorne, an Australian archaeologist.

[slide] Let me remind you that this is the first ancient bronze workshop found in Cambodia and Southeast Asia. The fact that it is located some dozen metres away from the Royal Palace enclosure highlights the importance of this royal casting site, which is an added bonus for the value of this unprecedented site.

A summary of the first findings of the 2012-2013 excavation season has recently been chronicled in the French School of Asian Studies Bulletin (EFEO). A relative chronology of the bronze site has actually been suggested in the Bulletin. The main points are the facts that the royal bronze workshop was active, at least from the mid 11th century until the early 12th century, at the time producing images of gods and various religious objects for the Palace and also maybe for the capital's temples

[slide] The Casting for the King project is the fruit of a new collaboration between the APSARA National Authority and the EFEO and other partner institutions, continues the pioneering research and aims at further archaeometallurgical study in the Royal Palace bronze workshop.

The research is mainly two-pronged: First to inventory and characterize the metallurgical knowledge of the casters serving the Angkorian Kings, notably by studying the overwhelming casting process on the site, lost-wax, although other techniques used have also been evidenced. Secondly, to determine the structure of organisation of a metal workshop producing for the Royal power, which includes order terms and conditions and the supply network of raw materials, productions scales or the delivery network of finished products.

The Casting for the King Project's first mission lasted three weeks in July of 2016. Short in time and with limited financial resources, it still managed to bring together an international multidisciplinary team which worked in the field and laboratory using infrastructures and resources offered by the EFEO and University of Sydney's research centres.

[slide] One of the priorities was to restart where the 2013 excavation season had stopped, with the unearthing of unprecedented kiln structures. This trench (number 2 on the map) was re-opened with the aim to carry out new surveys and sampling on the two previously searched kilns. The trench was also extended to the east (trench 21 on the same map) in order to include two additional, similar structures that were only partially unearthed in 2013. Without the precious help of Martin Polkinghorne we would not have been able to restart where they left at the time. Although he is now engaged in other research programmes, he remains a very active collaborator of the Casting for the King Project.

[slide] The first two kilns from 2013 have been identified as crucible kilns, although this needs to be further researched. We now have a better understanding of their layout and structures with the bottom of each kiln directly dug in a rather compact yellow layer of clay with the sides covered with a clay mix which composition is yet to be characterized. Also obvious was the fact that these kilns were not contemporaneous but overlapped.

[slide] The two other 2013 identified kilns are in a better state of preservation and are associated with workshop layers. The same goes for two more new kilns located further east, bringing to a total of six the number of kilns discovered in the area of the Bronze workshop alone. Photogrammetry was used on each of the kiln, which will enable us to quickly give a 3D rendering and facilitate technological research. Let me also mention some other structures found, like terracotta or iron bases.

[slide] Another object of the mission was to determine the space occupied by the workshop and possibly highlight the existence of additional metallurgical sites in its approach areas. As in 2012-2013, the area searched did not allow for setting out the exact

activities of the Bronze workshop. It was then decided to extend the search area over almost four hectares. The real tangible boundary is that of the north enclosure of the Royal Palace, although it is most likely that casting activities also happened inside the palatial complex, as evidenced by Bernard-Philippe Groslier's excavations in the 1950's. To the east, the boundary could be pushed back up to the Terraces of the Elephants and Leper King, where in the 1990's Christophe Pottier found archaeological traces of lead, copper and iron works. More arbitrarily, one could consider the Tep Pranam Buddhist terrace to the north, Preah Palilay temple to the north-west and a pond located west of the Bronze workshop as the other boundaries for the considered area.

[slide] The methodology followed researched the level of pollution of the soil with heavy metals (copper, lead, tin, iron or mercury), as it seemed the best approach to identify, inside this extensive area, traces of metallurgical activities. Nicole Little, a physician at the Smithsonian Museum Conservation Institute, managed the geochemical investigation, locating the potential centre of the bronze workshop, the kilns previously mentioned and covering an area of about 7500 m². A total of 64 corings were extracted every ten metres up to 3 metres' depth. [slice] Once the stratigraphy was understood, several soil samples were extracted from the coring, weighted and analysed at the EFEO centre using a mobile Fluorescence X Spectrometer to find out their composition and to test whether we were heading in the right direction. About 250 samples have been taken and analysed before being sent for additional research at the Museum Conservation Institute in Washington where ICP-MS analyses will be carried out using better-adapted measurement tools for the study of heavy metals.

[slide] Dan Penny, a geo-archaeologist at the University of Sydney also initiated research on heavy metal air pollution using coring but this time sampled from nearby hydraulic infrastructures presenting remarkably untouched sediment deposits. The places were Srah Preah Pithu to the north of Preah Pithu complex, Srah Ta Set, to the east of the south complex of *Prasat* Suor Prat and the southwest gate of Angkor Thom, near the inlet from Boeng Thom. [slide] This is a picture of coring operations at Srah Ta Set.

Samples were sent to the Faculty of Geosciences at Sydney University and will be analysed for sedimentology and palynology. This should give us some useful data on air pollutants and relative dating.

[slide] Simultaneously, a lab was set up during the mission at the EFEO Centre of Siem Reap, where several artefacts made of copper alloys, coming from the 2012 and 2013 excavation season and also some from the ongoing excavations at the time, have been restored and some analysed using a mobile fluorescent X spectrometer. This allowed analysis of two techniques believed to have been used at the Bronze workshop, lost wax and peening. Donna Strahan, conservation scientist and director of the Department of Conservation and Scientific Research at the Freer and Sackler Galleries, a Smithsonian Institution in Washington, also took this opportunity to train two Cambodian restorers working for the National Museum of Cambodia and for the APSARA National Authority, Tol Marady and Meas Sopheap, in restoration and conservation techniques on metal objects found in archaeological excavations.

[slide] Thus, a gilding technique scarcely documented in Angkorian times was rediscovered, the gold leaf gilding technique on a black resin base, knowing that this last material was also used as an adhesive and sometimes coloured in red with vermilion. We said 'resin' but it could well be *Khmuk*, a mix of resin and ashes used in the old days, as mentioned in ancient Khmer inscriptions. On a stele of Jayavarman V is mentioned the existence of a corporation of artisans using *Khmuk* and responsible for preparing this resin for the statues of the prayer hall of the Palace, the stage before gilding. A similar technique may have been used at the Bronze workshop, probably also to ornate these statues, as could confirm some examples preserved in museum collections that are contemporary examples of the Bronze workshop. In order to better characterise this technique and required

materials, several resin samples found on the Bronze workshop site have been sent for analyses at the Freer and Sackler Galleries.

[slide] To add to the mainly quantitative analyses carried out on site, a series of samples have been extracted from objects made of copper based alloy to be further analysed with the ICP-AES technique at the Research and Restoration Centre of Museums of France. The goal is to enlarge the corpus of already existing analytical data to better characterise the type of alloy techniques used at the Bronze workshop and also the different types of copper ore that have been used there and can be identified thanks to the study of trace elements. David Bourgarit, archaeo-metallurgist and in charge of the Metal Department at C2RMF has identified up to now three types of alloy: copper alloy, bronze and leaded bronze.

Finally, a representative corpus of samples of so-called 'technical' ceramic has been selected to undergo petrographic analysis carried out at the Scientific Research Department of the Metropolitan Museum of Art by Federico Carò, a geologist and petrographer. The aim is to characterise the clay-based mix used in the Bronze workshop for the crucibles, moulds or kiln walls. After an initial on-site qualitative study, the samples have been sent to the Metropolitan Museum to be sliced into thin blades to get quantifiable data, as well as the elementary analysis of the finest mineral grains and other mineral inclusions. With regard to crucibles, the petrographic analyses will guide the typology that is yet to be done.

This gives me the opportunity to mention that this project is still a young research with several ongoing studies and analyses pending results. One of the specificities of the Casting for the King Project is to enlarge its portfolio of analytical methods and techniques in order to meet as accurately as possible the specificities stemming from the Bronze workshop of the Angkor Thom Royal Palace.

Thereby, the forthcoming research missions to be carried out within the framework of the project will alternate work on site at Angkor Thom and post excavation works at the EFEO centre of Siem Reap and additional analyses at partner laboratories.

To this matter, I would like to flag that the Casting for the King Project is now supported by the Excavation Committee of the French Ministry of Foreign Affairs and International Development, which will greatly facilitate our work in the forthcoming years.

[slide] I thank you for your attention and take this opportunity to also thank all collaborators and facilitators of the Casting for the King Project."

III.4 Research on brick structures and conservation programme 2016-2017 by Dr. Esther Von Plehwe-Leisen, conservation scientist and Professor Dr. Hans Leisen, Project Director, German Apsara Conservation Project (GACP)

Mr. Hans Leisen:

[OrigE] "Co-chairmen,
Excellencies,
Colleagues,

[slide] It is a great pleasure to present the ongoing brick research and conservation project and our conservation work in 2017. At the December 2015 Plenary Session, my wife reported on our research project on brick temples and their concept for conservation. She presented our investigation, notably on raw materials for bricks and their origin, the technological materials, polychromy and finally the deterioration processes, influences and possible conservation approaches.

[slide] The main decoration elements are carvings in brick, stucco decoration, monochrome paint layers outside the temple wall, polychrome decorations and paintings inside. Here, on the right side, you can see a beautiful painted flower on *Prasat Thom* in Koh Ker. Finally she explained some of our conservation approaches on test zones, here at the Bakong temple [slide] and here after the repair mortars have been set on one side with lime mortar and on the other with ethyl silicate.

[slide] We have already reported on this. During the documentation and investigation of the brick monuments, we discovered that the stucco decoration was not the original decoration. At Bakong, we showed that there are colour decorations on the brick-coloured wash below the stucco, as you can see on this arrow.

Our research also revealed that brick carving show different intensity. This was one of the reasons we started more intense research on the brick temple decorations. [slide] This is a picture from Kulen. We studied in total about 24 temples and many more brick towers in Sambor Prei Kurk, Angkor, Koh Ker and one temple in Phnom Drop near Skun.

[slide] The investigation methods were visual observation and descriptions. We carried out measurements and drawings. We used photography in hi-res and a drone to reach the upper part of the monuments. We also did 3D modelling using Agisoft 3D software and also selected areas where an Artec 3D laser scanner was used for high-resolution 3D scans.

[slide] The criteria for the description of the carvings are: The technical execution, rough or detailed carving; we also found scratching and there are a lot of holes in many of the sites for stucco adhesion and what we call 'keying' and we described single towers from the base up to the top. Also, other materials like stucco, painting and stones were described.

[slide] We made really nice discoveries. Here is the upper part of *Prasat O'Thmâ Dap* on Kulen Mountain. Pictures were taken with a drone; it was the first time that we got a detailed view of intensely decorated towers. There are a lot of details we can show: Many types of filigree, beautiful carving in brick, and in this case they are well preserved although they have been exposed for more than one thousand years. The white colour in this case is not paint, lichens caused it. This shows again that biology protects more than it deteriorates.

[slide] We also made wonderful discoveries like this female figure in stucco. Below, the brick is prepared to carry this stucco but the details are made in stucco. This is Trapeang Phong south of Prei Monti. The next picture is from Sambor Prei Kurk and *Prasat Yeai Poun*. There, the pictures are almost gone on the upper register of this tower, which is normally not visible.

[slide] The next slide shows the different intensity of the carvings. These are examples from Preah Ko temple, where on the left pediment there are no carvings. On the right there are more detailed carvings covered with stucco and below the left pediment are types of filigree carving, the lintel of the northwest tower on the west face.

[slide] These are the holes in *Prasat Krahom* in Koh Ker. You can also see the 'keying' or chipping of the brick surface for better adhesion of the stucco.

[slide] The investigations also gave us information on the state of preservation of the structure, as you can see here, or on the damage: Here on the left side the weathering process, on the other structural damage. From this, we can draft a risk map and develop conservation plans for the brick structures.

[slide] From these investigations we expect to acquire: More knowledge on the construction and decoration process at brick temples; more information on the different decoration systems; more information on the development of decor patterns and a comprehensive overview on the state of preservation of brick temples and their decoration. The information will serve as basis for drafting a risk map and a map of priorities for the preservation of brick temples and their decoration.

[slide] I come briefly to part II. The future conservation programme will mainly take place in Angkor Wat but also at Bakong. We work together with the EFEO on the decors of the West Mebon sandstone carving and we have two objects in the office in the APSARA National Authority compound: One is a Naga head from *Prasat* Krahom also in collaboration with the EFEO and a top stone from Lolei.

[slide] This is a picture that I showed yesterday. The orange dots are the present worksites at Angkor Wat; the northwest and southeast corner towers of the second enclosure and the eastern gopura of the first enclosure. This work, especially on the northwest tower, will last at least three to four years. [slide] Here you can see members of our team. They are still in the process of documenting the disastrous situation and deterioration patterns. They started by removing cement.

[slide] At the work site in Bakong, we put up scaffolds on three towers; the north-western tower 7, east tower 5 and tower 8. Some of the works, especially on the sandstone elements on these towers is completed, as is the stucco conservation on tower 7. The stucco conservation work on towers 5 and 8 is in progress. At the end, we still have to work on the stucco decoration at tower 8. This work is additionally supported by the FOKC foundation.

[slide] Some pictures of the situation in 2005 on the south tower, where we found a lot of fragments of fallen stucco and we sorted all these pieces and revealed wonderful decorations. In 2016, our restorer, Rafaela, was able to restore some wonderful decorations to the temple walls. [slide] A picture of the worksite at the West Mebon, in co-operation with the EFEO. Our conservators have trained members of the EFEO in conservation practices.

[slide] The last picture shows the Naga head project spearheaded by Dr Eric Bourdonneau of the EFEO. After several months of desalination cycles we have to wait for the pieces to dry then we can start with sophisticated conservation. Here, on the right side, is a badly damaged top stone from Lolei temple that will also undergo a long desalination process before we start conservation.

[slide] We have continued training conservators of stone, stucco and brick. Thank you very much for your attention."

III.5 Conservation and restoration of the Preah Pithu Temple Group in Angkor complex by Mr. Jeon Bumhwan, International Co-operation Team Leader of Korea Cultural Heritage Foundation (KOCHEF)

[OrigE] "Your Excellency,
Honourable guest,
Ladies and Gentlemen,

[slide] It is an honour to be here to present our project. I am Bumhwan Jeon from the Korea Cultural Heritage Foundation. The project is financed by KOICA in co-operation with the APSARA.

[slide] The project outline: It is divided into three parts: Capacity building which includes short and mid-term invitational training; onsite training and equipment support and various research and study subjects on conservation and management, such as the conservation and restoration of the cruciform terrace of temple T and so on.

[slide] First of all, I would like to talk about capacity-building activities. We have conducted various onsite trainings. In 2016, we have trained on site for surveys and conservation science related with biology and lithology. We are planning for onsite training such as ground surveys and structural analysis in 2017 and there will be more training planned at the request of the APSARA.

[slide] We have also planned short-term invitational training for ten staff of the APSARA. The main purpose is to foster cultural exchange on heritage knowledge between Cambodia and Korea. The first training was completed in August and September of last year and we are planning for the second phase for early April of this year.

[slide] The mid-term invitational training is tailor-made for the technical staff of the APSARA in order to develop their knowledge and skills for the conservation of cultural heritage. We have divided it into three main subjects: Architecture, conservation science and archaeology. The training for architecture was done last year and I have heard that the participants came back home safely last night. Other training sessions are planned in 2017.

[slide] There are two types of research and study work: Research for knowledge which includes studies related to Preah Pithu to get a better understanding of the monument and research for conservation for practical approach and investigation of the monuments of Preah Pithu.

[slide] In 2016, we finished the survey of Preah Pithu temple area. The topographic map, 3D scanning and drawing were conducted at that time and we got more precise data of the monuments.

[slide] A tourist map is being prepared to improved visitors' safety around the temples, since some parts of the temple are in critical condition. It will provide a better understanding of the Preah Pithu temples and environment.

[slide] The exhibition hall has been constructed. There were some recommendations from the *ad hoc* experts during the 25th technical session. We have followed the recommendations and co-operated in tight connection with the APSARA National Authority. The construction is finished and we recently organised the opening ceremony of the exhibition hall. I would like to thank His Excellency Sok Sangvar for joining the event.

[slide] For conservation and restoration, we will be doing conservation work for the cruciform terrace of temple T where the terrace, located to the west of the main building of temple T, and the edges of the terrace are severely damaged.

[slide] For the first half of 2017, we will focus on research and planning. This is our potential work schedule and this will be negotiated and discussed with the APSARA National Authority.

[slide] During the first half of 2017, we will also continue our research in various fields. Capacity building will be done for onsite training and invitational training. Equipment support such as laboratory installation is planned.

[slide] I would like to thank you for listening to our project. Thank you very much for your attention."

General Discussion

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much for your presentations. The floor is now open for discussion or questions and comments. Please raise your hand and the Secretariat will bring a microphone."

Comment from Ms. Anne Lemaistre: "Thank you Co-chair. This morning, I would like to congratulate the presenters for the quality of their work and to underline the fact that as far as I know archaeo-metallurgy is a promising new study field underlying other research skills. I would also like to add that, knowing that the entire metallurgy chain will be researched, this presentation should be linked with that made by Dr. Bernard Dupaigne last year when he presented his book on the *Masters of iron and fire in the Angkor Kingdom*. Thank you very much."

Question from professor Takeshi Nakagawa: ^[OrigE] "With regard to Preah Pithu temple, do you have already a chronology of the monuments of the group? The monument has a long history and I think it is of interest. This question is for the Korean team."

Answer from a representative of the Korean team: ^[OrigE] "Thank you very much for your question. With regard to the chronology, we have dated the monuments from the 12th to the 15th centuries. Temple X seems to be the latest, but we need more time for research. The chronology, I repeat, is from the 12th to the 15th centuries."

Question from professor Takeshi Nakagawa: ^[OrigE] "In that monument have you found any old structures, from the 9th century, for example?"

Answer from a representative of the Korean team: ^[OrigE] "We plan to carry out excavations."

Question from professor Nakagawa: ^[OrigE] "Thank you. I look forward to your work."

Comment from the Co-chairman for Japan: ^[OrigE] "Please before asking your question, could you introduce yourself? Thank you. "

Question from Ms. Esther Von Plehwe-Leisen: ^[OrigE] "My name is Esther Von-Plewhe Leisen from GACP. I would be interested to know whether there is any knowledge on the origin of the ores that were found in the metallurgical programme. Where were they mined and if there were any geological layers found?"

Answer from Mr. Brice Vincent: ^[OrigE] "I can try to answer your question. At the current state of research we do not have much knowledge on metallic ore in Cambodia. There have been some findings in central or southern Laos. We have more data for iron metallurgy. I talked this morning about copper-based metallurgy. For copper mines we are searching in central and southern Laos, for example in the Champassak province that could be the origin of Angkorian copper. For iron metallurgy there is the copper mine of Phnom Daek and maybe my colleague Im Sokrithy would be more knowledgeable with regard to copper mines in Cambodia. There are also other sites other Phnom Daek too. I hope that answered your question."

Comment from the Co-chairman for Japan: ^[OrigE] "If there are no other questions let me move to the adoption of the Code of Conduct for Researchers. Professor Azedine Beschaouch, the Scientific Secretariat of the ICC, will introduce this item."

III.6 Adoption of the code of conduct for researchers: Introduction by the Scientific Secretary, Professor Azedine Beschouch

"Distinguished Co-chairs,
Excellencies,
Ladies and Gentlemen,

Let me first recall that the APSARA National Authority has in the past months invited all teams working on the Angkor site and presented to them a draft Code of Conduct for Researchers. The value of the project in a nutshell is to make sure that we adopt standards that are in compliance with the international standards that have been applied until now. These standards are mentioned in the document, for example the European Code for Researchers that was one of the first to exist.

Another value is to harmonise among ourselves, international teams, and not only with the APSARA National Authority, the exchange of information and to ensure compliance with the recommendations of the Tokyo conference and those of Paris and Siem Reap. These three conferences have always recalled that archives protect and safeguard, and that archives are placed under the responsibility of the APSARA National Authority. To this aim, an exhaustive consultation was launched and you heard the presentation in English by Her Excellency Helen Jarvis and in French by His Excellency the director of CIRDA (the International Research and Documentation Centre), Dr Tan Boun Suy, at a previous ICC meeting.

The main point that I need to recall today is that discussions and dialogues were held, documents were exchanged and teams submitted amendments in writing or orally, although no team has raised any objections. Today, we look at the English version, which is to be used as the reference for adoption. The Khmer text, mainly for the Cambodian researchers, needs to be reviewed, something the APSARA National Authority can do. As for the French version, I would be delighted if we could find someone that is better versed in French than I am. I reviewed it exhaustively to make sure that it is not just a translation from the English, but a text that flows in French. Sometimes, the French version is gibberish, although all the words are there. The French text already exists, but please do not adopt this, as we use the English as a reference. We have talked about this Code for a long time, so Ladies and Gentlemen, Co-chairs it is time to act.

Obviously, as is the case with all substantive texts there might be some issues arising during implementation that will require amendments. This is obviously not God's order, but simply a human standard in line with UNESCO and conventional customs. Fair play and conviviality are the main assets of the ICC recognised worldwide and it is important that they continue.

Thank you."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much Professor Beschouch. If you agree I would like the Plenary Session to adopt this Code of Conduct for Researchers by acclamation. Thank you very much; the Code is adopted today. We now have a coffee break for 15 minutes. The session will resume at 10:15 a.m."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much moderator. We are moving to the next point of the Plenary Session, which is the report of the *ad hoc* group of experts. The first report, from the *ad hoc* group of experts for conservation, is presented by Professor Pierre André Lablaude and Professor Kenichiro Hidaka."

IV- AD HOC GROUP OF EXPERTS REPORT

IV.1 Report from the *ad hoc* group of experts for conservation, by Professors Pierre-André Lablaude and Kenichiro Hidaka

Professor Kenichoro Hidaka:

[OrigE] “ My name is Kenichiro Hidaka and I was allocated 20 minutes. [slide] I start with *Prasat Sralao*, close to the West Baray in a small commune and, as you can see, surrounded by rice fields. Almost abandoned in the woods and ignored after the necessary minimum survey and photo-shooting undertaken by the EFEO in the 1930s, *Prasat Sralao* shows similar conditions with *Kapilapura*, for which we made recommendations in the last ICC, in June of 2016. [slide] Our recommendations for *Prasat Sralao* may inevitably be similar to those for *Kapilapura*.

The overall configuration of the temple is composed of four structures and its architectural elements have been identified. A beautiful stone lintel from this site is now preserved at the National Museum of Phnom Penh. The site has been relatively cleared and the overall configuration of the temple and architectural elements has been well identified now. Surveys and photo shooting were conducted in the 1930’s by the EFEO and visual documents remain.

The recommendations are the following for this site:

[slide] 1) Minimal invasive site clearing should be carried out, which should be followed by mapping of the site. The clearing and mapping should include surrounding areas, as the site may be far wider than we suppose today. Comparison of the site now covered by vegetation with old photos taken by the EFEO in the 1930’s would be indicative and instructive. Cleaning should be done carefully by putting provisional due supports to secure the work. Trees engulfing walls should not be removed in this initial phase.

[slide] 2) Inventory and documentation of scattered stones should be made. The existing stones should be compared and identified based on photos taken by the EFEO, which may reveal the loss of some blocks. Starting with this comparative study of visual documents, further archaeological research/surveys should be advanced together with the mapping of the site and associated features. The survey and mapping should include brick structures buried under the ground along the approach area to the temple, mounds and settlement patterns barely traceable along ancient roads.

[slide] 3) As with *Kapilapura*, the archaeological survey and conservation of this site should be entrusted to the relevant team of the APSARA Authority with the duty to submit reports to the ICC. In this photograph you can see the traces of ancient road and the area still covered and rich with information.

4) Before opening the site to visitors: a) The leaning walls of the central and northern shrines should be appropriately consolidated; b) access to the site should be made; and c) signs to name the site should be put up, so that visitors can identify the ruins. Point a) is urgent. Vegetation clearance should be in harmony with the cultural landscape of the site by keeping the evergreens of the complex and the environmental atmosphere centred

on the ruined temple. The typical landscape surrounding the temple, such as rice fields, trees, ponds, etc. should be well associated with the integrity of the site.

[slide] 5) Necessary equipment should be allotted to this site by the APSARA National Authority to ensure the efficiency of the work. Providing human resources for the survey and protection of the site is also necessary.

[slide] 6) With Kapilapura, *Prasat Sralao* should be recognized as a pilot project to be followed by many smaller temples or temple complexes scattered in Angkor, used as an 'example' of restoration of abandoned structures to be cleared, newly documented, structurally reinforced, well signed, and open to tourists.

[slide] The second site is Ta Prohm: Phases I and II have been completed by the ASI. Phase III of restoration is now ready to start. Site management and control of the growing tourist flow have become challenges at this site.

[slide] We *ad hoc* experts recommend for Ta Prohm:

1) Continuity of the work should strictly be kept in technique, method, material and philosophy of conservation. Interruption of the site's management should be avoided in order to avoid any harm to the monuments by nature or visitors.

[slide] 2) Interim reports of the previous phases should be submitted to the ICC in order to assess the results of the conservation work. The new project, clarifying the goals of the new phase, also needs to be submitted to and examined by the ICC. As the restoration of one of the most frequently visited monuments in Angkor is being handed over to the next generation, it is recommended now to summarise the experience and achievement in all of Angkor by holding a workshop where practices, techniques, analytical methods, materials, monitoring systems and relevant data will be reported and discussed to achieve a consistent approach for conservation in the Angkor Park.

3) At least one expert from the field of stone conservation should be included in the new team, who would supervise the delicate work both on sculptured surfaces *in situ* and the treatment of blocks to be applied for anastylosis.

[slide] 4) The colour of joints created by reassembly of original stone pieces should be appropriately arranged in order to harmonize the visual appearance of the surface.

5) As an urgent measure, this crowded site should be opened earlier and closed later. The management of the tourist flow inside the site should be well co-ordinated with the spaces and traffic flow just outside the enclosure. Particular attention should be paid in this view for the anastylosis project of the south gate.

[slide] 6) Bas-reliefs on the sides of narrow passages are under threat of being worn-out due to heavy tourist flow which scrapes the surface. Appropriate protection should be carried out urgently.

7) Two trees inside the Hall of Dancers should be kept, following the recommendation in the previous ICC, while the small bush on the structure may be removed.

8) The *ad hoc* experts, recognizing the significance of the excavation proposed by the Indian team along the external side of the Hall of Dancers, recommend that the APSARA National Authority forward the procedure to the Indian team so that permission is granted for the work to go ahead.

[slide] Allow me to insert one special remark: We, *ad hoc* experts for conservation, greatly appreciate the achievements completed by the excellent engineer Mr. Devandar

Singh Sood through his work with Ta Prohm over thirty years. We do hope that he will remain to contribute to the restoration of Angkor monuments through his rich experience.

[slide] Preah Kahn, Southern Library in the Eastern Section:

Recommendations: 1) The dead tree covering the Southern Library in the Eastern Section should be removed by cutting it carefully into smaller pieces. As the big stump sticks to the structure with roots, cutting and removal should be done with the least possible mechanical impact upon the structure itself and the attached western wall of the Hall of Dancers. Particular attention should be paid to the removal of roots reaching deep into the structure. Removal of old concrete props and wooden supports should also be carried out with utmost care. For these interventions we recommend appropriate reinforcement by setting up wooden shoring inside the structure.

[slide] 2) The restoration project, including the timetable of the whole sequence which has been submitted to the *ad hoc* experts is proper and suitable for the seriously damaged structure. Partial dismantling and reassembly and partial reconstruction of the new laterite foundation in the eastern half where the soil subsidence is clearly observed; these principles of restoration are based on the philosophy of minimum intervention. Pins and clamps should not be inserted unless necessary. *Ad hoc* experts recommend starting the work and requesting the interim report to be submitted at the next ICC

[slide] The south Entrance of the Shiva Complex at Preah Kahn: Here you can see the large displacement and the heavy blocks. Recommendations:

[slide] 1) The original stone lintel we found on the ground of the courtyard to the west should be reset to its original position. A pair of columns made of new stone should be added to support the lintel, otherwise it will fall.

[slide] 2) The leaning heavy pediment facing the south should be dismantled and re-assembled. *Ad hoc* experts recommend setting up a bridge-shoring prior to the dismantling to secure the work and the zone. The bridge shoring is composed of horizontal beams with oblique braces forming an X and put between the pediment to be dismantled and the other one facing it, in such a way to exert counter forces against two opposing pediments. A roof should preferably cover the shoring.

[slide] The Naga Balustrade of the Dai Chhnang Gate, Angkor Thom. We don't have much time so I skip to the recommendations:

[slide] 1) Anastylis should be advanced with the removal of already decayed concrete additions added in the past restoration. Concrete additions creating negative impact upon the structure due to the aging should also be removed. Iron clamps producing rust should be removed as well and, where necessary, replaced by stainless steel bars.

2) An Archaeological survey including excavation in the moat should be carried out by the relevant team of the APSARA National Authority to find and to collect scattered or buried pieces to be used for anastylis. During the course of this work, it is recommended to remove the concrete debris abandoned and excavations should be done in this area on the northern shore of the moat.

[slide] 3) Prior to the definitive anastylis operation, a provisional assembly should be done to check the correctness and stability of the work.

4) The use of new sandstone should be limited only for the structural necessity to sustain the balustrade and sculptures.

5) The base slabs of the balustrade are slightly lower than the surface of the road passing through the causeway. In some parts base slabs are missing, creating an even lower level. If some missing slabs are found through the archaeological study recommended in point 2, then anastylosis should be done. Otherwise, we should leave the lower level as it is today and observe the situation of the drainage with care.

[slide] Angkor Wat's West Embankment, where the problem is the connection between two parts. We, *ad hoc* experts in conservation, recommend: 1) Judging the embedded concrete pipe is not strong enough to support the heavy layers of laterite — here are the surfaces of water pipes made of concrete for the old water drainage — a concrete arch covering the pipe should be constructed to afford a strong and flat base for the laterite layers.

2) Observing that some laterite blocks set by recent restoration supported by UNESCO/Italy Funds-in-Trust and operated by IGeS are quite unstable and close to falling into the moat, all the blocks from the top down to the bottom of this section, including those moving blocks, should be re-dismantled. Then, the reconstruction of the embankment should be repeated, following the same method applied by IGeS. I would like to underline that I do not criticize the methodology applied by IGeS, but somehow we saw the problem. The connection between the IGeS section and DCMA section should be carried out very carefully, it is a very delicate challenge, mainly based on the technique of the former, the Italian, under the supervision of the latter.

[slide] Banteay Srei: Yesterday, we were shown some options for signboards to be put up in front of the monument. The recommendations are the following:

1) The signboard should be properly sized, in harmony with the cultural landscape of the site and somehow appropriately related to the tradition. We, *ad hoc* experts, give preference to the third option which has the shape of a *Sema*, the traditional stone slab placed around Buddhist temples. The material should preferably be sandstone. The height of the signboard may differ slightly according to the area of the monument from 1.2 to 1.5 metres, but keep the similarity of the shape. On the surface the name of the monument, logos of UNESCO and of the World Heritage are drawn and, wherever possible, the date of the monument should be added.

[slide] 2) The reconstruction of the side doorway of the east gopura was recommended in our previous recommendation. Since mortar used between laterite blocks is reversible, it is recommended to clean and remove.

[slide] 3) Following our recommendation, the reconstruction of the south-east corner of the enclosure is in progress. Here, however, we found the same clay and mortar joints between laterite blocks. These should be removed. For the reconstruction, we recommend that the subtle, but well visible, undulation of the wall should be kept following the gentle curve of the base as a historical proof.

[slide] 4) In the previous recommendation regarding the lapidarium of this site, zoning of the site as base information to decide its proper location was requested. We, *ad hoc* experts, again recommend zoning plan be made. Sculptures and other artefacts, and stone blocks remaining on the ground to the south outside the enclosure should be urgently, properly housed in a safer place before the construction of the lapidarium.

Thank you for your attention."

Professor Pierre-André Lablaude:

[slide] I move on to the next item, Angkor Wat's western causeway. This project, led by the University of Sophia, in partnership with the APSARA National Authority, deals with

the northwest quarter of the western causeway dike accessing Angkor Wat. During the 26th Technical Session in June of 2016, the *ad hoc* group of experts made three main recommendations:

[slide] That first on the implementation of a test-pit to get to know the composition and condition of the inner backfill of the causeway dike. The second, underlining the need to add a structural engineer to the team in charge. The third, based on the outcomes of the test-pits recommended the different alternative technical options to restore the structures, respecting the principal of minimal intervention and thereby in favour of the consolidation of the structures as is, rather than complete dismantlement and reassembly as new.

During the site presentation on the 20th of January we noted that, meeting the first recommendation, two test-pits in two different locations have been dug establishing different stratigraphy, findings and conditions of the structures.

With regard to the second recommendations, the *ad hoc* group of experts regret that their recommendation was not followed up and there was the lack of an engineer attached to the project or on site to exchange with the *ad hoc* experts.

With regard to the third recommendation, as we lack a static and structural specialist on site, the different technical options presently suggested cannot be legitimately compared and validated.

The *ad hoc* group of experts is rather concerned by this, as it has delayed the project and the proper start of the works, knowing that the APSARA National Authority has started building a floating bridge to divert the tourist flow entering the temple.

[slide] The study of the measured drawings of the north façade of the causeway dike, accurately drawn by the University of Sophia, has shown, as is presented in this picture the following:

- On the one hand, the presence along the whole length of the façade of four to five historical stages of construction and reconstruction.

- On the other hand, the state of decay, in some areas very strong, of the two lower courses of this façade, regularly impacted by the changing water levels of the moat, most likely worsened by a partial thrust of the inner backfills that created some more or less obvious tilting of the wall of the façade towards the moat.

If the present situation continues it will incur dramatic consequences which have spurred the experts to take the following recommendations:

[slide] 1) To clearly identify on the entire length of the facade the different historical stages of construction and reconstruction of the structure.

2) To complete test-pit excavations on the inner backfills of the causeway in order to have one test-pit per corresponding span and to identify the differences in the composition of the soil and the state of decay.

3) An expert engineer must be brought in urgently to study for each span the different technical options best adapted to the different situations, keeping in mind that minimal intervention is the overarching guideline, and that these options can use different technical approaches that I will not mention here but that you can read on screen.

4) In order to bring down the pumping costs, to divide in length the present cofferdam into small sections corresponding to the different sections identified on the causeway

dike and subsequently to segment the progress of the work on site, completing one section after the other.

[slide] The next item we mentioned yesterday is the Churning of the Sea of Milk ceiling project at Angkor Wat. [slide] This project is spearheaded by the World Monuments Fund in partnership with the APSARA National Authority and looks into the reconstruction of a wooden ceiling in this gallery based on a fragment of an ancient ceiling from Angkor Wat and preserved at the Guimet Museum in Paris.

[slide] Several samples of the new ceiling have been carved and reviewed over the months with the last one assessed during the last visit and has shown promising signs.

[slide] Based on the last sample presented, the *ad hoc* group of experts recalls:

1) The still valid previous recommendations 9.1 to 9.4 formulated during the 25th Technical Session on the 25th of December, 2015;

2) Recommends for the ceiling carving to use wooden members that are not too homogeneous and that could even be naturally cracked or with natural irregularities;

3) Insists on the necessity to further the roughness of the carving more in line with the original fragment stored at Guimet Museum;

4) To this end, the group advises, based on the last test panel submitted, to age by sanding in a more abrupt style and blasting from further away with stronger pressure and using coarser sand;

5) Validates the final patina tests presented which final results have been very successful.

[slide] Let me move on to another site, another partnership between WMF and the APSARA National Authority at Phnom Bakheng.

[slide] With regard to missing or lacking stones, as WMF has been managing the site for many years; it started by using new stone sourced from reopened quarries. As there were many stones scattered on the hill around the temple, the team in charge of the project was asked to reuse these ancient stones for restoration of the temple respecting the principle that 'materials coming from the monument must be put back into it'.

[slide] This solution enables, for example, the preservation of some ancient carvings on the side of these reused stones and facilitates their visual harmonization and the continuity of the restored façades. This principle has been implemented on the different levels of the pyramid and has been successful.

[slide] With the site making headway, it is time to ponder whether the use of this technique, reusing ancient stones for the restoration of the small sanctuary towers topping the different storeys of the temple, is relevant or not.

Following an enriching discussion with the WMF team and representatives of the APSARA National Authority, the *ad hoc* group of experts confirms the validity and viability of using this stone recycling principle for the restoration of the sanctuary towers with the following recommendations:

1) To bolster the partnership between the WMF and the APSARA National Authority, the latter outsourcing specialised staff that could be entrusted with either part of or the

entire necessary task of sorting the ancient materials preserved on site for their reuse when restoring the monument.

2) To select among this stock of available ancient material, only parallelepipedic blocks of unknown origin and not carved or moulded and/or which location cannot be traced.

3) With regard to the restoration of the small shrine towers: to select from the stock small size stones, so that they can be better adapted to the small scale of these structures.

4) As for employing these materials during restoration work, either partial or not, of these structures, to respect the original courses height, modenatures and reliefs of these small towers whilst minimising as much as possible the re-cutting of the recycled ancient blocks used to this end. This will enable us to preserve as much possible the ancient stone-cutting faces.

5) Beyond the work already started with regard to the restoration of small sandstone shrine towers, the *ad hoc* group of experts encourages WMF to set up a partnership with the APSARA National Authority team specialising in the restoration of brick structures. This aims at planning forthcoming interventions in the years to come to safeguard and preserve the many brick towers surrounding the central pyramid which are presently for some in a concerningly dire state.

[slide] Let's move on to Angkor Thom and Southeast *Prasat* Chrung: The work carried out for the past years by the Risk Map team of the APSARA National Authority on the surrounding wall of Angkor Thom has aimed at emergency temporary consolidations in order to see to the immediate safeguarding of the most unstable portions of this complex before implementation of long term consolidation and restoration works.

[slide] To this end, wood should be the material of choice as a temporary material when propping up structures. But wood is expensive and short-lived due to the weather and termites: Also, long-term restoration and consolidation works may not be implemented before long; the team then decided to use pre-casted, reinforced concrete posts which last longer than wood and readapting a technique used on a large scale in Angkor and for the same reason by the architect Henri Marchal.

[slide] The recent installation of wire belts on the higher structures of the central tower of *Prasat* Chrung located at the corner of the surrounding wall enabled the removal, with no harm done to the structure, of eye-sore reinforced concrete props set up some months earlier on the entrance gate of this sanctuary. This has confirmed that such props can only be used for the short term. You can see them in this picture.

[slide] Taking into account the large-scale damage right by the central opening of the southern portion of the eastern surrounding wall, some temporary props and anchors also using reinforced concrete posts have been put up and this for several years until long-term restoration is carried out. Nevertheless, these props are not too visually invading.

Based on these elements: 1) In principle, the *ad hoc* group of experts is not against the use of reinforced concrete props, as they are reversible, but their aesthetic is unpleasant. The Group would underline the necessity to recall that they are temporary supports and that they should be visually in harmony with the temporary presentation of the affected architectural structures.

2) As for the 12 kilometre-long surrounding wall of Angkor Thom, the group recommends that the APSARA National Authority earmarks an annual budget for restoration matching the expansive area covered by this structure, so that long-term restoration works

and the several needs, which have been already thoroughly and in detail identified by the Risk Map, will be met.

[slide] Next is Preah Pithu, where the whole complex is included. This comprises of the Royal square of Angkor Thom and the five temples of the complex, a project which is under the management of KOICA (the Korean cooperation) in partnership with the APSARA National Authority.

[slide] During the 25th Technical Session in December of 2015, the *ad hoc* experts visited the site and took the following recommendations with regard to the location of the visitor centre.

'For construction of the visitor centre and storage area required by the project, the *ad hoc* group asks that the draft project of the location and design of the new building be submitted to it well before any construction is undertaken on site. This new project will necessarily include the relocation of existing shops on the site. This project must also take into account the developments planned for this sector in the overall master plan study for the Angkor Thom royal plaza.'

Unfortunately, this 2015 recommendation has not been followed up, as no dossier was sent to the Standing Secretariat for validation. Obviously, this raises the issue of respecting the ICC standard procedures and operations.

[slide] The architectural quality of the pavilion which has just been built is not shocking; on the contrary, it is rather pleasing, though questions hang on its location and especially on the mediocrity of its surroundings, right next to souvenir stalls and restaurants.

Let me explain: A group of Koreans visit Angkor and they see the French, Japanese, Chinese, German flags on each temple that is restored by any of these teams and ask where the Korean project is. They would be told that it is located at the back of the stalls and once they reach the stalls they ask for the Korean project and are told that it is located behind the bins. What I mean by that is that the presentation of this monument and of the project does not match the standard of the site and the Korean team's co-operative project.

[slide] Conversely, the KOICA team's presentation of the main guidelines of the project, including respecting the harmony between architecture and nature; the minimum intervention principle; restoring the hydraulic structure — all of these elements fit perfectly within the previous recommendations made by the *ad hoc* experts.

The presentation of the project studies, their methodologies and protocols seem very serious and accurate when carrying out measured drawings (3D scanning), diagnosis of the structure pathologies, monitoring their evolutions or in terms of geotechnical and hydraulic investigations and etc. [slide] The project also includes a major training module using staff outsourced by the APSARA National Authority.

Thereby, the KOICA team should be congratulated for this approach with regard to monumental conservation or restoration issues. [slide] To develop and continue this project, the *ad hoc* experts have two types of recommendations:

1) With regard to the site presentation from the Angkor Thom Royal Square's perspective, the group recalls to the APSARA National Authority, the body fully in charge in this location, its previous recommendation on the imperative need to improve the presentation of the immediate approach area of the information hut and Preah Pithu site. To this end, the vendor stalls need to be relocated within the framework of the overall development plan of the Royal Square

2) With regard to built-up and open areas at the site of Preah Pithu, the group wishes: To receive in early May 2017 through the ICC Standing Secretariat, the detailed implementation project of the cruciform terrace of Temple T. This temple restoration is planned for the first phase of work. Once submitted, the plan can be validated during the next ICC Technical Session, based on the implementation timetable set for the project,

[slide] 3) To be able to review with KOICA as early as possible any proposals relating to sensitive technical issues to the stabilisation in its current state of Temple U and of the different technical and landscape variations envisaged for resetting the hydraulic system of the site.

[slide] Finally, the last temple, Ta Keo: The *ad hoc* group of experts has been monitoring for several years the progress of the works carried out at this temple by the Chinese team of the Academy of Cultural heritage of China.

Until recently, the group had numerous fruitful exchanges, notably on the major structural consolidation interventions, in particular to restore damage on the different corners of the pyramid, where some high quality works were consequently implemented.

[slide] Yet, the *ad hoc* group of experts had very early on drawn the attention of the Chinese team on the rapid and rather concerning evolution of the alterations of the carved stone decors on some areas of the base of the temple.

[slide] The Chinese team management told us at the time that they did not have any specialists in this field and subsequently a partnership with the German team, GACP, had been set up. For unknown reasons this partnership, although started, never took off.

The work on the treatment of the stone surface has been taken over by a Chinese team which responsibilities, skills, diagnosis methods or intervention techniques have never been fully identified nor assessed until today.

[slide] The last visit on site did not allow us to meet any managers or specialised workers working on these structures to inform us on the techniques and products used. A technical document released after the experts' visit and drafted in 2014 by the Guangzhou Municipal Hanrui Historic Relics Preservation Design and Study Centre shows a good understanding of the causes and impacts of the damage and also prescribes detailed treatment interventions that are partly right.

[slide] The site visit has shown inappropriate interventions that do not seem to comply with the prescriptions and have undoubtedly been implemented by non-specialists: Aradilte used to glue, epoxy resin runoff, the use of silicone mortar and etc.

[slide] The fact is that not only are these treatments not adequate and badly applied, they can also only further damage the areas they have been applied to. Moreover, the replacement of sandstone blocks with new stones on some other areas of the temples have been badly executed and the quality is far lower than that of the previous years. These changes seem to have come after a more or less recent change in the management and also maybe of the workers on this site.

With regard to recent progress made on this restoration site, the *ad hoc* group of experts:

1) Notes the absence of specialists on stone conservation during the last visit organised for this ICC;

2) Notes that for these very specific types of work, the gap between the theory prescribed for this work and its implementation on site;

3) Recommends that the managers of the project urgently establish close contact with the APSARA National Authority Stone Conservation Unit, so that they can strike up a partnership with the view to putting back on track and redefining the intervention methods to be applied;

4) Notes also the loss of quality of the general work on new stone over the past months and invites the project managers for improvement and training so that the relevant skills can be used to carry out this type of work;

5) Heeding the scope and visibility of this major monument, a beacon of the priceless contribution of the Government of the People's Republic of China for the safeguarding of the monumental site of Angkor, the experts invite the Standing Secretariat of the ICC to organise for the next ICC technical session an expansive meeting, so that the management of the Chinese Academy of Cultural Heritage may exchange in detail with the *ad hoc* group of experts on the different aforementioned points and on the overall progress of the work on this monument;

6) To this end, invites the Chinese team to put together a dossier detailing the forthcoming works for the years to come, including planning and the different sets of specialist skills required;

7) Finally, the experts express the hope that this programme regains its former excellent level in line with World Heritage standards and strongly recommends that the ICC and the APSARA National Authority invite the Chinese Academy of Cultural Heritage team to postpone for now any new intervention with regard to stone conservation treatment and replacement using new stones.

Thank you."

IV.2 Discussion on the new recommendations for conservation, research and archaeology

Comment from the Co-chairman for Japan: ^[OrigE] "The floor is now open for discussion, remarks or observations. Once again, please introduce yourself before asking your question."

Comment from Mr. Azedine Beschaouch: "May I, Co-chairs, just make one observation before starting the discussion? Professor Lablaude and Professor Hidaka have drafted in French and in English respectively the texts that you have been distributed. In the recommendations, sometimes the quality is missing with regard to the translation. What I mean is that if you have any observations please do them on the original texts. What Professor Hidaka presented is in English and sometimes the French is not as accurate as it should be. The texts were only sent to us this morning, so we did not have much time. Please, any remarks should be on the substance, not on the form. Thank you."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much for the clarification."

Comment from Mr. Ros Borath: "Thank you Co-chair. My name is Ros Borath and I am Deputy Director General of the APSARA National Authority in charge of monuments and archaeology and responsible for the National Committee of Cambodia for World Heritage. May I start in any order or should I follow the recommendation numbers? Then I would like to skip to point VII on the Angkor Wat causeway. I do not have any specific observations

on points 1 and 2, but point 3 raises some questions and further details to ask the *ad hoc* experts so that we can move forward as quickly as possible.

The first recommendation is on the imperative contribution of a specialised engineer on this type of problem. The Sophia team and the APSARA National Authority met with five engineers and architects sent by the Sophia University in July 2016, but no report, as was requested by Mr. Lablaude, was drafted. The second question is on the stabilisation of the facade walls by deep anchorages without any dismantlement. As a technician, I would have liked to know whether the techniques used at Pre Rup, Phnom Bakheng or Angkor Wat can be copied or due to the presence of water and bad quality backfills would you suggest another proposal or have any other ideas?

The second observation is on the partial dismantling of the portions of the walls that are too deformed to be consolidated as such. I do agree that this is a very sensitive intervention; thereby, would you have any more technical and precise recommendations to save some time instead of opening with no knowledge of what should be done? The test-pits have evidenced a very weak structure. How can we intervene without any consequences for the structure? Your answer will probably be that this is when you need an engineer and you are right, but what I am questioning regards the underpinning of the façade walls which relates to what I just said.

Another point is on emptying and replacing the poor quality inner backfills, with consolidated backfills using geotextiles and geogrids. I agree with you that there is a need to replace the bad quality backfill and use healthy materials and mortar, but which type of mortar? During the first phase implemented with Sophia the approach chosen was the ancient method and to only use what existed at the time to consolidate. Will the use of geotextiles and geogrids disturb this philosophy? Should we use something else rather than only using natural and ancient methods?

These are the five or six items that I would like to raise and Mr. Beschouch also said that the French draft is relevant for this, so I wanted to know whether the French word 'éventuellement' and the English translation of 'potentially' have the same meaning. It seems to me that 'éventuellement' means that only if necessary we will use geotextiles and geogrids. Would it mean in English that we have to use them? Thank you."

Reply from Professor Pierre-André Lablaude: "Thank you Co-chair. These different comments are relevant and this is why my colleague and I regretted the fact that there was no one to discuss with on site; this why we are doing it now. When one mentions tie rods, mortar injections and consolidating backfills, these are all tools from a restorer's toolbox. They form a list of possible solutions, knowing that the dike presents different stages of construction. Some are more recent than others, circa 16th century, if I am not wrong, and these stages portray the authenticity of the original construction.

The discussion we had with Professors Mounir Bouchenaki and Giorgio Croci concluded that these reconstruction stages are part of the monument's history and must be preserved. There are some ancient original portions and those more recent with different structures. The original portions include laterite blocks that have not moved, are solid and that can be simply consolidated as they sit using injections. The more recent reconstructions used gravel and sand backfills that may require replacement. Some portions of the wall are in good condition, others not.

There is the need to establish a diagnosis for each portion and to find the relevant method. What we were looking forward to during our visit on site was to exchange with an engineer and the architects of the team to assess the type of interventions and where and when or what other type of technical tools could also be used. This has frustrated us because people always assume that dismantlement should be carried out due to the lack of

knowledge of other methods. During the previous visit, Professor Croci showed us that you can consolidate on site without any dismantlement, hence the recommendation taken.

We are simply applying the previous recommendation validated by the ICC and based on the experts' advice, which at the time were four experts."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you. Professor Ishizawa from Sophia University, you have the floor."

Comment from Professor Ishizawa: "I am the head of the Sophia University work site at the Angkor Wat causeway dike. I would like to thank Professor Lablaude for his very useful and practical recommendations. I would like to ask for more guidelines and have a technical discussion, as we did for the first phase from 1996 until 2007, applying the traditional construction technique, as did Professor Groslier in the past. For the past ten years, the state of condition of the first phase of the causeway dike has remained stable. I also agree with the intervention of Mr. Ros Borath. Once again I would like to exchange on technical points and consult with our technical Committee in Japan. Thank you very much."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you. Are there any more questions?"

Comment from Mr. Azedine Beschaouch: "Co-chairs, we are delighted to see the experts have their say. Professor Lablaude recalled that during the last ICC we were fortunate to count among us Professor Croci who is a world specialist in monument stability. We are satisfied with the convergence between the former and new recommendations formulated by Professors Hidaka and Lablaude and by our Director of Education, Professor Ishizawa, who is familiar with the site.

May I just state that this is not one project among others; it concerns the major monument inscribed on the World Heritage List that the ICC is overseeing. This project deals with the entrance to Angkor Wat and Professor Ishizawa cannot be replaced. He is very familiar with the site and we are satisfied with the agreement he gave and I am sure that he will work more closely with the *ad hoc* experts and will organise very soon meetings with the APSARA National Authority so that these recommendations are applied and maybe he will even add extra care, as he knows the site better than anyone else.

We are not going to train a team that is led by someone who will soon celebrate his 50 years of presence on this site. I am delighted with his agreement and I congratulate him for saying so. Other people could argue that this is difficult and etc., whereas he reacts well. We are delighted to organise a meeting with Professors Hidaka and Lablaude and any others like Professor Bouchenaki who will come back. The Secretariat will oversee this for smooth preparation. Once again, congratulations to the rector."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much for your kind words. Any more comments or questions? Please Mr. Lablaude. »

Comment from Mr. Pierre-André Lablaude: "During our visits we went to some sites selected by the Secretariat in liaison with the APSARA National Authority. We always make our comments and exchange in an open manner with the teams that we know well. The only thing is that during our travels through the Angkor site we noticed an issue that was not mentioned in the programme, which is the increase in constructions on the site.

His Excellency Dr Sum Map recalled that the Angkorian territory was organised with farming areas and areas for development of the people and the heritage areas have been set by the heritage zoning, Zones 1 and 2. We have noticed in the past years, and with a dramatic increase in the past months, the mushrooming of constructions in World Heritage protected areas which, in theory, are not suitable for development. There are several rea-

sons underlying this and I believe that it is time today to understand and measure the scope and speed of this development, for example by using aerial pictures dating since the site was inscribed on the World Heritage List and to understand whether this initial zoning was wrong or right knowing that it has not been respected. It could be the object of a recommendation that we could take after this ICC. I think it is a topic that deserves attention, as Cambodia is about to present nomination files to the World Heritage, notably Sambor Prei Kuk, and the overall credibility of the ICC Angkor system could be slightly in doubt or questioned."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much. Please, you can respond."

Comment from Mr. Ros Borath: "Co-chair, I would like to talk about the Ta Keo project. I think the recommendations are spot on and I would like to ask the *ad hoc* experts whether a point could be added for archaeological investigations. I have the feeling that the works carried out on site should include archaeological investigations. Thank you."

Comment from Mrs. Francine d'Orgeval: "Thank you Co-chair. I would like to rebound on Mr. Lablaude's comment with regard to developments in heritage zones 1 and 2. I have also witnessed this, with constructions more or less in durable materials. Let me add this: First, I would like to recall that the conference that was held in Abu Dhabi on the 2nd and 3rd of December, 2016, mentioned Angkor as a model of outstanding work carried out on the site. It is vital that it remains a model.

The first phase of restoration and development of the site was a success. This has opened the gate to unprecedented tourism development that has also benefited the region and the people. But this success has triggered strong pressure from tourists on the local people with unbridled development including shops and trade activities in and around the temples and in protected areas.

One of the main components of the success of the first phase has been the establishment of the APSARA National Authority, which role is to oversee management and application of rules and restrictions imposed upon by UNESCO. With regard to a site inscribed on the World Heritage List, the APSARA National Authority is also committed to preserving the high spiritual value of this site. Let's recall that Angkor is a Heritage of Humanity and a world public property. The future of this site affects us all and respecting the UNESCO criteria must guide the international action and this is the reason we must stand behind the APSARA National Authority in this endeavour as the future of Angkor hangs on it.

I believe, as was mentioned by the APSARA National Authority's Director General, that increasing awareness-raising activities to people living on site on the potential risks when not respecting UNESCO regulations could maybe prevent the problems related to today's situation.

As you have given me the floor, I would also like to add something on the adoption of the Code of Conduct for Researchers. I understood that it was adopted and I am satisfied with this, as it complements the Angkor Charter. But I was not able to read in detail the French draft and I would like to be able to make possible comments on the text later on. Thank you very much."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you very much. Is there any answer with regard to the development of housing? Please."

Comment from Dr Sum Map: ^[OrigE] "Thank you Co-chair. I think you all know that the question of the new construction in the zones is very sensitive for the APSARA National Authority. On behalf of the APSARA National Authority I recognise that there is an increase

in the number of constructions and new houses in Zones 1 and 2. We have already carried out a lot of work, but sometimes we cannot do it alone without the close and good co-operation of the concerned authorities. This is a great opportunity here, as we have representatives of Siem Reap province in the room, so that the authority can understand the full scale of the danger ahead of us and I appeal for close co-operation with the authorities so that we can work together towards the protection of our heritage.”

Comment from the Co-chairman for Japan: ^[OrigE] “Thank you very much. Mr Beschaouch you have the floor.”

Comment from Mr. Azedine Beschaouch: “Thank you Co-chair. I would like to ask two questions related to the presented recommendations, but before that, I will finish on the item on the table. It is a sensitive issue. Since the ICC reform we have had the opportunity to organise over an hour-long debate where we can together ponder on general interest themes. Is there anything more interesting and overarching for Angkor than what was said by the representative of the French Ministry of Foreign Affairs, Ms. d’Orgeval? I was born in a developing country not unlike Cambodia and my past experience with World Heritage includes many sites and countries visited. I have never heard of locals living near a site that did not want to develop. We cannot go along the avenue of democracy and naive optimism and etc.

People anywhere (Tunisia, Cambodia, Morocco or Senegal, etc.) only want to develop and build. This does not mean that they should not be restricted, but it is not as simple as that. It is a complex issue and awareness-raising activities will not solve it all. People only dream of one thing: Having their home on the land of their ancestors and build. This is the reason it is very sensitive.

I agree with setting up a meeting to debate on this, but do not criticize Cambodia for something that no other countries have succeeded in doing. I do not know of any that have. Anne Lemaistre is probably better versed than I am on these practical issues and especially in South America and I think she would agree with me. I was told that in Mexico, the famous National Institute of Anthropology and History cannot raise awareness among its people on building development. It really is an intricate issue.

Now, I ask my questions. In his report, my friend Professor Hidaka mentioned something that could be of concern and I did not understand the reasons for this and maybe the APSARA National Authority will shed light on this. The UNESCO/Italy Funds-in-trust programme under the leadership of Professor Santoro worked on portions of the banks and steps to restore them. As was shown by Professor Hidaka, there is a small area that has been neglected, if not abandoned. What happened? The APSARA National Authority and the Department of Monuments and Archaeology restored another portion and their representatives are attending this session, while Mr Santoro’s team – we have been working with them for 20 years—restored the other portion and then now we have this area between the two projects. Who is responsible? Was it neglected, forgotten, was it wilful to establish a distinction between two areas of restoration?

I am not clear on this and I find this somewhat disturbing, because we are all responsible and someone could say: ‘come have a look — it is collapsing into the water’. I ask this question to my friend Hidaka: what did he see and did the APSARA National Authority respond?”

Comment from the Co-chairman for Japan: ^[OrigE] “Mr. Hidaka, please. »

Comment from Professor Hidaka: ^[OrigE] “Thank you for your comment. I do not know how this damaged intermediate connection area has happened. The background is there, but we scientists saw the difference and pointed out that the stones are moving, partially because this abandoned area is filled with water and partially because the Italian engineers, when

they left the site, did not care to stop the last stone. From an engineering point of view it is clear that if they leave it as such it will move. Something had to be done but they did not do it. Also, something should have been done very quickly to connect the Italian and the APSARA National Authority parts.

The problem is that the methods of construction used by the Italians and the APSARA National Authority differed. I propose to use the newer technique, under the supervision of the APSARA National Authority. Of course, the connection is very delicate and the new technique, according to my point of view, should be applied until joining with the APSARA National Authority area. This connection would include the so-called abandoned area. When implementing the work, the Italian technique will be continued until the APSARA National Authority area. Is this ok or should I explain more?

Both techniques have their pros, but the area to be connected is difficult. It is therefore not possible to use the APSARA National Authority technique in this area because there is not enough soil for compaction. The compaction method was applied in the APSARA National Authority area but there is not enough soil there, therefore the modern Italian technique should be continued until the APSARA National Authority area. I will talk with the engineer, but this is the logic of it. Were my explanations good enough? I am not criticising the Italian way of construction, this was done very well, I just noticed the unstable part and I would recommend replicating the Italian technique."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you. Sir, you have the floor."

Comment from Mr Ly Vanna: ^[OrigE] "I am very pleased to answer Professor Beschouch's question on behalf of the Department of Monuments inside Angkor. I am the Director of the Department. I will briefly introduce the problem that occurred in the programme of the UNESCO/Italy funds-in trust operated by the Italian team.

The problem is not technical. The project was completed in the first phase and then the Italian team, within the framework of the new funding, continued the second phase. When the project was completed, in late November 2016, it was not well completed because there were 60 cm left by the project. My Department is in charge of another portion of the embankment using traditional techniques and we kept the gap open, which is the connection between these two projects. We did this for two reasons.

The first is that the Department of Water Management has not constructed the new concrete pipe for the drainage system connecting the moat of Angkor Wat to Trapean Se in the west. We have to wait for the completion of this new drainage system. The second reason is that the end part of the project ran by the Italian team was left unfinished. We checked with the representative of this project and we agreed that there was a portion left not completed. The reasons are very simple and I am not talking about techniques used, but just why there is a gap. Professor Beschouch asked why the Department of Conservation did not pay attention to this. We observe all the time and we noticed the gap, pumped water out of the embankment and saw the situation of blocks almost collapsing.

This is my answer. Thank you."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you. Please, you have the floor over there."

Comment from the director of CSA: ^[In Chinese with consecutive translation into English] "I am the director of CSA. Regarding the recommendations 1, 2, 4 from the *ad hoc* experts for Ta Keo temple I would like to reply. The first one on the lack of stone carving experts on site during the visit of the experts is due to the approaching Chinese New Year and today is a holiday in China, so no one was available. I apologise for this and I hope the experts understand. Is there a chance to let them have a discussion with the experts?"

For the second recommendation, I think we had different understanding. We have applied major principles during the intervention on Ta Keo. The first is minimum intervention; the next is to use the original stones, the third is the reversible principle. During our restoration works, we continued following these three major principles. Now the project is finished partly and once it has been completed I think our work will be harmonised. I believe that there are no differences between the theory and implementation on site and once finished it will be visible.

Regarding the used of new stones for the fourth recommendation. We have seen in the PowerPoint presentation of Professor Lablaude a picture showing a restoration that is not recent, but from 2014. For the restoration of this corner the stones fell and we found and put back the original stones in the corner. As for the use of new stones, they were not put back in the area supporting the structure. The new stones used filled the gaps of the old stones. It seems that the stones are very new and that we have not done any work to age them. We will carry this out. I think that the quality of the stone carving needs to be improved. During the restoration at Ta Keo we used old stones and they represent 80 per cent of all the stones used. The new stones we have used were selected carefully. They are of very good quality.

With regard to the workers on site, our colleague in charge is a senior engineer who used to work on the restoration at Chau Sei Tevoda. The Chinese government and the Chinese Academy of Heritage Work have paid their utmost attention. Two months ago, we organised a visit of experts on stone monuments from China to visit here. As for the issue of the manager or staff and the lack of communication: The management style differs from countries and teams, our Chinese team has paid a lot of attention to this work. I think there are no problems in the skills of our staff but more in communication.”

Comment from the Co-chairman for Japan: ^[OrigE] “Thank you very much. Before any answer from the experts I give the floor to Madame Lemaistre.”

Comment from Ms. Anne Lemaistre: “I thank the Chinese team for this frank answer that will facilitate communication with the experts and at the next session a technical meeting will be organised to discuss in more technical detail on this matter.

I would like to react on the development of the population, as the beauty of Angkor is the fact that it is a living site, with more than 100,000 people living in 112 villages. It is the opposite of a lifeless archaeological site and this is what UNESCO deems positive in this site, as it respects communities. Our friend, the late Mr. Khuon Khun Neay, who was responsible for liaising with the communities, had fully understood the scope of the difficulty linked with increased demography in the Angkor site. This is also one of the reasons the APSARA National Authority was established.

In order to be proactive, I would suggest studying in more detail this issue by conducting a socio-economic study with the *ad hoc* experts in charge of sustainable development in close collaboration with the APSARA National Authority within the framework of the Risk Map which, I recall, includes three fields (monumental, environmental and social).

Thank you very much for your attention.”

Comment from the Co-chairman for Japan: ^[OrigE] “Thank you very much. Are there any other observations, comments? No. In that case I would like to move to the adoption of the recommendations. On Ta Keo, the recommendation also includes more discussion with the experts and the team of China, the APSARA and the ICC. If there are no more comments or disagreement, I would like to ask for adoption by acclamation. The recommendations for Conservation, Archaeology and research are now adopted.

Let us move on to the recommendations from the experts in sustainable development presented by Professors Jean-Marie Furt, Shinji Tsukawaki and Bernard Hubert.”

IV.3 Report from the *ad hoc* group of experts for sustainable development, by Professors Jean-Marie Furt, Bernard Hubert and Shinji Tsukawaki

Bernard Hubert:

“Excellencies,
Distinguished Co-chairs,
Ladies and Gentlemen,

[slide] Let me start the presentation of the *ad hoc* group of experts in sustainable development. We will deal with three items, commencing with Phnom Kulen, which I will present, followed by Run Ta Ek village that we have monitored since its establishment in 2010, which will be explained by my colleague Shinji and we will end with the TMP items presented by Jean-Marie Furt.

We went to Kulen for a day during a previous ICC and as the place is difficult to access we asked to go for two full days, which is what happened on the 21st and 22nd of January, 2017. The APSARA National Authority and ADF organised the visit. Mr. Seng Soth from Phnom Penh, Director of the Department overseeing local communities at the Ministry of the Environment joined us for the first day, along with Mr. Noun Mony, a representative of the Ministry of the Environment from Siem Reap province, who is rather well known as he previously worked for the APSARA National Authority. Also attending were the Director of Kulen National Park and many rangers.

[slide] In the morning we visited Preah Ang Thom village and in the afternoon we discussed the master plan project for the National Park. The second day we exchanged with villagers from Anlong Thom working with ADF's development projects (fish and chicken raising, home stays) and also with a cashew nut broker and ended the day visiting Run Ta Ek. The two days were dense, fruitful with exchanges and information and the experts would like to express their thanks to the organisers of these two days.

[slide] The first morning enabled us to state the lack of clear regulation with regard to the development of Preah Ang Thom village. These two pictures explain the changes and at the end of my presentation I will show you this picture again to confirm these changes. This picture is dated from 2011, during the monsoon and what is interesting is how dense the forest is compared to what we found on our arrival on the 21st of January. We wandered and discovered Anlong Thom with heaps of unsorted waste, although they are carefully stored in the middle of the forest. This village is a religious and tourism site where waste control remains difficult. Spontaneous constructions have sprung up without any legal, clear status and the attractions in the village are the Buddha statue, the temple and the waterfall — the place is much visited. The shops are mostly owned by people who settled in this area in the early days rather than those who emigrated in the early 1990's who have been ousted and had to resettle in the forest.

[slide] In the afternoon, we exchanged in a meeting room with representatives of the Ministry of the Environment who gave us information on the still awaited timetable and set up procedure of the Master Plan of the national Park that covers more than 37,000 hectares. The procedure, as presented to us at the time, matches what was said yesterday by the representative of the Ministry of the Environment. The Master Plan's initial phase will start being rolled out in January of 2017, with initial support from consultants (paid by UNDP) that for five months will study the area and report in May 2017. Simultaneously, a

working group will be set up made up of representatives of the Ministry of the Environment (the chair), of the APSARA National Authority, of the Ministries of Tourism, Rural Development and of Culture and Fine-arts, of CMAA (Cambodian Mine Action and Victims Assistance Authority), of ADF and Live and Learn organisations and finally of the governor of Siem Reap province. Yesterday, the representative of UNESCO, Ms. Anne Lemaistre, asked her organisation to be included in the working group, as it was not planned in the presentation we saw at Kulen.

[slide] The Master plan will cover three major issues (conservation of monuments, forest protection and local community engagement) and will be supported by two tools that are already in place: the Community Protected Areas (CPA, 5 as of today, one per legally recognised village, which covers about 800 hectares) and Archaeological Protected Areas (APA, also five and covering about 800 hectares located on the main archaeological sites either in forested areas or not). In pink and grey pink, you can see the CPA and in yellow the APA and the yellow dots are the archaeological sites. The APAs complement the protected areas falling under the CPAs around cultural and archaeological areas. There are five CPAs as you can see on this map set up in 2001 and each relates to a village. Five villages are scattered in the National Park and the CPAs represent about 800 hectares, as said earlier.

[slide] The APAs, here in yellow, were established when conservation work started on site and are located in forested areas or not. They are firstly designed to preserve archaeological remains and also cover 800 hectares. These two mechanisms cover a total of about 1,600 hectares, which is not much compared with the overall area of the Park, which is 37,000 hectares. Most of the land is being farmed or planted, in light green on your screen.

In the 1990's people use to cut trees on a small area which is later burnt and farmed for one or two years for rice and then the farmer moved on to a new area. On sandy soils it is a widespread technique found all over the world and is called slash and burn agriculture. This method has been modified here, as farmers plant rice along with cashew nut trees to produce cashews. This method has an impact on forest regeneration which in traditional slash and burn agriculture takes place, but not in this scenario, as there is no more space for rice cultivation, unless more forest is cut down. The rotation of fields in a ten to 15 year span has disappeared. This is what is practised everywhere on Kulen.

One of our recommendations will suggest extending if not establishing CPAs or APAs in areas that are still pristine on the forested massif before it is entirely affected, notably in forested areas that are yet to be invaded by cashew nut tree plantations. These areas around Preah Ang Thom are protected, as the village's main activity is trade. The villagers are not farmers, as the latter have been ousted and relocated in these villages along the road and have started farming these areas.

The extension or establishment of new areas are included in the recommendations that will be presented by Professor Beschouch relate to the use and extension of these tools where possible and of import. This will also allow clear identification of the respective responsibilities for land management and its limitation between the Ministry of the Environment, the legal administrator of the National Park, and the APSARA National Authority's conservation works. Up to now, the Ministry of the Environment has been responsible for CPAs and the APSARA National Authority for APAs. It is time to clarify the responsibilities and activities of one and the other. The discussions gave the feeling that there was reciprocal openness, which is a good sign.

[slide] Finally, the Master Plan must set out the situation of illegal villages (not the five villages) and the resources to either expel or set up a legal status to control the development of villages. These illegal settlements represent not only a threat for natural areas but also send the wrong signal to those who would like to replicate spontaneous settlements, as one could think that if new settlements are tolerated then one should try. The

planned road crossing the Park from west to east, an old project (knowing that the car is rather useless and only motorbikes can be used in the mountain) yet to be implemented, must be set out in the Master Plan principles (conservation of monuments, forest protection and local community engagement). We do not have much more information and the best conclusion would be to invite the Ministry of the Environment to present the progress of the Master Plan once the procedure is engaged, most likely at the end of the year 2017, as June comes too soon.

[slide] We have also been told, although not in detail, of the possibility of a REDD+ programme (international initiative from the UNFCCC in favour of reducing emissions from deforestation and forest and enhancement of forest carbon stocks hence the '+'). It would be preferable for the programme to follow the existing procedures and tools (CPA and APA), as there are several uncertainties in the field with regard to setting boundaries of concerned areas, something vital as they need to be recognised and accepted by the local communities (which is what led to their establishment in 2001, hence their name and the fact that it has worked).

[slide] Pictures of spontaneous illegal settlements: On one side of the road a CPA, and on the other part of the road that has just been cleared using rice hay from the first year of harvest and the burning of the field, and here a CPA. This is why the boundary notion must be accurate and recognised by all. We would wish for further information on the establishment of a REDD+ programme for Kulen so that we know what will be the purpose and where it will be implemented, making sure it does not clash with the existing zoning.

[slide] We spent the night in this village. Talking and visiting the villagers of Anlong Thom confirmed their engagement in the spontaneous plantation of cashew nut trees and the financial benefit they reap from it, as the annual yield is comfortable (more than one thousand dollars per year on small areas starting at around 1.5 hectares and this without too much labour. All they need to do is to clear and hire workers for picking.).

We also noticed their engagement in alternative income generation within the framework of the incentives set up by ADF through home stays (organised by travel agencies) or different farming practices (market gardening, fish or poultry raising, etc.). Regarding the harvest, it is usually consumed locally, contrary to what one would think, confirming that the first step is local and that the villagers are interested in improving their nutrition with additional proteins and greens. These are landlocked villages far from output markets. One must acknowledge the value of these initiatives supported by ADF which genuineness and quality of service must be highlighted and recognised.

[slide] We have recommended not only to support but also to develop the activities engaged, in order to propose proper credible alternatives to villagers that are today heading into mainstreaming cashew nut plantations. Once their plantation is planted they stop farming wet rice and in the mid-term the soil will become impoverished (as there is no more fertilisation of the already poor sandy soil) and the forest will be cut, which triggers changes in precipitation and modifies the role of the water tower the Kulen has played for the entire Siem Reap watershed including the Angkor site; something villagers seem to be clearly aware of. To this end, we think it is of importance to attract additional donors in order to diversify these activities and generate income for the people living in legal villages in order to add to the ADF programme's (mainly centred on archaeology) additional skills. This will be in a recommendation.

These two days have confirmed the strategic role played by Kulen in combining history, culture and environmental and social patterns. Safeguarding the forested environment is vital to the upkeep of the role of water tower of Kulen for the entire region, as much for the city of Siem Reap as for the Angkor site, which was designed and built on its relationship with water. [slide] I wrote this before listening yesterday to the presentation of a project suggesting the construction of a dam upstream.

This picture relates to the first pictures I projected of burning lands, which increase degradation. The forest must be protected, the monuments preserved, degrading activities stopped and if on top of that someone builds a dam, then Mr. Secretary and Co-chairs, I believe that what we are doing is redundant. Last night's presentation was antonymic to the spirit of the Angkor site and the works carried out by the APSARA National Authority to recreate the hydraulic landscape. I would suggest adding a recommendation not included in these recommendations, as we only discovered the project last night.

The preservation of the site is based on being able to control activities that have led to rapid degradation over the past few years, undertaken by landlocked people, far from any economical markets and looking to improve their living standards even by practicing unsustainable farming. The whole area is also at threat from tourism that only focuses on some sites, neglecting the people further away and the absence of regulations turns it into a short-term trade mechanism with no sustainable hope. One could, for example, conceive a different type of tourism based on the discovery of archaeological sites located in outstanding forested environments and getting to know the locals' way of life. The three guiding principles that must govern the Master Plan of the National Park (the conservation of the sites, protection of nature and development of communities) can lay the foundations for an ambitious and integrated project based on the convergence of skills and knowledge of all the organisations taking part in this endeavour and supported by the ICC.

I hand over the floor to my colleague on Run Ta Ek."

Dr Shinji Tsukawaki:

[OrigE] "Good afternoon to all,

[slide] I suppose we are all hungry but please give us another 20 minutes to explain more items. As my colleague said, we made a stopover at Run Ta Ek ecovillage on the way back from our visit to Kulen. I will quickly present the location and composition of the village. I suppose most of you are familiar with it, knowing that Dr Khun Khuon Neay was a prominent actor in the establishment, development and maintenance of the village. I will present my observations, knowing that I have visited this village for the past six or seven years and will show you the changes.

[slide] The village is located about 40 kilometres northeast of the Angkor Park. This area is composed of a core area where people live and some farming areas and further additional agriculture or fish-raising activities. This is a view of the central area where the existing pond is a manmade extension of an already existing natural pond. There is an administrative area with a shop and a restaurant. Here is the primary school and we visited some new green houses and a public garden, the new pagoda and fishpond. We went here, then there and here and then back to this area.

[slide] We were taken to the main and most beautiful house of the village, where Mr Marady explained to us what was going on. We had a demonstration of local handicrafts made by a lady. We saw colourful bracelets and other objects made by two staff. [slide] We saw the package of hibiscus and other types of tea that we tasted in the restaurant. We saw in the market place various kinds of vegetables and fruits.

Then we went to the area where new green houses have been built and where water is pumped. A Chinese team made this. There are eight greenhouses at the moment, which will be extended to 32 in the future. [slide] We furthered to a new public garden area to the south of the central pond. Mr. Marady explained that local residents manage this garden. We saw many flowers and it would make a good picnic place.

[slide] We visited a residents' farming area, where the locals manage the farm and we saw various kinds of vegetables there. We also noticed on the opposite side of the pond the newly constructed pagoda. You all know here that a pagoda is the centrepiece of a village and this village did not have a pagoda or a market. So, they added some important features to the village.

[slide] Let me move on to the past six or seven years of personal observation of the village. It was established ten years ago and I was there at the time. My university went there as well in 2009 when the village started to be built and residents moved in. At the time, there were colourful windmills.

[slide] In 2011, I took ten students from my university in August and September for an extensive programme. We were fortunate to visit at the time and after that we came back at least once a year. That year there were not many houses built and the shop was very simple. That time we saw many alien plants like that my student touches in the picture. They come from the South Pacific and they are dangerous, not fatal, but if a man ate it, he would lose his hair immediately. In December of 2011, the ICC Angkor participants visited the village. We saw the infrastructures, a new style of eco-farming and we observed many children at a temporary school housed in this shed.

[slide] In 2012, the locals started regular meetings in the main house and the entrance of the house looked better and construction of a new school started with facilities that my students, I apologise on their behalf, tested.

[slide] In 2013, we noticed a change of vegetation with greener areas, more local plants and teaching in the new school had started.

[slide] In 2014, the village had almost become a real village and we noticed that the number of windmills had decreased. A homestay programme was started with five or six houses ready to host overseas tourists.

[slide] In 2015, the village started chicken farming and gave up expansive farming areas. [slide] We went there with the *ad hoc* experts, as part of our visit programme, and saw a lot of chicken droppings for compost and large number of eggs. The village had changed and windmills had all but disappeared.

[slide] In June 2016, we visited newly established fishponds and the students of Kanazawa University met many children in the village. This is a brief summary of what has changed in the village.

[slide] Every year, I asked the students to report and to describe their impressions and observations about the village. For the first five years I did not have any positive feedback from them. They felt the village was too artificial, there was no electricity, no market, no entertainment, but this year, 2016, I had the first positive feedback from them. They could see children playing, flying kites, running and dancing around. I have a feeling that this village has become a proper Cambodian village, although the concept has been changed. We met all types of animals, like horses and dogs that would stare at me from behind fences. Last year, I could see some real pets, like this kitten relaxing in my student's arms.

The recommendation will be presented by the Secretariat so I will stop now and hand over to my colleague. Thank you."

M. Jean Marie Furt:

"Ladies and Gentlemen,

[slide] I will conclude this section of the report of the sustainable development *ad hoc* group of experts with the TMP team's work. We started with a meeting on the 20th and ended with a site visit in the morning of the 23rd of January, accompanied By Mr. Sok Sangvar and Ms. Oum Marady.

[slide] The first visit was the Angkor Wat roundabout located at the crossroads between the road coming from Siem Reap and that along the Angkor Wat moat. In June of 2016, the experts recalled how important this first glimpse of the Temple is on arrival to the site, like diving into the magic of the site, and also the fact that traffic conditions at this intersection should be improved, as the increase of traffic could make it rather unsafe. This section of the report has been drafted in concert with the experts in conservation and notably with Pierre-André Lablaude.

[slide] With regard to the aesthetic, one can only congratulate the APSARA National Authority, which removed the metallic structure of the informative panel that was ruining the panorama. This good work should continue by removing the road sign of a black and yellow arrow located on the axis of the road and now redundant, if not dangerous, as it contradicts the roundabout principle and more generally speaking simply disturbs the outlook.

[slide] With regard to traffic regulation, the APSARA National Authority's teams have levelled the former roundabout and changed the traffic lanes' condition in order to prevent bottlenecks and dangerous crossings. A short stay on site proved that the new traffic conditions work well (four infringements in 30 minutes is good) and that the roundabout and accompanying safety blocks could be finalised at the planned height. Now, we have three observations: The first is technical, as the road has subsided on the right side of the roundabout where buses drive by; also, the diameter of the roundabout seems to be at the maximum size as large buses drive very close to it (30 cm) and finally the definitive new traffic conditions must be accompanied by relevant road signs in order to break habits and prevent incidents. [slide] Pictures of the roundabout.

Our second visit took us to Angkor Wat to assess the floating bridge installation that will allow visitors access to the temple and the closure of the causeway dike for restoration.

[slide] I will not dwell on this as it was talked about this morning. This bridge is made up of plastic cubes and runs over 170 metres' length for 8 metres' width and will be accessed through two wooden platforms, here on the left of the picture. Visitors will be able to cross hand in glove in perfectly safe and comfortable conditions, with up to a maximum of 1,370 people on the bridge. The structure includes six areas for guards that will be responsible for traffic flow and visitors' respect of safety directives. Once on the other side, visitors will be directed towards the temple's present entrance and will be able to access, if they wish, to portions of the causeway dike to snap some pictures.

[slide] For us, this cream coloured structure, lying low on the water does not seem out of place and is in pretty good harmony with the landscape. According to the maker of the bridge, it can be used in more extreme conditions (at sea, for example). The bridge seems to meet all guarantees, as long as it is used as per the terms and conditions set by the seller and installer. As the restoration of the causeway dike will take some time, the colour should be maintained and algae and debris should be removed regularly. These are more pictures of the structure being built.

The third visit was to Phnom Bakheng, where there are two projects. [slide] That first is the path up the hill that the TMP team would like to light up at night in order to increase safety for tourists after sunset. We deem this as justified, as going down at dusk may be perilous. Presently, tourists use their mobile phones to light the path. Following several discussion, we agreed to: Light up the upstream area of the slope down (to the right); install night lights on maximum supporting structures of 30 cm height and, what seems the

most important for us, to find the best solution (taking into account aesthetic, technique and price) between a solar set up and a traditional electrified installation (underground).

The second project presented at the ICC in 2016 is the development of a car park to smooth traffic and secure access to Phnom Bakheng. The establishment and development of a car park have already been agreed on, but due to the number of stalls planned, 64, and the large number of vehicles parking for a few hours in this car park on the shoulder of the road (figures collected from the 31st of October until the 6th of November, 2016), the TMP team would like to modify the initial layout on three items: To move the stalls closer to the road whilst increasing green areas; to get rid of the drop-off area and to have way in and way out lanes to prevent traffic problems; and finally to have in the middle of this developed area a central reservation that offers the view of the hike to the Bakheng.

[slide] These developments seem obvious. To this end, the neighbouring rice field here to the right will have to be filled in and turned into a car park. The legal and social obstacles must be looked into in order for this to happen and the engineering studied on how to transform an inundated rice field into a fully safe car park.

[slide] Our last visit took us to the south gate of Angkor Thom, where the TMP team has reflected on the type of relevant protection to stop pedestrians from climbing on the guard rail statues to take selfies and simply to avoid any incidents.

After a long exchange (and discarding solutions such as a wooden fence that would not work), the TMP team selected a lighter option which consists in setting small metallic poles of about 30cm in height located right by the causeway's naga guard rails and cordoned with a thin metal wire. This will not stop people from climbing over, but we hope that this set up will act as a sufficient deterrent so that tourists do not climb on the statues and do not fall into the water.

[slide] To conclude, we would like to congratulate the TMP team for these two days of visit, the quality of its interventions, its responsiveness and openness to discussion and for always looking for the relevant solution. We recall, as we always have done since this team was set up and started its work that the team always works hard and that it is often mobilised on small interventions and does not have sufficient time to deal with the global strategy of the TMP, the bigger picture, and to present it to us.

[slide] We renew here our request for structuring actions that although not always visible would lay the foundation for success of many forthcoming operations. On several occasions we have insisted on the need to gain better knowledge of the types of customers and the way they visit in order to make necessary decisions. As mentioned before, this analysis should be carried out based on the data from the ticketing system. Something that seems complicated presently and we would like the TMP team to start on three to four major temples in order to begin a reflection on the carrying capacity and flow management and maybe to give a more scientific approach to the question raised yesterday on the 'overflow of tourists'. As is always the case, we stand to the ready to be associated with this work that we deem essential."

IV.4 Discussion on the new recommendations for sustainable development

Comment from the Co-chairman for Japan: [OrigE] "Thank you very much. Now the floor is open for remarks or questions. Mr Beschaouch the floor is yours."

Comment from Mr. Azedine Beschaouch: "Thank you Co-chair. Just to inform you that during our meetings, plenary or the technical, the dialogue between the experts are presented orally, as are their recommendations, but the text has been put on paper and they have

also added other recommendations and requested the Secretariat to prepare them. The recommendations have been translated into English and French and the experts will review them and they will be inserted in the final draft of the recommendations. Please do not be surprised if the recommendations that have been circulated do not include some additional items that have not been drafted by the Secretariat but by the experts reacting to questions raised and the consequent dialogue. Thank you."

Comment from the Co-chairman for Japan: ^[OrigE] "Thank you. If there are no further comments, let's adopt these new recommendations regarding sustainable development by acclamation. Thank you very much, this morning's session is over. Lunch is offered by the APSARA and we will resume as per schedule at 2.30 pm."

V- PUBLICATIONS

Comment from the Co-chairman for France: "I would like to start by thanking the Director of the APSARA National Authority and his team for the delicious lunch that we enjoyed. Notwithstanding, we need to keep up the work and there is no time for a siesta and I count on you to be attentive until late afternoon. Let me give the floor to Professor Beschaouch to introduce the first item of the afternoon, on publications."

V. I Introduction by the ICC Scientific Secretary, Professor Azedine Beschaouch

"Thank you, Co-chair. As usual, we inform on new publications concerning our site, but also on the Khmer civilization as a whole. We are delighted today to welcome the Director of Studies of the EFEO, Ms. Charlotte Schmid, who will present a book close to our hearts. It is the outcome of strenuous work from someone that has sadly passed away, but has left behind the scientific work of a great savant. I am talking about the Baphuon and the individual that wrote this book, the late Pascal Royère, with the support of the EFEO. I will later on take the floor again to talk about minor publications, but the lion's share is this posthumous tribute paid to this greatly missed savant, Professor Pascal Royère.

Comment from the Co-chairman for France: "Thank you Professor. Ms. Charlotte Schmid, Director of Studies at the EFEO, please, you have the floor."

V.2 Presentation by Ms. Charlotte Schmid, Director of Studies, EFEO: *Pascal Royère, Le Baphuon, de la restauration à l'histoire architecturale*

"Excellencies,
Ladies and Gentlemen,

It is a great honour for the EFEO and myself to introduce to this ICC session *Le Baphuon, de la restauration à l'histoire architecturale*, the latest book published in the EFEO Mémoires archéologiques series. This collection began back in 1926 with a dissertation on Banteay Srei, one of the sites where the EFEO worked in the early 20th century (*Le temple d'Içvarapura, Banteay Srei, Cambodge*, by Henri Parmentier and Louis Finot) among other temples such as Angkor Wat, the Royal Palace, Phnom Bakeng, the Bayon, Lolei, Ak Yum,

Baksei Chamkrong, Banteay Kdei, Banteay Samré, both Mebons, Pre Rup and etc. Pascal Royère is the author of this book on the Baphuon.

[slide] This publication is unique in many ways. It is the conclusion of a flagship worksite: the architectural study of the Baphuon is the concluding stage of a far-reaching project that brought together architectural studies and monument conservation which the EFEO framed within joint research in Cambodia. In charge of the Baphuon site for almost two decades, Pascal Royère passed away in 2014, his book unfinished. [slide] I will, on his behalf, say some words on the worksite he managed and the book he wrote.

Pascal arrived in Cambodia in 1993, hired by the EFEO after a tip from Jacques Gauthier, and worked under the supervision of Jacques Dumarçay. In 1995, he was entrusted with the restoration worksite of the Baphuon, following in the footsteps of several contractors. The Baphuon, a mountain temple or, in the words of Pascal Royère, 'the architectural event of the 11th century', was cleared as early as 1908 by Jean Commaille, an EFEO member and first conservator of the Angkor site.

[slide] The temple structure was not stable as it is made up of stone blocks weighing between 500 kg and one ton built around a sand heart. After initial clearing, the first collapse occurred in 1918. [slide] It precluded the collapse of a major portion of the north façade of the temple in 1943 and of the east façade in 1948. [slide] Ten years later, anastylosis was decided upon in order to consolidate the built-up areas and was carried out under the management of Bernard Philippe Groslier from 1960 until 1970, using concrete courses to strengthen the terraces of the monument.

Work was stopped entirely between 1972 and 1995, which caused further collapses. Once Pascal Royère reopened the Baphuon work site, the temple was 'an entanglement of collapsed stones with backfill banks in rare locations'. Within the framework of an MoU between the national Cambodian authorities, the APSARA National Authority and the Ministry of Foreign Affairs, the support of archaeologists outsourced by the Ministry of Culture and Fine Arts of the Royal Government of Cambodia and the assistance from 2009 of Marie Catherine Beaufeist, Pascal Royère managed up to 300 workers. Together, they restored this Hindu shrine built in the 11th century, which was then turned into a Buddhist temple in the 16th century with the construction of a gigantic reclining Buddha.

[slide] The site was completed in 2011 by Pascal Royère and is as much a reconstruction as a restoration, another beginning for the Baphuon, which successive stages of construction and evolution can be understood thanks to the EFEO's restoration work. The dramatic events of the 1970's in Cambodia destroyed the work site's notes and sketches, which included the original locations of some 300,000 blocks, dismantled and scattered all around the monument. To replace each of them, the Baphuon had to be analysed together with its entire site and similar types of construction of ancient Cambodian mountain temples.

New reconstruction techniques had to be invented, as the worksite made headway and knowledge improved on architectural history, including techniques to deal with the aesthetic, structural weaknesses and inventions. [slide] In the 11th century, sandstone overtook the use of laterite and brick as material to be more physically in line with the consistency of a divine mountain. Today, reinforced concrete stems, piles bored below the pavers and resins support the monument. The original reconstruction project did not include the reclining Buddha built from stone re-used from the initial Hindu temple. [slide] But the final restoration that we can see today on the Angkor site has respected the history of the monument in a country where Buddhism is the leading religion.

The work carried out at the Baphuon worksite in recent years seemed to have been that of a modest endeavour. Pascal Royère's restoration highlights the work of his predecessors that worked on the Baphuon since the 11th century, and the same goes for the

scientific work carried out by Pascal, which has been overtaken by his achievements as a restorer.

The Baphuon was inaugurated in 2011, but Pascal did not complete the script of his study. The text is based on his PhD thesis, which he presented in 2002 under the tutorship of B. Dagens: [slide] Pascal recycled some of the chapters, amending or adding. He also published several papers, notably in the EFEO bulletin, illustrating the work achieved. The EFEO felt it had to put on paper the work of a researcher from the school who worked in Cambodia for 17 years and was the actor of continuous collaboration between Cambodian and French institutions.

[slide] We have used files that we found on Pascal's several computers. We also based this book on a hard copy of his PhD. We cross-referenced as much as possible the electronic or hard copy scripts with documentation found either as hard copies (including photographs and notebooks or sketchbooks) or in an electronic format. These put together composed a type of scientific archive. André Royère, Pascal's wife, has given us some elements. Others were found stored at the EFEO centre in Siem Reap or in the office of Pascal in Paris and in the storage of the Library of the Maison de l'Asie.

[slide] To be honest, gathering all this documentation sometimes resembled a treasure hunt. As for the text, we decided to prioritise some elements over others that were not as complete. Pascal drew the overall architecture and indicated that he wanted to put in annex documents related to construction techniques. One chapter on the pyramid that he planned was missing. We sometimes used papers that he published to shed light on some sections of the text.

He was awarded the Great Prize of the Prince Louis de Polignac Foundation for his accomplishments in 2007 and in 2011 the archaeology prize of the Simone and Cino Del Duca Foundation crowned his work, an award shared with the EFEO centre of Siem Reap. [slide] In July 2011, His Majesty the King presided over the inauguration ceremony of the Baphuon, and also decorated him and the French Prime Minister François Fillon. King Sihanouk also attended.

Without the generosity of the sponsors, the people of Cambodia and the expertise of his scientific staff that were moved by the quality of Pascal's work, this book would never have been published. On his behalf and of the EFEO, I am delighted to thank the Cambodian National Authority, the APSARA, and the Ministry of Culture and Fine Arts of the Royal Government of Cambodia which enabled Pascal's scientific work to be made available for all. For Pascal, we would also like to thank all of those, Cambodians, westerners, scientists, contractors, architects, workers and fellows that, in one way or another, helped in completing this study that Pascal had gradually built.

[slide] Let me finish by mentioning further publications from the EFEO on Cambodia in several publications. This year, *Aseanie*, a publication from the Bangkok-based Sirindhorn Anthropology Centre, published under the responsibility of Christophe Pottier of the EFEO, a dossier dedicated to stratigraphic excavations at Angkor Thom which included an unpublished excavation report from Bernard-Philippe Groslier on the Royal Palace of Angkor Thom. The last issue of *Arts Asiatiques*, a magazine which collaborates with among others the Guimet Museum, has published two chronicles on pre-Angkorian statues that changed religious identities and turned a Buddha statue into a spirit or an avatar of Vishnu into Buddha. These sculptures are mirrors of the monumental transformation of what was one of the lives of the Baphuon.

I thank you for your attention."

Comment from the Co-chairman for France: "Thank you Director. I think that there is no better tribute to Pascal Royère than to introduce this book today during the ICC plenary session and I thank you very much for your presentation. We now reach the meat of the matter, although I can see Professor Beschaouch raising his hand."

Comment from Mr. Azedine Beschaouch: "Co-chair, if you do not mind and as is the tradition I would like to mention more publications. We are happy with this presentation, but we also have a very important paper written by the rector Ishizawa, our colleague and dean. It deals with a very important document, the only illustrated map of Angkor Wat dated from the 17th century. I wanted to show it because it is published in *Udaya, The Journal of Khmer studies*, which is edited by Professor Ang Choulean. The professor has brought some new input on this map that is one of the major sources for knowledge of the urban planning and mapping of Angkor Wat. Thank you."

Comment from the Co-chairman for France: "Thank you Professor. This publication is not as heavy as the Baphuon book. As I started saying earlier, we come now to the meat of the matter of the agenda, which is the general interest debate. It is a novelty in the reformed ICC procedures. This year, the management of Angkor Enterprise in charge of the ticketing system presents the subject. I will hand over the floor to Professor Beschaouch for the introduction, before Mr. Ly Se can take the floor; he is the Executive Director of Angkor Enterprise."

VI- GENERAL INTEREST DEBATE: NEW TICKETING SYSTEM AT ANGKOR

IV.1 Introduction by the ICC Scientific Secretary, Professor Azedine Beschaouch

"I start by recalling that the ICC asked Cambodian authorities and in particular the Ministries of Finance and that of Tourism to send today two Under-Secretaries of State and the Executive Director of Angkor Enterprise to answer our questions during this debate.

My introduction is meant to establish a distinction. We are in a World Heritage site, one of the jewels of it, and ticket sales generate profit. There is also an institution established by the government which is the APSARA National Authority, in charge of the conservation of the site and partner of the international community. I will not mention any figures, but millions of dollars have been invested in this joint enterprise.

As for Angkor Enterprise, it not only deals with ticketing, but also with a site that justifies the payment of a ticket. Without conservation there is no tourism and the site to be preserved includes forest, water and people. Once again, without all these elements there is no tourism. Thereby, one must not be confused between authorities. Angkor Enterprise manages and collects the revenues from tourism and on the other side we have the management and planning of a site that has warranted the management of the site under the responsibility of the APSARA. Japan and France are fully aware of how important it is to have a management plan in place when a site is inscribed on the World Heritage List. This management plan details the management of the site.

Today, we need some clarification and the help of the *ad hoc* experts who have far-reaching experience (France, Japan, India, etc.) and know the significance of the word

management. This last word does not mean simply collecting the fruit of tourism, the revenue from visitors but also taking charge of a site's past and present.

This is what this debate is about and if you allow us we will listen to our hosts and thank them for coming to answer our questions. Later on, some of us, and firstly the experts, will take the floor, with your permission. Thank you."

Comment from the Co-chairman for France: "Thank you Professor. I would like to invite Mr. Ly Se, Executive Director of Angkor Enterprise, to come to the podium to present."

VI.2 Angkor Enterprise and the new ticketing service by Mr. Ly Se, Executive Director, Angkor Enterprise

[OrigE] "Excellencies,
Ladies and Gentlemen,

[slide] Thank you for inviting us to present the structure of Angkor Enterprise. This is the content of the presentation, with the background and structure of our organisation, a progress report and future plans.

[slide] With regard to the establishment of Angkor Enterprise: After the private sector collected the receipt the job was handed over to the government. In 2016, by sub-decree number 11, dated 21st of January, the Royal Government of Cambodia established Angkor Enterprise, a public entity under the technical management of the Ministry of Tourism and the financial management of the Ministry of Economy and Finance.

The main functions of Angkor Enterprise are as follow: Responsibility for ticketing services, management of the collection and transfer of revenues to the national treasury (every day, there is no money spent); preparation of strategies relevant to revenue collection from selling tickets; preparation of the necessary infrastructure to ensure the effectiveness of revenue collection; management and checking of the tickets of tourists entering the Angkor Park; and management of sanitation services in the Angkor park area. These are the main functions of Angkor Enterprise, which is a public entity, not a private one.

[slide] We have set up a Board of Directors, which is the highest level of leadership of the organisation and set guidelines to see to the proper implementation and monitoring of the activities of the institution. The board is under the guidance of the senior Ministers of the Economy and Finance and of Tourism. Every month, we have a Board meeting chaired by the ministers of Tourism and Finance.

The board of directors is made up of seven members: The Representative of the Ministry of Economy and Finance, the Chair; the Representative of the Ministry of Tourism, the Vice Chair and finally representatives of the Ministry of Council of Minister, of the Ministry of Culture and Fine Arts, of the APSARA Authority, of Siem Reap Province and of the staff of Angkor Enterprise, all considered as members of the board.

The Executive Director of Angkor Enterprise manages day-to-day operations. I am the person in charge of this point.

[slide] Angkor Enterprise is structured into three units: 1) The Control Unit, composed of 243 staff responsible for managing and checking the validity of the entrance ticket of tourists entering the Angkor park and some of them are responsible for managing sanita-

tion services in the Angkor park area; 2) The Ticketing Unit, with 66 staff responsible for ticketing services; 3) the Administration and Finance Unit, with 12 staff.

[slide] We have set up 51 checkpoints in the Angkor area to manage and check the tickets of tourists entering the Angkor Park. We actually provide 22 toilets in the Angkor park area. We also have set up two teams to collect and pump out toilet waste every day.

[slide] This map shows you the checkpoints, here in red dots, where we check people getting in and out of the Angkor Park.

[slide] In April 2016, we moved the ticketing centre to a new location to improve services. In November 2016, we set up a new IT system to facilitate the management of the ticketing services, which includes the following: Management of revenues; management of ticketing data; management of advance payments; management of advance bookings and management of the reporting.

[slide] I would like to inform you that the data that we collect through our sales have enabled us to provide the APSARA with figures on the flow of tourists coming to the site. [slide] This shows you our new system.

[slide] According to the 2016 sales report, about 2 million people bought a ticket for a revenue of about 60 million US dollars. We also have figures on the countries visitors come from. The first one is China, second is South Korea followed by the United States, the United Kingdom, Japan, France, Australia, Thailand, Germany and Vietnam. China represents about 30 per cent of the tourists visiting Angkor.

[slide] In the future, we will continue to develop the IT system to facilitate online booking and a payment system through a digital platform that we are currently working on. This will enable us to collect data on the flow of tourists on each site. Currently we count physically, as we do not have a digital system in place yet. We will also continue to strengthen the management of ticketing services to provide a better service.

[slide] From February 1st, 2017, we will implement new entrance ticket fees as follows: One-day ticket: US\$37.00; three-day ticket: US\$62.00 (valid for ten days); seven-day ticket: US\$72.00 (valid for one month). The above fees are inclusive of a US\$2.00 contribution to Kantha Bopha Children's Hospitals Fund in each ticket. We will set up a tracking system on the tickets so that we can track on-site visitor numbers every day to help manage tourism flow. The system will be operational in a few months, as we are still working on the IT system and also on the Internet service provider for the area.

[slide] That is all. For more information please visit the Angkor Enterprise website. Thank you for your attention."

General discussion

Comment from the Co-chairman for France: "Thank you Director. The floor is now opened for discussion for those wishing to ask questions of the Director or make comments. Professor Beschaouch."

Question from Mr. Azedine Beschaouch: "Director, could I ask a question that is not to meddle with your business, but Angkor is one of the major sites in World Heritage and what is ongoing in Angkor is considered as an example for World Heritage throughout the planet. With regard to the new ticket price, it is certainly based on a market study, as this question will come up eventually and maybe as early as the next World Heritage Commit-

tee or in the corridors of UNESCO. People will say that the price almost double from US\$ 20 to \$37. How can you justify this?

When I was told about the increase I replied to someone by saying that this price has not changed for almost 20 years and that the dollar fluctuates, but unfortunately in the other direction, as it is now almost at parity with the euro. We need more explanations. I am not a specialist, but you are one and could you provide us with back-up arguments to justify the increase. Thank you."

Reply from Mr. Ly Se: ^[OrigE] "Thank you for your question. If you look at the price and the increase from US\$ 20 to US\$ 37 for a one-day ticket: This price of US\$ 20 dates from 1994, so the price has not changed. Look at the inflation and if you calculate US\$ 20 nowadays they would be close to US\$ 42. This is one of the justifications of the increase. This price increase has been thought about for the past four or five years and it is now only happening because the management of the ticket is now public. We have informed in advance tourism operators to give them time to prepare their customers. This is how we can justify this. Thank you."

Comment from the Co-chairman for France: "Thank you Director. I have a technical question to ask you. Do you know the distribution of the sales of one-day, three-day and one-week tickets; what is the respective ratio?"

Reply from Mr. Ly Se: ^[OrigE] "We have the figures. A one-day ticket represents about 58 per cent. Three-day ticket is 41 per cent and the one-week ticket is 0.7 per cent."

Comment from the Co-chairman for France: "Thank you, this is an interesting data. Mrs. Lemaistre, the floor is yours."

Comment from Ms. Anne Lemaistre: "Thank you very much Co-chair. As said Mr. Beschouch, UNESCO often uses Angkor as an exemplary site in major international meetings and to be honest this always makes me proud. Our concern is to know what will be earmarked from the revenues for conservation and maintenance of the site. I do not want to mingle too much in the State coffers, but we would like to know how much money will be allocated for conservation, to the APSARA National Authority, which is the body in charge of the management of the site and possibly to the Ministry of Tourism, as if I understood correctly the Ministry of Tourism is one of the stakeholders and, as we have the Ministry of Culture attending today, are they also on the receiving end? Thank you very much."

Reply from Mr. Ly Se: ^[OrigE] "Thank you for your question. The government has set up the earmarking of the revenue. I am responsible for collecting money that is then transferred to the treasury which is in charge of earmarking. Of the total revenue, 50 per cent goes to conservation. There will be a sub-decree that will set the guidelines for this earmarking. From my understanding, 50 per cent will be dedicated to the conservation of the Angkor Park and this money can be spent by the APSARA, the Ministers of Tourism and of Culture and Fine Arts and the provincial government. For the moment the sub-decree is still at the drafting stage and we will inform on its progress. Thank you."

Comment from the Co-chairman for France: "Thank you. Other questions? Your Excellency first, and then I will have one."

Comment from Mr. Ros Borath: "Thank you Co-chair. I am not well versed in terms of ticketing and pricing, just to state that in Cairo, for example, you have to pay for each monument. That is all I have to say on this item."

I just would like here to say and ask something. I fully respect this young body that serves the public, but with your permission, I would like to say that this institution needs training. I drive an official vehicle with an APSARA National Authority plate and you are

probably going to find this amusing, but I have been stopped twice while driving through the Park. The first thing is that the road in the Park falls into the public domain, moreover I am still on the staff of the APSARA National Authority and in the car was my spouse who showed the guards her Khmer ID card, but it seems that they did not know what it was.

A solution needs to be found because now every time I drive to the work sites I wonder whether I will be stopped or not. Thank you."

Comment from the Co-chairman for France: "This is more of a testimony than a question. Mr. Sum Map, please take the floor."

Observation from Mr. Sum Map: ^[OrigE] "Thank you Co-chair. This is more a practical than a technical problem. Not only the leaders of the APSARA, but also our international partners have the same problem. The problem has been put in discussion with director Ly Se. But even recently it was a shame for me in my capacity as Director General of the APSARA National Authority: I had the same problem. I raise this in order to apologise to all colleagues and international partners that have faced the same problem, especially when they want to enter the Angkor Park to do their job.

Recently during the visit of the Angkor causeway with Professor Lablaude, Philippe forgot his pass and was not allowed even 20 metres from the checkpoint. I spoke to the director of the checkpoint and he knew we were coming for work, not to visit, and he said that this was an order from the boss. The first time was with Professor Beschaouch. After 20 years, one would think that everybody knows who Professor Beschaouch is. We went together to Ta Prohm and he could not enter even the east gate of Ta Prohm. They know that I am the Director General and I cannot bring an escort with me and unfortunately Professor Beschaouch did not bring his pass, although he does not even need one as he is a Cambodian national.

More importantly the wife of our Co-chair: there was a problem with the stamp on the picture of her pass. They did not allow the wife of the Co-chair to visit the temple by saying she had a fake pass. My colleague intervened and said this is the wife of the Co-chair, the Ambassador of France. But we did not get permission. I raise this point in front of my colleagues, as it is a good opportunity with the presence of Angkor Enterprise and Ministries of Finance and Tourism representatives in order first for me to apologise to my colleagues and international partners on this issue and to convey this problem to Angkor Enterprise to rethink the way they work and especially with regard to the activities carried out by the APSARA National Authority and its partners. Thank you."

Comment from the Co-chairman for France: "Thank you Director General for your frank and honest intervention. I turn to the Director to ask him to consider how they could better train their staff. Discipline is ok but to think is better. This should be considered as a lesson learnt for your team. I noticed that Professor Furt has a question and I will ask mine after."

Questions from Mr. Jean-Marie Furt: "Let me talk about a technical point mentioned earlier, the issue of the price. I am not here to question the increase; that is not the issue. What I would like to know is how the price compares with the international market. Basically, when a product is expensive but is of quality then it is fine, customers will always buy it and the international market growth that the Director General mentioned this morning will continue.

On the one hand, there is a legal entity, Angkor Enterprise, responsible for fixing the price and which decided the increase based on the need for change. On the other hand, there is a body managing the site, the APSARA National Authority, which is in charge of deciding what the overall structure will be, linked with this quality. My question is to know how these two bodies will get along to move together in the same direction.

This was my first question. May I ask another one related to what I just said? When you showed us the structure of Angkor Enterprise, I noticed that there is one Department for Revenue Management. This is an important department, as presently, with regard to the tourism evolution of the site and of the territory, the country or a company can learn from the data and how to use it to acquire knowledge of their clients. Thereby, and based on the structure of your company, can you to set up and produce this type of data and make this Department of Revenue Management work? We mentioned this in a different approach, some two technical sessions ago if I am not mistaken."

Reply from Mr. Ly Se: ^[OrigE] "Thank you for your question. First, I would like to answer on your question regarding working together with the APSARA National Authority. We work closely with them to make sure that we have a close collaboration. We recognise that we have had some problems in terms of checking and we will improve the training of the staff."

As for the data, they are collected on the sales of tickets through an IT system. On the site itself, the data is physically collected on each site, which means that it may not be 100 per cent correct. Every day we collect these data and they are sent every month to the APSARA National Authority. These data are also on our website: from which country, what type of tourists, family, individual and etc. For the moment, the IT system is not fully installed so we are still working on this. I think that in the next six months we may have the exact data for each site and we will be able to know the flow of tourists in each site and at what time of the day and so on. The IT system will be much more accurate. Thank you."

Comment from Ms. Helen Jarvis: ^[OrigE] "Thank you very much. I am Helen Jarvis and I am an advisor to the government. Thank you for the presentation. Now, I am wondering about the comparison of prices with other frequently visited sites around the world. Maybe you could make this information publicly available to reassure people that are surprised by the price. One thing is the increase, but how does US\$ 37 compare with visiting other sites around the world?"

Reply from Mr. Ly Se: ^[OrigE] "Thank you for your question. Before we increased the price we studied the prices at other monuments throughout the world and the APSARA National Authority also did a study. The price increase does not come from Angkor Enterprise; it has been proposed by the government through the Ministry of Finance which studied for many years, four or five, before deciding on the increase. We only sell tickets; the price increase is not because of Angkor Enterprise itself, I repeat, it comes from the Ministry of Finance. Thank you."

Question by the Co-chairman for France: "Thank you. I have penned down your explanations on what you consider as catching up after many years of the price remaining the same. Now from the perspective of the visitors, if you increase the price this means that the service should be improved. They expect something more. When you pay more you want more and the simple argument of catching up on a price that did not increase for years falls short."

My question is the following: To compensate with the increase, will you offer additional services? For example, a small brochure or a map of the site of the type that is usually given to visitors for this type of site or even at a Museum, where you are usually given a map of the place. You talked about the restroom facilities located throughout the site; I am sure visitors would love to know where they can find them on a map so that they can wash their hands, and also other information such as restaurants.

Following the increase, have you planned to offer additional services such as a practical brochure, what is usually practiced across the world? Especially when you spend US\$ 70, you expect something in return and not just a sole green entry ticket. This was my question."

Reply from Mr. Ly Se: ^[OrigE] "Thank you for your question Co-chair. The government has planned this and is working with the APSARA National Authority and the Department of Tourism to improve services. We know that once the price increases we will need to provide better services and this is what the government wants to do. Currently we are working with the APSARA National Authority to improve site facilities and we are also improving the service at the ticketing points in co-operation with the APSARA National Authority. The APSARA National Authority also has a Department of Tourism and we work closely with them to improve the service; we are aware of this. Any price increase requires better services to attract more tourists. Thank you."

Comment from the Co-chairman for France: "Thank you. Are there any more comments or questions? I see one hand raised."

Question from Mrs. Oum Marady: "Thank you for giving me the floor. My name is Marady and I am the Deputy Director of the Tourism Department. I have a question and would like some further explanation on some points presented by Mr. Ly Se. He mentioned a new IT system that will enable an accurate analysis of the number of visitors. I would like Angkor Enterprise to take some time to meet with us and especially with the TMP team in order to know what the real data will be and that we will need to improve management of the site. Until now, we have been in the dark with regard to this project and obviously we would like to work with you. The Director also said that this system is being set up and I believe that they must work with the APSARA National Authority, the manager of the site, and not separately."

You mentioned services. We need to work together, but dialogue should happen upstream. Coming back to services and knowing that our Deputy Director is also a member of Angkor Enterprise, he suggested offering a map to visitors as one of the new services to help tourists better understand the site. This map will also give tips to visitors to venture into less visited places and introduce interesting locations, for example focusing on surrounding villages."

Reply from Mr. Ly Se: ^[OrigE] "Thank you. We had discussion on this subject with the Deputy Director General. Regarding the signs on temples and other maps or information, this is the responsibility of the APSARA National Authority. We are only responsible for the ticketing and the system and we will work closely in co-operation with the APSARA National Authority on this. We do not work on the site *per se*, only the APSARA National Authority can do this. This area is a conservation area that requires skills that we do not have and we can only work in co-operation with them."

With regard to the collect of data we have used them in the Park before and currently the system is physical, but the data is not accurate. We count how many people visit a site per day, but we do not have accurate data on the exact time of visit: For example, at 1 p.m. Angkor Thom is at peak time, or other sites at 2 p.m. Once we will have set up a tracking system we will know exactly at what time which sites are the most visited and know the flow of tourists and help conservation. The data will be collected and provided to the APSARA National Authority. The template that we used in the past will be improved. Anything that the APSARA National Authority needs we welcome, but the system is being developed and is not ready yet. Thank you."

Comment from the Co-chairman for France: "Thank you. Mr. Beschaouch, please take the floor."

Comment from Mr. Azedine Beschaouch: "Thank you Co-chair. I was delighted to hear that a sub decree will soon set the budget allocation. I would like to acknowledge the fact that 50 per cent is a sizeable number if I compare with what is practised in the rest of the world for culture and heritage. Please, make sure you give us arguments on backing up the increase, as several people here (Ms. Lemaistre, the UNESCO office and others) hold

discussions with the World Heritage Committee and, not officially, but taking you aside, people ask what is happening with the price increase at Angkor. So please, allow us to be able to answer the right thing.

I will not disclose any secrets here, but at the next World Heritage Committee meeting the royal government will present a new site, Sambor Prei Kuk, that will be backed by Her Excellency the Minister for Culture. She will attend the next meeting in Cracow in July and this is how the situation could be if I am the representative of another country: 'Excellency, with regard to Angkor, etc.' so we need to be able to give accurate answers. This is the reason the ICC needs to be sent a copy of the sub-decree once it is promulgated so that we can inform the international community, knowing that 50 per cent is an unusual figure. I am satisfied with it and we will see how the earmarking is done, but please make sure this is done as soon as possible, as this would enable Cambodia and its friends to answer in better conditions. Thank you."

Comment from Ms. Phoeurng Sackona: "Thank you Co-chair. I think this debate can go on forever if one does not stop it. Let me answer Professor Beschouch's comment. You need to know that the revenue earmarked for Angkor is an ongoing discussion at the Ministry of Finance. It has been on the table for a while and I have had discussions with the State Secretary of Finance to highlight the need to share the revenues for the conservation of heritage in Cambodia.

Angkor Enterprise is a newly formed body and we need to look at the form and not the substance. Both the APSARA National Authority and Angkor Enterprise are state institutions and inside Angkor Enterprise are representatives of the Ministries of Tourism and Culture. The debate must be on leaving them sufficient time, as there are communication issues and misunderstandings between the institutions, but this can only improve once the staff is better trained. These two institutions wish the best for Cambodia and this will be solved.

I look forward to the July meeting for the inscription of Sambor Prei Kuk and I hope that at that time we will be better informed on the earmarking of the revenue from the State coffers to the benefit of heritage in Cambodia."

Comment from the Co-chairman for France: "Thank you Minister, and we take note of your information. Ms. d'Orgeval for France, please take the floor."

Question from Ms. Francine d'Orgeval: "I would like to get additional information. Is the APSARA National Authority involved in the ongoing discussions at the Ministry of Finance? You mentioned 50 per cent, but is this sum only for conservation or does it include sustainable development and the APSARA National Authority's operational costs? This was my question. »

Intervention from Ms. Phoeurng Sackona: "Thank you. Could you repeat your question please?"

Question from Ms. Francine d'Orgeval: "The 50 per cent earmarked from the ticketing revenues will benefit the APSARA National Authority and the Ministries of Culture and Tourism, and I wanted to know whether this amount included sustainable development and the APSARA National Authority's operational costs."

Reply from Mr. Ly Se: ^[OrigE] "With regard to the 50 per cent allocation, it is for conservation, not for operation. This is the money which is available, but now the question is who is responsible for spending this money to make sure that it is spent sustainably? The 50 per cent has been decided; the sub-decree will set out who is allowed to spend this amount. The ministries of Finance and Tourism and the Council of Ministers are reviewing this and

that is what the discussion is about: The terms and conditions of spending as the earmarked sum of 50 per cent is sure. Thank you.”

Comment from the Co-chairman for France: “Thank you Director. Any other questions or comments? The floor is to the Director General.”

Comment from Mr. Sum Map : ^[OrigE] “Thank you again Co-chair. You may remember that in the past the revenue collection from the ticket sales was under the responsibility of the APSARA and when there were changes in general policy regarding revenue collection, we always made a presentation during the ICC plenary sessions. I think that Angkor Enterprise is not really independent because this is a World Heritage site and the ICC plays a very important role as an advisory body to the World Heritage site of the Angkor Park. My idea is that any future changes of the general policies of Angkor Enterprise should be presented during the ICC session. Thank you.”

Comment from the Co-chairman for France: “This is recorded. I can see one more hand raised and this might be the last question on this point as we need to move down the agenda.”

Comment from Mr. Sok Sangvar: ^[OrigE] “Good afternoon Co-chair, ministers and colleagues. I think we heard a lot about Angkor Enterprise. My point is to emphasize here the importance and need for co-operation. For any measures, especially in tourism co-operation is needed. We cannot have people going in all directions and having different plans and surprising the others.

We heard about flow management, data collection and I think that when the APSARA National Authority was established the motto was ‘conservation for development and development for conservation’. It is clear that the mission of the APSARA National Authority is not only about conservation. The question raised earlier on by Ms. d’Orgeval is a very good question. I think that obviously, whatever percentage of the funds will be allocated, it has to be not only for conservation, because conservation cannot survive without development and development cannot survive without conservation. It is clear that the revenue of the site has to be dedicated to serve the site, as it is what we call the golden goose egg.

My point here is, that of course collaboration is essential, especially in the field of data collection, as properly stressed by Professor Furt; how to manage, collect, use the data? I think the whole point of collecting data should be at the service of the temple, of the environment and of the people living in the Park. It must be an integral management; we know that in 2013, in fact it started in 2010, the government established a working group and invested funds to collaborate with UNESCO and ministries to design a Tourism Management Plan. And this document is to manage the site under a holistic approach.

Of course, now we have Angkor Enterprise, which we fully understand, as it is a decision of the government. We have to find ways to actually respect each other and work together and to reach not a compromise, but professional planning in terms of all actions being undertaken. I am actually surprised to hear about the data collection of the tickets, as it was actually an APSARA National Authority idea to collect data on visitors. In fact, in last year’s recommendations it was clearly mentioned that we have to actually come up with a better system on how to collect and understand data on visitors. I would like to request somehow that the ongoing project of Angkor Enterprise has to be discussed jointly. The point is: You can have a lot of data, but what do you do with it and who will use it? We have to define the goal before putting it into action and developing it.

My main point is really to discuss, as it is crucial to avoid problems that could create miscommunications. The last point is the website that we are pushing so hard to develop, as it is part of the service that has to be included when the price will increase. You may

think it is a small point from outside, but for us it is a step and we are also working on a brochure. This was already discussed with the board as we know the site, we know where to go, the flows, bicycle lanes and so on and of course we share this information with Angkor Enterprise so that they know what we are doing.

Once again, thank you for all your comments and collaboration is the key word for me. Thank you very much.”

Comment from the Co-chairman for France: “Thank you Mr. Sok Sangvar for these points for reflexion and information. I think it is now time to end the debate on this item unless there is one more comment. Apparently no.

I believe that to include this item in the agenda was a good idea, as it clarified a system still new for most people and that needs fine tuning and will certainly evolve in the context of price increase, with the latter raising questions.

I would like to express my gratitude to the Executive Director of Angkor Enterprise, who amicably answered some tricky questions. The floor is now to Professor Beschaouch for the recommendations, something we are perfectly familiar with and that is fine-tuned. The floor is yours.”

VII- ICC RECOMMENDATIONS

VII.1 Presentation of the 22nd ICC-Angkor Plenary session recommendations by the ICC-Angkor Secretary

ICC-ANGKOR RECOMMENDATIONS (26th Technical Session and 23rd Plenary Session Meeting January 22-23, 2017)

GENERAL RECOMMENDATIONS

The ICC:

- Expresses its satisfaction with the initiative taken by the APSARA National Authority to hold an information gathering meeting with the international teams on February 1, 2016. Taking account of the importance of regularly reporting on each activity, this meeting was intended to develop transparency, accountability for, and knowledge-sharing on the conservation, restoration, and research projects taking place on the historic site of Angkor. The ICC-Angkor recommends that this initiative be repeated on a regular basis;

- Expresses also its satisfaction with the APSARA National Authority's initiative to hold a seminar on the theme of Phnom Kulen on June 24, 2016, which was facilitated by the Japanese Co-chair of the technical session. Holding particularly this seminar enabled the experts and international teams to engage in more focused discussions on the common technical challenges relating to conservation, restoration, and development, which is in line with the ICC-Angkor general reform process. ICC-Angkor recommends that another thematic seminar be contemplated in connection with upcoming ICC-Angkor sessions;

- Expresses furthermore its satisfaction with the current effort to implement the Tourism Management Plan in order to cope with the increasing number of tourists visiting the site, while maintaining favorable conditions for the conservation of the archeological sites and the environment in general. The ICC-Angkor recommends that updated information concerning the progress made in rolling out the Tourism Management Plan be shared with all those concerned;

- Expresses at the end its satisfaction with the finalization of the data gathering and analysis in the framework of the LIDAR project. The ICC-Angkor recommends that the findings of this project be widely shared by the specialists engaged in conservation and sustainable development activities so that they can also be used to further the ongoing comprehensive research into the history of dynasties that reigned at Angkor. The ICC-Angkor also recommends that the data and software analysis systems be introduced to the ICC-Angkor and made it available to the different partners, in particular the APSARA National Authority and its relevant departments.

RECOMMENDATIONS REGARDING CONSERVATION

1. Prasat Sralao

Virtually abandoned in the forest and left unstudied except the minimum survey and photography work carried out by the EFEO in the 1930s, Prasat Sralao is in similar condition to Kapilapura which was covered by recommendations at the last ICC meeting in June 2016. Our recommendations for Prasat Sralao are parallel to those for Kapilapura. The site has been cleared off and its architectural elements are now well identified.

1. Minimally invasive cleaning of the site should be carried out, followed by mapping it out. Both operations must include the site's perimeter area, which perhaps extends far beyond what is currently assumed. Comparison of the tree-covered site with EFEO archive photos from the 1930's should provide a meaningful backdrop. The site should be cleared off carefully and provisional props be put in to secure the work and to prevent structural damage. The walls engulfed by trees must not be cleared off in this initial phase.

2. An inventory and documentation of significant scattered stones should be made. The existing stones should be compared with the EFEO photos and thereby identified, which may reveal the loss of some stone blocks. After completion of that comparative study of documents, further archaeological research should be advanced, together with a mapping of the site and its associated features. The survey and mapping should include the buried brick structures found along the access paths to the temple, as well as the mounds and settlement patterns barely visible along the ancient road.

3. As has been done at Kapilapura, the archaeological survey and conservation of this site should be assigned to the relevant team within the APSARA National Authority, which will submit reports to the ICC.

4. To be done before opening the site to visitors:

1) The leaning walls of the central and northern shrines should be properly consolidated; 2) site access must be facilitated; and 3) informational/explanatory signs should be put up to help visitors to identify the ruins. Point 1) is urgent. Vegetation clearance must be in harmony with the cultural landscape of the site, preserving the forest canopy over the complex and the atmosphere of the place, centered on the temple ruins. The typical landscape surrounding the temple, rice paddies, trees, ponds, etc., should also be worked into the integrity of the site.

5. The APSARA National Authority must provide the necessary equipment to ensure proper performance of the conservation work. The human resources needed for site surveying and protection must also be provided.

6. Just as with Kapilapura, Prasat Sralao must be viewed as a pilot project to be followed by other smaller temples or temple complexes that are found in the Angkor zone. It will be an 'example' for the restoration of abandoned structures that need to be cleaned, re-documented with sophisticated instruments, structurally reinforced, and clearly identified by signs prior to opening them to tourists.

2. Ta Prohm

The ad hoc experts recommend:

1. Continuation of the work must comply strictly with the same conservation techniques, methods, materials, and philosophy. Any interruption in site management must be avoided so as not to endanger the monuments under threat from heavy impacts of visitors and the natural environment.

2. A progress report on the previous phases is to be submitted to the ICC for review of the conservation work results. The new project, spelling out the objectives of the new phase, must also be submitted to the ICC for advice. As the restoration of one of the most popular monuments of Angkor is being handed over to the next generation, it is recommended to take stock of the operations and successful conservation achievements at Angkor by holding a workshop where the practices, techniques, analytical methods, materials, monitoring systems, and relevant data will be presented and discussed in order to establish the most consistent approach to conservation in the Angkor Park.

3. At least one expert in the field of stone conservation must be included in the new team. He will be responsible for supervision of sensitive operations involving both in-situ sculptured surfaces and the treatment of stone blocks used in anastylosis.

4. The color of joints between original stones must be carefully chosen in order to harmonize the visual appearance of the surface.

5. An urgently needed measure is to extend the visiting hours, morning and evening, on this high-traffic site. Management of tourist flows on the site must be well coordinated with the traffic spaces and flows just outside the enclosure. That is particularly true with regard to the anastylosis project on the south gate.

6. The bas-reliefs on lower walls in narrow passageways are under threat of disappearing due to the heavy flows of tourists who rub against the stone surfaces. Appropriate protection measures must be implemented as soon as possible.

7. Two trees inside the Hall of Dancers should be kept, in implementation of the previously adopted ICC recommendation, while the small bushes on the structure may be removed.

8. The ad hoc experts recognize the significance of the excavation project proposed by the Indian team on the external perimeters of the Hall of Dancers and recommend that the APSARA National Authority activate the procedures for approval to be given for the work.

3. Preah Khan: Southern Library, Eastern Section

1. The dead tree on the Southern Library, Eastern Section, should be removed by cutting it into smaller pieces. As the roots of the huge stump are wedged into the structure, cutting and removal of the tree should be done with minimum mechanical impact on the structure on which it had grown and on the western wall adjacent to the Hall of Dancers. Much caution will also be needed when removing the roots which reach deep into the structure. Removal of the old concrete props and wooden supports should also be carried out with the utmost care. For these interventions, we recommend that appropriate reinforcement be applied, using wooden shoring within the structure.

2. The restoration project and its timetable, as submitted to the ad hoc experts, are adequate and suitable for this severely damaged structure. The partial dismantling and reassembly of the redone laterite foundation, completed on the eastern half where considerable soil subsidence is observed, must comply with the principles of restoration and the philosophy of minimum intervention. Pins and clamps should be inserted only if necessary from a structural point of view. The ad hoc experts recommend that the work be started and request that they receive a progress report for the next ICC.

3.1. Preah Kahn: South Entrance of Shiva Complex

1. The original stone lintel found on the western courtyard floor is to be reset in its original position. A pair of columns made of new stone will have to be added to support the lintel.

2. The heavy pediment leaning out of the southern façade must be dismantled and reassembled.

The ad hoc experts recommend that bridge shoring be put in prior to the dismantling to secure the operation and immediate area. The bridge shoring, made of horizontal beams with oblique braces forming an X, is to be put between the pediment to be dismantled and the opposite one, in order to exert a counterforce between the two pediments. The shoring should preferably be covered by a roof.

4. Angkor Thom: Naga Balustrade on the Dai Chhnang gate

1. Anastylis is to be carried out, removing traces of the earlier concrete restoration work now decayed, as well as all the ageing concrete components that have a negative impact on the structure. The iron clamps, subject to rusting, must be removed and, where necessary, replaced by stainless steel dowels.

2. Archaeological excavation and survey operations are to be carried out by an APSARA National Authority team to find and collect scattered or buried components for reuse in the

anastylosis operation. While this is going on, it is recommended that the concrete chunks spilled onto the northern bank of the moat be removed. Excavations should be carried out in this area as well.

3. Prior to undertaking the final anastylosis operation, a trial reassembly should be done to verify the preciseness of the work and stability of the structures.

4. The addition of new sandstone must be limited to structural needs to support the balustrade and sculptured décor.

5. The base slabs of the balustrade are slightly lower than the surface of the bridge passageway. In some parts, certain slabs are missing entirely, lowering levels even more. If some missing slabs are found during the archaeological operations recommended in point 2, then they are to be put back in place. Otherwise, the lower levels should be left in its current state, with monitoring implemented to detect any problem relating to water runoff.

5. Bantey Srei

1. The signage should be at a scale in harmony with the cultural landscape of the site and take traditions into account. The ad hoc experts prefer the third option, the traditional “Sema” shape of stone slabs found around Buddhist temples. The material must be sandstone. The height of the sign may differ slightly according to the location selected, from 1.2 m to 1.5 m, but a similar shape is to be kept. The name of the monument with the UNESCO and World Heritage logos appears on the surface of the sign and, wherever possible, the date of the monument’s construction should be added.

2. Reconstruction of the side doorway of the east gopura was dealt with in a previous recommendation. Since the mortar used between laterite blocks can be removed, it is recommended that the blocks be cleaned and the mortar joints removed.

3. In the implementation of an earlier recommendation, reconstruction of the south-east corner of the enclosure is now underway. Here, however, we again find similar clay and mortar joints put in between the laterite blocks. The mortar must be removed. For the reconstruction, we recommend that the subtle but well visible ripples of the wall following the gentle curve of the substructure be retained.

4. In the previous recommendation regarding the site lapidarium, it was requested that the zoning of the site be studied to provide the basic information to decide where it would be located. The ad hoc experts again recommend that the zoning plan be made. Sculptures and artifacts on the ground outside the southern enclosure should quickly be housed in a safe place even before the construction of the lapidarium.

6. Angkor Wat: West Embankment

The ad hoc group of experts for conservation recommends:

1. As the embedded concrete pipe is not strong enough to bear the heavy layers of laterite, a concrete arch covering the pipe should be constructed so that the laterite layers are rested on a solid, flat base.

2. It was noted that some laterite blocks laid during a recent restoration operation supported by UNESCO/ITALIAN Funds-in-Trust, partially funded by the APSARA National Authority and operated by IGeS, are quite unstable and on the verge of collapsing into the moat. All the blocks

from the top down to the bottom of this section, notably the shifting blocks, should be re-dismantled.

Then, the embankment is to be reconstructed following to a large extent the method used earlier by IGeS. The connection between the IGeS-restored section and the APSARA National Authority-restored section should be carefully implemented, based on the previously used technique, under the supervision of the relevant department of the APSARA National Authority. The approach chosen to connect those two sections, with the overlapping, is to be submitted as soon as possible to the ad hoc experts for advisement.

7. Angkor Wat: Causeway dike

In view of the present situation and potential dramatic consequences if nothing changes, the experts recommend the following:

1) Clearly identify along the entire length of the façade the different historical sequences of construction and reconstruction of the structure.

2) Complete the test pit excavation on the inner backfill of the causeway in order to have one test pit corresponding to each span and to identify the differences in composition and state of decay.

3) An expert engineer must be brought in urgently to study, for each span, the different technical consolidation options best suited for the different situations encountered, keeping in mind that minimum intervention is the overarching principle, and that these options may use different technical approaches:

- Stabilization of the façade wall using deep anchorages without any dismantling.
- Partial disassembly and reassembly of portions of the wall too much deformed to be consolidated as they are.
- Underpinning of the façade wall.
- Consolidation of the inner backfill and masonry by injection of mortar.
- Extraction of any inner backfill of poor quality and replacement with backfill that can be strengthened with geotextile and geogrid.

4) In order to save on the cost of pumping out water, divide the present cofferdam into several sections corresponding to the different spans identified on the causeway dike and then phase in the work site, working from one section to the next.

8. Angkor Wat: Ceiling of the Churning Gallery project

Based on the latest sample produced, the ad hoc group of experts:

1) Recalls the still valid previous recommendations 9.1 to 9.4 made at the 25th Technical Session on December 25, 2015.

2) Recommends, for the ceiling work, the use of wooden members that are not too consistent among themselves, even having natural cracks or irregularities.

3) Stresses the need to further roughen the carving to make it more in line with the original fragment kept at Guimet Museum.

- 4) To achieve the desired matching, recommends that, based on the latest sample panel submitted, it be given a sharply more aged appearance by a rougher sanding operation, blasting from a greater distance with stronger pressure and using coarser sand.
- 5) Validates the final patina tests presented of which the final hue is very successfully achieved.

9. Phnom Bakheng

After a meaningful exchange with the WMF team and representatives of the APSARA National Authority, the ad hoc group of experts confirms the appropriateness and feasibility of the principle of reusing ancient stones for restoration of the small shrine towers and to this end makes the following recommendations:

- 1) Bolster the partnership between the WMF and the APSARA National Authority, the latter outsourcing specialized staff that could be entrusted with all or part of the necessary task of sorting the ancient on-site materials for their possible reuse in restoring the monument.
- 2) Select from this stock of available ancient material only *parallelepipedic (cuboid, rectangular) blocks of undetermined origin with no carving or moulding and/or of which the original location cannot be identified*.
- 3) With regard to the restoration of the small shrine towers, select small sized stones from the stock so that they can be better fitted to the small scale of these structures.
- 4) When using such materials for selective restoration work on these structures, pay close attention in the patterns to the original course heights, ornamental features and reliefs of those small towers while minimising as much as possible any re-cutting of the recycled ancient blocks used to that end. This will make it possible to display a maximum amount of ancient stone-cut surfaces. Identify by inconspicuous marking the different partially re-cut old stones to distinguish them from the original stones on these small towers.
- 5) Beyond the work currently underway to restore the small sandstone shrine towers, the ad hoc group of experts encourages WMF to partner with the APSARA team specializing in the restoration of brick structures, having in mind interventions that will be required in the years to come to safeguard and conserve the different brick towers surrounding the central pyramid, some of which are presently in a particularly worrisome condition.

10. Angkor Thom: East enclosure wall, Prasat Chrung Southeast:

- 1) In principle, the ad hoc group of experts is not totally against the use of reinforced concrete props as far as they are reversible but it may be aesthetically questionable in some cases. It must be remembered that they are temporary supports and should be inconspicuous, visually in harmony with the short-term presentation of the architectural structures concerned.
- 2) As for the entire Angkor Thom enclosure wall, 12 km in length, the group recommends that the APSARA National Authority earmark an annual sufficient restoration budget up to the scale of this structure in order to carry out final consolidation work in the many areas already identified exhaustively and in detail on the risk map.

11. Preah Pithu

To develop and round out this project, the ad hoc group of experts puts forward two categories of recommendations:

1 With regard to presentation of the site out from the Angkor Thom Royal Plaza, the group again draws to the attention of the APSARA National Authority, which has full jurisdiction here, its previous recommendation on the absolute need to improve the staging of the immediate area surrounding the information booth and Preah Pithu site, including relocation of the vendor stalls in accordance with the Royal Plaza reorganization master plan.

2 With regard to work on the built up and open areas on the Preah Pithu site, the group wishes:

- To receive by early May 2017 through the ICC Standing Secretariat, the detailed project for treatment of the cruciform terrace on Temple T for which the first phase of restoration is planned, so that its main features can be validated at the next ICC Technical Session, in keeping with the implementation timetable set for the project,

- To be able to review with the KOICA team, as far upstream as possible, any proposals that may require review to address the particularly sensitive technical issues regarding stabilization of Temple U in its current state as well as the various possible technical and landscape options being considered for re-establishing the hydraulic system on the site.

12. Ta Keo

With regard to recent developments on this work site, the ad hoc group of experts:

1) Notes the absence of stone conservation specialists during their recent visit in conjunction with this ICC meeting;

2) Notes that for this very specific type of work, there is a gap between the theory prescribed for the work and actual implementation;

3) Recommends as a matter of urgency that the project managers establish close contact with the APSARA Stone Conservation Unit and partner up with it in order to put back on track and redefine the intervention methods being applied here,;

4) Also notes over the past few months an overall drop in quality regarding newly cut stone and invites the project managers to build specialized capacity in the team now on site;

5) Given the scope and visibility of this major monument, illustrating the valuable contribution of the government of the People's Republic of China to the safeguarding of the Angkor monument site, the experts invite the ICC standing secretariat to hold an in-depth meeting in conjunction with the next technical session to enable the senior staff of the Chinese Academy of Cultural Heritage to share in a detailed interchange with the ad hoc group of experts regarding the different aforementioned points and the overall progress of work on this monument.

6) To that end, invites the Chinese team to submit a file detailing the operations planned for the years to come, including the planning and the different sets of specialized staff that will be called upon to share in them.

7) Finally, the experts express the wish that this program regain its former level of excellence in line with World Heritage norms, strongly recommend that the ICC and the APSARA National

Authority invite the Chinese Academy of Cultural Heritage team to postpone for now any new intervention on this work site with regard to stone conservation treatment and substitution with the use of new stones.

RECOMMENDATIONS REGARDING SUSTAINABLE DEVELOPMENT

13. Run Ta Ek Eco-village:

Acknowledges with satisfaction the work done on the eco-village and the numerous positive changes observed in terms of organization, agricultural production and improvement of the people's livelihoods;

Encourages the APSARA Run Ta Ek Team to continue these new initiatives and to facilitate access to the market for handicraft goods, fruit and vegetables.

14. Phnom Kulen National Park:

Appreciates the efforts of the Ministry of Environment to set a timeframe for the drafting the master plan starting in January 2017 with a UNDP-supported study supported as well as the establishment of a working group involving all the relevant stakeholders;

Invites the Ministry of Environment to make a presentation of the draft master plan at the technical session of ICC-Angkor scheduled in late 2017;

Supports the creation of new protected areas (Community Protected Areas and Archaeological Protected Areas based on the LIDAR survey results) in order to include the remaining undamaged forested areas as well as to enlarge some existing zones; and to take advantage of this project to clarify the responsibilities of each organization;

With that in mind, encourages the Ministry of Environment forest rangers to enforce compliance with the boundaries of the protected areas and to stop any encroachment damaging to the forested areas;

Supports ADF in its quest for a range of solutions to improving the livelihoods and alternative income-generating activities for the local people and encourages it to set up new partnerships to help it achieve that goal.

15. WAPCOS Project:

After learning out about the apparently already well-advanced WAPCOS project only during the ICC-Angkor session of January 24, 2017, the ICC:

1. Recommends that, prior to any implementation work, the full technical documentation relating to that project be submitted to the advisement of the appropriate APSARA National Authority departments, given the risk that putting in a dam upstream could have of undermining the entire historical hydrological system of the Angkor site that has been undergoing rehabilitation for years now.

2. Recommends that the opinion of APSARA's water management departments be submitted at the next ICC technical session in June 2017.

16. Angkor ticketing:

Management of World Heritage Sites may be carried out under various arrangements (public, private, mixed) but, in any event, the financial strategy is but one element of the overall policy.

It is recommended that, as soon as possible, a task force be established including the various stakeholders, in order to study the optimal technical alternatives for management of the site.

17. New ticketing services at Banteay Sreitemple:

Recommends that the proposal of setting up a new ticketing booth consider locating it outside of the core area of the temple and its parvis.

18. Tourism Management Plan:

Expresses its satisfaction with the proposals presented by the TMP team regarding the different projects relating to lighting and parking at Bakheng temple as well as to safety at the Southern Gate of Angkor Thom and recommends that the solutions discussed with the ad hoc group of experts and outlined in their report be implemented;

Reiterates the need to put in place a visitor observatory, to begin with on the most popular monuments, in order to get a better understanding of the visitors and, on that basis, start developing a specific visitor itinerary within Angkor Park

VII.2 Adoption of the recommendations by the ICC-Angkor presented by Mr. Azedine Beschouch

"Thank you Co-chair. Today, we discussed several items and the *ad hoc* experts' presentation was an analysis and also an accurate presentation of the recommendations. With your permission, we handed over the final draft and we tried to match the French and the English versions. As I said earlier, please look at the source text that is the reference. After as many checks as possible this is the final draft in three parts.

There are general recommendations that included some remarks made yesterday by the Japanese Co-chair during the technical session. After the general recommendations come those technical, more detailed, and those you heard this morning. They are divided into two parts; that for conservation and the other for sustainable development, as is customary.

If you allow me, we will now ask our colleagues what they think. First the APSARA National Authority, as it is the first affected by the recommendations and I would like to ask the Director General and his colleagues and all of those that read the draft, which is not final, to have their say. Please, once again, look at the substance not the form. This is not

a philological meeting and the *ad hoc* experts wrote the text and if our colleagues agree we would like them to approve it. Could you please give them a few minutes so that they can read the text and then if there are no observations we can move on to the adoption? Thank you."

Comment from the Co-chairman for France: "Thank you. As Mr. Beschaouch said, I give you a few minutes to study the text already presented."

Two minutes have passed. Are there any comments on the substance of the text? Professor Lablaude, please."

Comment from Mr. Pierre-André Lablaude: "On the general recommendations, there is one item that is mentioned and that we did not talk much about, the point on the availability of the LiDAR survey data. Are there any difficulties with their availability nowadays?"

Comment from Mr. Azedine Beschaouch: "As far as I know there are not any. The APSARA National Authority has appointed His Excellency Tan Boun Suy to collect them and he is in touch with the EFEO and other teams working on site and I do not believe there are any problems. What matters is the recommendation you drafted and the approval of the other experts. What is important is that this document should be used. The Secretariat will see to the submission to the Co-chairs of an item on the next agenda with a presentation of the APSARA National Authority on the outcomes of the LiDAR. Of course on behalf of the APSARA National Authority there can be more technical representatives, such as Mr. Evans from the EFEO, or from other teams that financed the project. This point is more a matter of principle."

Comment from Mr. Philippe Delanghe: "Thank you Co-chair. A point on the form in item 6 on the West embankments of Angkor Wat; on point 2 the 'funds-in-trust UNESCO-Italia' should be replaced by 'Italy' in both versions."

Comment from the Co-chairman for France: "This is on the form and I am sure the Secretariat will correct this."

Comment from Mr. Azedine Beschaouch: "Yes we will clean up all this as there is also a team called ITALIA that was presented yesterday by Dr Chau Sun Kérya yesterday. You are right, we will correct this."

Comment from the Co-chairman for France: "Thank you. I see one hand raised."

Comment from Mr. Tan Boun Suy: "To come back to point 6, with regard to the implementation of the work on the Italian side and that of the APSARA National Authority, which portion does not seem to have been restored properly? From the information I got, the Cambodian portion is in good condition and I do not understand why the Italian technique is recommended to be used."

Comment from the Co-chairman for France: "Who can answer this question? Professor Hidaka."

Answer from Professor Hidaka: ^[OrigE] "As I have already explained a little bit, in this connection zone there is not enough soil for compaction and if we follow the Cambodian option we need soil compaction for the base of the laterite steps. There is not enough soil and we cannot accept the traditional technique applied by the APSARA National Authority and should extend the Italian technology to make a better connection between the two parts. Is that enough explanation?"

Comment from the Co-chairman for France: "Does that answer your question?"

Comment from Mr. Sum Map: ^[OrigE] "Regarding this question, I have already talked to Professor Hidaka and with my Department of Conservation and we can accept the recommendation. Thank you."

Comment from the Co-chairman for France: "There are no problems for you? Dr. Chau Sun Kèrya, please."

Comment from Ms. Chau Sun Kèrya: "There is a typo on the Prasat Sralao recommendation; the 'r' is missing."

Comment from the Co-chairman for France: "The 'r' is missing and this will be corrected- this does not affect the substance of the text. 'Sralao' it will be. Let me ask this question for the last time: Are there any comments on the substance? No. I suggest adopting the recommendations by acclamation. .

The next item is the date of the next technical and plenary sessions. Mr. Beschaouch the floor is yours."

VII.3 Date of the next technical session

Comment from Mr. Azedine Beschaouch: "We talked about it in the quadripartite and as usual we need to take into account two dates. First, that of the World Heritage Committee held in Cracow in Poland in early July. We also suggest heeding the Cambodian side and the agenda of His Excellency the chairman of the APSARA National Authority. The week of the 20th of June would be a good time. Obviously, we also require the agreement of the co-chairs (France and Japan) as I remember that you honoured us with your attendance once in a technical session. We suggest the 20th until the 26th of June if you agree. We fix the dates so that people can free their agenda. Most people tend to come for the whole week, not just for one day. The definitive date will be set with the APSARA National Authority and the representatives of the embassies and after the agreement of the Chairman of the APSARA National Authority. From the 20th until the 26th of June."

Comment from the Co-chairman for France: "We do not have any problems with these dates if they are agreed by our friend at the APSARA National Authority."

Comment from Mr. Azedine Beschaouch: "Thank you. Today is just to give some dates and the Secretariat will officially inform later and in the minutes of the meeting we take note that both co-chairs agreed with the APSARA National Authority for the week from the 20th until the 26th of June. The meeting will last two days for the technical session, which will be an important event and be the 28th session. Almost history."

VII.4 Date of the next plenary session

Comment from Mr. Azedine Beschaouch: "The plenary is always held late November or early December. November should be avoided, as there is the UNESCO General Conference and its aftermaths. This year will be important with the election of the new Director General, the budget and etc. We should avoid the festive season and probably set temporarily the first week of December. The exact date will be given later. The week is set so people can make some time to attend.

As money becomes harder to get worldwide, sometimes flight tickets can be really cheaply when booked five or six months ahead. If you agree, we say the first week of De-

ember and later on with the agreement of the embassies and of the APSARA National Authority we will set the two exact days of the meeting.”

Comment from the Co-chairman for France: “I just repeat what I said for the technical session: As long as the APSARA National Authority agrees we should too.”

Comment from Mr. Azedine Beschouch: “I would like to ask for your permission to share some painful news. Yesterday I talked on behalf of all of those who met the late Mr. Khuon Khun Neay and we have been informed of his death and paid tribute by marking a minute of silence. Let me say a few words as a eulogy so that his family knows that we spoke about the man he was during our plenary session. May I do this without interrupting our debate?”

Comment from the Co-chairman for France: “Of course.”

VII.5 Tribute to His Excellency the late Mr. Khuon Khun Neay by Mr. Azedine Beschouch, Scientific Secretary of the ICC

“His Excellency Khuon Khun Neay was a trained active architect before embracing teaching at the University of Fine arts. An active member and dean, he taught architecture and especially that for conservation. He gradually joined the APSARA National Authority and remained 12 years there after an exile in Canada during the Khmer Rouge era. A Canadian citizen, he decided to leave his adoptive country and province, Canada and Quebec, to serve his country.

He joined the APSARA National Authority, where he started as a deputy director of one department. At the time there was the Department of Monuments and Archaeology 1 and 2 (DMA), and he headed DMA2. He was later promoted by His Excellency the Deputy Prime Minister and Chairman of the APSARA National Authority as Deputy Director General. He spearheaded for many years an important department, that of Land Management, and notably lands inscribed on the World Heritage and managed relationships with the people living on these lands.

I will give you two examples to illustrate that I was fortunate to learn many things in the field with him. He had an aura that allowed him to persuade the people living in the Park and all the people he met of the value of heritage. One more thing I learnt from him: As a Cambodian and Buddhist he understood the importance of monks. He established a personal relationship with monks in the Angkor Park who helped for the safeguarding of the Khmer heritage and in particular that of Angkor.

Six months ago he had to retire due to illness and travelled back to Quebec for treatment, where his wife lived. Until last week, his dear friend, Dr Hang Peou, attending here and also Deputy Director General and head of a department at the APSARA National Authority was being informed about his health daily and even sometimes talked to him over the phone. This is how some of his friends were kept informed. Sadly, yesterday we paid him a tribute and I am sure that His Excellency the chairman of the APSARA National Authority will decorate him posthumously to acknowledge his actions. His son and wife will remember a father and husband who, with honour, selflessly worked in favour of the conservation of heritage.

Thank you.”

Comment from the Co-chairman for France: “Thank you Professor for this tribute, which will move his family and former colleagues of the National Authority. We move on to the last

item of this plenary session and before I hand over the floor to Her Excellency the Minister or to the Director General to read out a statement from the Deputy Prime Minister and Chairman of the National Authority, His Excellency Sok An, let me make a few concluding remarks.”

VIII- CLOSING SESSION

VIII.1 Closing speech by the Co-chairman for France, His Excellency Mr. Jean-Claude Poimboeuf, French Ambassador to Cambodia

“Your Excellency Dr. Phoeurng Sackona, Minister of Culture and Fine Arts,
Excellencies representatives of the royal government of Cambodia and of the Royal Palace,
Your Excellency Dr. Sum Map, Director General of the APSARA National Authority
Your Excellency Ambassador Horinouchi
Dear colleagues from the diplomatic corps and of UNESCO,
Professors, researchers, experts
Ladies and Gentlemen,

It is the last segment of our proceedings and I would like to express my warmest gratitude to all of those who actively contributed to the smooth proceedings of this 23rd Plenary session of the ICC Angkor: The royal government and the APSARA National Authority for generously hosting this event, UNESCO for the technical Secretariat, my Japanese Co-chair, Ambassador Horinouchi and of course all the Cambodian and foreign experts who came from the four corners of the world and whose contributions are key to the operation of our ICC.

Next year, the ICC will celebrate 25 years and within a quarter of a century this forum has proved its strength and relevance, which have caused it to be considered as an international reference recently during the Safeguarding Endangered Heritage Conference held in Abu Dhabi on 2nd and 3rd of December under the co-chairmanship of the United Arab Emirates and France. I would also like, on a more personal note, to express my satisfaction, as I cannot forget that I had the privileged of attending the founding conference of the ICC-Angkor in Tokyo in October of 1993.

Looking forward to celebrating this new anniversary after that of 20 years in 2013, I am already satisfied with the achievements of the new formula of the ICC that was inaugurated two years ago. The fact that there are now two technical sessions per year with that plenary has enabled more substantial, efficient and regular work. This also has freed space in the plenary session agenda that can now focus on crosscutting or strategic themes, as was the case this afternoon with the issues related to ticketing and the financial aspects of the site. This session also enabled the conveyance of some useful messages.

As is the case at each session of the Angkor-ICC, we took stock on the follow up of the recommendations of the last session and I thank Professor Beschaouch for his irreplaceable role. As Co-chair, I would like to highlight that these recommendations are only worthy if they are submitted to an accurate and efficient follow up.

We have also been informed and interested in major progresses on the sites being worked on and of new discoveries. I congratulate the teams in charge for the quality of their work in the field and of their presentations during this session. I especially enjoy the emergence of new research fields such as archaeometallurgy.

We welcome the adoption of the Code of Conduct for Researchers. Beyond the researchers, research institutions should also endorse this code.

The ICC focused especially on issues related with the overall plan of development of tourism and more generally on recommendations linked more or less with development. The visual, architectural and landscape integrity of the site, the need for light infrastructures that respect this unique environment and the restrictions from the inscription on the World Heritage List are items that were underlined and recalled for the right reasons. Together, we are accountable and make sure that no development project or business will endanger the Angkor site and the model it has represented until now. We heard concerns voiced with regard to building developments in Zones 1 and 2. A reinforced dialogue between the APSARA National Authority and the local authorities is necessary and the ICC has grounds to discuss it.

We adopted new recommendations. Heeding this afternoon's presentations, I would like to underscore the significance of those regarding sustainable development of the site, the priority, I recall, of the third decade of the ICC. A very valuable recommendation deals with Mount Kulen National Park.

I also acknowledge with particular emotion, the presentation dedicated to the book *Le Baphuon, de la restauration à l'histoire architecturale*. This beautiful book is the outcome of 15 years of work dedicated to the most emblematic of Mountain temples at Angkor and recalls the role of Pascal Royère, who passed away too early and also underscores the input of the ICC and of my country in this endeavour. I am convinced that this book will find its deserved place in the scientific corpus on Angkor.

The memory of Pascal Royère gives me the opportunity to mention once again the training and skills transferred to the Cambodian authorities and in particular to the APSARA National Authority. Two years ago, my maiden participation to the ICC-Angkor, I recognized the inauguration of the Angkor Training Centre. This year I am delighted that this key dimension is still high on the agenda for most of us. This is the vocation of the Mebon work site, spearheaded by the EFEO that also includes a strong training module.

To conclude, I would like to renew my thanks for your unwavering active contribution and attention. Let us meet at the 24th Plenary Session of the Angkor ICC.

Thank you."

IX.2 Reading by Mr. Sum Map, Director General of the APSARA National Authority of the address of the representative of the Royal Government of Cambodia, His Excellency Dr. Sok An, Deputy Prime Minister, Chairman of the APSARA National Authority

"Distinguished Co-chairs,
Ladies and Gentlemen,

It is a great privilege to have been asked to read out the address for the 23rd Plenary Session of the Angkor-ICC from his Excellency the Deputy Prime Minister and Chairman of the APSARA National Authority, Dr Sok An:

Distinguished Co-chairs,
Dear colleagues,
Excellencies,
Distinguished hosts,
Ladies and Gentlemen,

Unfortunately, I cannot, against my will, attend this session. Nevertheless, I would like to briefly make a statement and recognize your always precious contribution to the conservation, enhancement and development of Angkor, jewel of the World Heritage List.

Ladies and Gentlemen,

Let me start by greeting for his first ICC, Mr. Hidehisa Horinouchi, Ambassador of Japan and Co-chairman of our ICC. He is most welcome in this Committee for which his country, Japan, has achieved a lot, as did his predecessors. We welcome him and wish him success during his stay in Cambodia.

I also acknowledge the presence of his colleague, the co-chairman for France, His Excellency, Ambassador Jean-Claude Poinboeuf. I must tell the truth that his personal action and his wisdom have contributed to consolidating the cohesion of the ICC and improving its operation. We are still in January, so I am at liberty to express to Excellencies Co-chairs and to all members of the ICC my warm wishes. Let us hope that 2017 will be a smooth, healthy and fulfilling year.

Excellencies,

As I did not attend, I will not analyse as I always do the highlights of the agenda that I received and browsed. The participation of young Cambodian professionals to the presentation of ongoing works on conservation and sustainable development at Angkor is a motif of great satisfaction.

This leads me to insist on the key point that is training and on the need to increase the number of technicians that are in charge of monuments, forests, historic hydraulic networks and the relationships with the people living on the site inscribed on the World Heritage List.

Distinguished Co-chairs, Excellencies, Ladies and Gentlemen,

I said that I would be short. To conclude, I express my congratulations for the procedures of the Plenary Session of the ICC and I express a personal wish, which is close to my heart, that is to be with you for the next session in June.

I thank you for your attention."

Comment from the Co-chairman for France: "Thank you Director General. Before concluding this session, I would like on behalf of my Co-chair and myself to thank you and to convey our best wishes to His Excellency the Deputy Prime Minister and to thank him for his address and to strongly express our hope that we will see him at the next session in June.

Let me end by wishing you all safe travels and to see you again in June for the Technical Session and in December for the Plenary Session.

Thank you very much. I declare the plenary session closed."

**** Conclusion of the 23rd ICC Plenary Session ****

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168	Mr. LY Se	Executive Director	Angkor Enterprise	
169	Mr. LY Vanna	Department Director	APSARA National Authority	
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181	Mr. MOM Saran	Office Director General	APSARA National Authority	
182	Mr. MOT Lina	Groupe de préparation logistique	APSARA National Authority	
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218	Mr. SAN Sivatha	Vice Chief office	Ministry of Land Management	
219	Mr. SAO Thy	Cameraman	SEA TV	

220	Mr. Sebastian KERRIDGE	Technical Advisor GIZ	GIZ	
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233	Mr. Soy Channorith	Département de Conservation des Monuments d'Angkor et de l'Archéologie Préventive	APSARA National Authority	
234	Mr. SUM Someth	Dép. de la Communication	APSARA National Authority	
235	Mr. Sun Pisal	Département de Gestion de l'Eau	APSARA National Authority	
236	Mr. SVAY Piseth	Deputy Director of Department	APSARA National Authority	
237	Mr. TAN Sophal	Deputy Director of Department	APSARA National Authority	
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241	Mr. TIN Tina	Deputy Director of Department	APSARA National Authority	
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246	Mr. Vincent BERJOT	Directeur Général du patrimoine France	Ministère de la Culture	
247	Mr. Visu POSHYANANDANA	Senior Architech	Ministry of Culture, Thailand	-
248	Mr. Vratish Goel	Project Manager	WAPCOS Ltd	
249	Mr. Wen Dayan	Director of Foreign Affairs	CSA	
250	Mr. Xu Yan	Vice Director	CSA	
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259	Mr. YUN Savoeun	Cameraman	TV3	
260	Mr. YUNN Daravuth	staff	National Authority for Preah Vihear	
261	Mr. Yunus Arbi	Head of Sub-director World Heritage & Culture	Ministry of Education and Culture	-

262	Mr.Liu Shuguang	Deputy Administrator	China	
263	Mrs Joyce CLARK			
264	Mrs Sulata Mitra SAKAR			
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267	Mrs. Florence EVIN	journalist	LE MONDE	
268	Mrs. Francine D'ORGEVAL	Ministère	Ministère des Affaires Etrangères	
269	Mrs. Heang Sokkim	Direction des Finances et de la Comptabilité	APSARA National Authority	
270	Mrs. Johnson KITTY	English teacher	APSARA National Authority	
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272	Mrs. MAO Loâ	Chargée de mission	APSARA National Authority	
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282	Ms. EM Srey Peou	Directrice Adjointe du Musée de Textiles Asiatiques Traditionnels	APSARA National Authority	

283	Ms. Federica GRIFI	Technical Advisor GIZ	GIZ	
284	Ms. Helen Jessup		FOKCI	
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301	Ms. YOO Hyunok	Researcher	Korea Cultural Heri- tage Foundation	
302	Ms. YUAN Mengxi	Archaeologist	CSA	

303	Ms. Chi Qun	Engineer	CSA	
304	Ms. Ek-on KHUNACHAROEN	Minister Councillor	Royal Thai Embassy, Phnom Penh	-
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329	Son Exc. M. Jean-Claude POIMBŒUF	Ambassadeur de France au Cambodge	Ambassade de France	
330	SRENG Rithy	Groupe de préparation logistique	APSARA National Authority	
331	THONG Sarun	Groupe de préparation logistique	APSARA National Authority	
332	TOUS Somaneath	Directeur de Département par intérim	APSARA National Authority	
333	VANN Man	Groupe de préparation logistique	APSARA National Authority	
334	Ven CHUM Kimleng	Monk	Siem Reap Province	
335	Ven. CHHUN Chhoeun			
336	Yiannis AVRAMIDES	Program Manager	World Monuments Fund	
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APSARA NATIONAL AUTHORITY 2016 ACTIVITY REPORT

INTRODUCTION

In terms of human resources, 2016 has been an emotional year for the APSARA National Authority, as we grieve the passing of the late Ms. Tep Vatto, Director of the Department of Urban Heritage Development of Siem Reap Town. Throughout her action, she has reshaped the face of the town in particular developing the City River's banks and has left a legacy (such as Road 60 M, the Naga Bridge 'Spean Neak', helped preserving the urban city centre, and etc.

Professor Giorgio Croci an expert in conservation had to resign for health reason after twenty years serving Angkor. He pioneered works in Angkor and became one of its veterans. We will miss his dedication to Cambodian heritage and especially his renowned expertise in structures and stability

Activities for the safeguarding and development of Angkor have ploughed on in 2016 with special focus on a key site of the history of Angkor, Phnom Kulen, which has mobilised national authorities and international experts.

The Ministry of the Environment has taken the lead in the setting of a Master Plan for the site, the *ad hoc* group of experts in sustainable development stayed a couple of times on site to assess the Archaeology and Development Foundation (ADF) Project which not only carry out excavations but also has designed a programme to protect the environment while engineering new income generating farming activities to support the livelihoods of the locals.

I. Department of Administration, Personnel and Material

The Department of Administration, Personnel and Material is divided in offices and units and carry out the following tasks:

I.1. The Office of Personnel and Training:

The officials, employees and workers of APSARA National Authority are:

N.	Rank	Number	Others
1	Civil servants attached to the Office of the Council of Ministers	86	
2	Permanent employees, short-term contract staffs	1,352	
3	Tourist Agents, Forest Rangers and Workers (monthly)	462	
4	Workers (weekly)	763	
	Total	2,663	

For 2016, the movement of personal is as follows:

- Recruitment of 633 people (staffs, workers, permanent workers, agents and rangers);
- Draft of 322 letters related to movement of staff (staffs, workers, permanent workers, agents and rangers);
- 9 staffs on work leave, came back to work; 13 have been suspended and 11 staffs have been transferred to the other departments;
- The salary of 388 staffs was increased;
- Draft of 1,291 contracts for staff, 970 assignment and 701 mission letters, and registration of 402 decisions;
- In order to check staff attendance at work, 55 fingerprint machines have been installed with registration of 562 finger prints of new hired staffs and the removal of 201 finger prints of staffs who left the company either workers, agents and rangers.

I.2. The Office of Administration (OA)

The current flow of documents for 2016 received 8,413 letters and documents from the APSARA National Authority and from outside institutions, and 779 answers were drafted to reply to different requests from external institutions. Thus, 5,819 have been delivered to other national institutions.

The OA has organized 148 meetings at the APSARA National Authority and prepared the 2016 yearly report.

I.3. Service Center of the APSARA National Authority (SCA)

- The SCA has received 1,069 applications related to tourism and cultural services; among the 1,051 requests, 1,045 permissions have been delivered, 6 requests were refused and 18 cases are under treatment. The 2016 revenues of these services are 335,417.50 dollars USA.
- In the protected zones of the Angkor Park, 812 requests of construction were submitted; 309 permissions have been delivered, 237 requests were refused, 266 are in progress and 211 cases received notices.
- 413 requests of administrative services were received: 380 permissions were delivered, 16 refusals and 17 cases are in progress.

I.4. Unit in charge of electricity and garages

- Repair of electrical circuits of 250 posts and change of 47 electric bulbs;
- Completion of installation of the main electrical cable at the north of the Apsara's roundabout at 60m street;
- Cooperation of Provincial department of electricity to extend the network to the villages located in the Angkor Archaeological Park;
- Replacement of headlamps and light bulbs in the Center of APSARA National Authority;
- Set up the power supply system for the event of Angkor Sankranta 2016;
- Repair of 459 vehicles and 50 motorcycles, and maintenance of 239 vehicles.

II. Department of Agriculture and Community Development

II.1. Activities of the natural Agriculture at Spean Angkor Station

II.1.1. Compost making

The production of 86 compost mounds were distributed to the different units of the APSARA national Authority: 20 T to Run Ta Ek project, 15,50 T to the Department of Forestry and 1 T to the Department of Water Management.

II.1.2. Vegetable section

- Harvest of 07 kg of Okra;
- 08 rows of white radish;
- Harvest of 19 kg of long bean.

II.1.3. Fruit trees

- Planting of 40 bananas tree;
- Maintenance of 14 lemons trees;
- Maintenance of 20 Noni (Nhor) trees;
- Planting of 40 jack fruit trees;
- Maintenance of 90 Persian lilac trees (sdavv);
- Maintenance of 30 cashew nuts tree.

II.1.4. Industrial plants

- Maintenance of 20 rubber trees;
- Maintenance of 8 cotton trees.

II.1.5. Animal feed plants

- The animal feed plants are grown over 108 square meters.

II.1.6. Livestock farming

- 08 cows;
- 13 chickens.

II.1.7. Protection of environment

- 400 bags of garbage and plastic were collected during environmental campaign led by Mr. Mourad Djehane.

The difficulties arise from the lack of manpower for in agricultural sector.

II.2. Community development

6 agricultural development agents based in 5 districts provide regularly assistance to the farmers living in the protected zones of Angkor Park:

II.2.1. Chicken raised with KEM (Khmer Effective Micro-organisms)

- Provide technical advices to the households raising chicken;
- Assistance and monitoring about 262 times to 376 families.

II.2.2. Growth of vegetable naturally

- Assistance by giving technical advices (about 250 times) to 330 families living in 5 districts for planting vegetable naturally.

II.2.3. Compost making

- Technical advices and encouragement to 189 families.

II.3.3. Saving group

- Coordination of 86 saving groups composed by 958 families in 5 districts, holding a total capital of 650,561,000 riels (it is about 162 640 \$).

II.3. Environment

- Preparation of course training and cooperation with the school directors to draw awareness of pupils on the protection of environment;
- Participation in the training on internal Audit of APSARA National Authority for one week;
- Attendance in the workshop on international standard ISO14001 of APSARA National Authority and Japanese's quality insurance Institute;
- Adjustment partly on the key environmental aspects in some programs;
- Making monthly, quarter and yearly reports of EMS;
- Conduct of internal audit in the Department;
- Preparation and definition the environmental program for 2017.

III. Angkor International Centre for Research and Documentation (AICRD)

III.1. Documentation

- Launched of AICRD websites: angkorarchive.info and apsara.library.angkorarchive.info;
- Insertion of 796 book covers and book contents to the library online catalogue.

III.2. Preparation of Memorandum of Understandings (MoU) with International partners

- MoU prepared by AICRD approved by Royal Government during 2016

No.	Institutions	Topics	Date of approval
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1	APSARA & EFEO	Etude Géoarchéologique du réseau hydraulique de la basse plaine du Stung Puok (GASP)	20 April 2016
2	APSARA & EFEO	Fondre pour le Roi : étude archéométrurgique de l'atelier de bronziers du palais royal d'Angkor Thom	05 July 2016
3	APSARA-NARA-NRICPT	Joint research and Training related to conservation of Angkor Monument	13 June 2016
4	APSARA & GIZ	Setting up of a permanent unit of experts on restoration and conservation of monuments at the historic site of Angkor	27 June 2017
5	APSARA & SOPHIA	Restoration of Angkor Wat Causeway Strengthening capacity building of APSARA staff	
6	APSARA & KANAZAWA UNIVERSITY IN JAPAN	Educational and academic exchange	
7	APSARA & INRAP	Cultural and scientific research in Angkor Park	21 Dec. 2016
8	APSARA & IRANGKOR	To study the role of iron production and consumption in the history of the urban complex of Angkor Park and surrounding sites in Siem Reap province.	29 Dec. 2016
9	APSARA-Guangzhou Urban Planning Design & Survey Research Institute	Joint research on the Digital Angkor Thom project.	May 2016
10	APSARA-China (Guangxi)	Improvement of Agricultural techniques at Run Ta Ek Eco-village	19 Sept. 2016

III.3. Research

- *The Angkor Code of Conduct for Research*: the three versions in English, French and Khmer are finished and the English version has been adopted by the 23rd Plenary Session and the 27th Technical Session of the ICC-Angkor on 24th and 25th January 2017.
- *On Tangible heritage*

International Field School

Participants	Date	Venue	Objective
14 trainees from 10 of East Asian Summit Countries	28 Nov-07 Dec 2016	Koh Ker temple	. Identification of the ancient settlement & Hydraulic system of Koh Ker . Royal Palace Structure

Archaeological Excavation

No.	Collaboration with	Date	Venue	Topic
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1	The Global Center of Archaeological Study, University of Malaysia	June 2016	Sala Kravan (Banteay Srey District)	<i>Iron smelting site (Study of the metallurgy of Khmer empire)</i>
2	Sydney University (Great Angkor Project)	June-July 2016	Angkor Wat	<i>Human settlement around the temple</i>
3	Nara National Research Institute for Cultural Properties	13-17 August 2016	Kambo Or village, Khvao commune, Chikreng district	<i>Study of brown glazed ceramics</i>
4	National Authority Preah Vihear & ISEAS (Singapore)	28 Nov.- 7 Dec. 2016	Koh Ker temple	<i>-Identification of the ancient settlement &Hydraulic system of Koh Ker -Royal Palace Structure</i>

Participation to International Conference

No.	Conference name	Date	Venue	Topic presented by
1	Heritage of Ancient & Urban Cities, Giving the Voices to local Priorities	14-15 March 2016	ISEAS Singapore	Dr. Tan Boun Suy <i>"How to ensure sustainable agricultural Development in World Heritage Angkor site?"</i>
2	id	id	id	Dr. Ea Darith <i>"Regulators, Non-Regulators & local Communities"</i>
3	id	id	id	Mr. Im Sok Rithy <i>"Cross culture & Cross border education Program"</i>
4	World Archaeology Congress	28 Aug- 03 Sept 2016	Kyoto	Dr. Ea Darith 1. <i>"Angkorian Infrastructure, Industry & Ecological impacts"</i> 2. <i>"In the Service of the State, Khmer stoneware Production & Distribution"</i>
5	Early State & Cultural Relationship of Mainland South East Asia	12-17 Nov 2016	Thailand	Dr. Ea Darith <i>"Dating & Analyzing Koh Ker Settlement and Activity"</i> Mr. Im Sok Rithy <i>"Study of ancient industry of the Khmer empire: Excavation at Angkor Salakravan Iron Smelting site."</i>

Publications in Proceeding paper of International workshop on Heritage of Ancient and urban giving the voice to communities, ISEAS, Singapore 2016

. Tan Boun Suy: "How to ensure the sustainable agricultural development of Angkor World Heritage?"

. Ea Darith: "Regulators, Non-regulators and local communities"

. Im Sok Rithy: "Cross Culture and cross border education program from living Angkor Road to the Cultural Relationship of Mainland Southeast Asia".

- *Intangible Cultural Heritage*

. Traditional ceremony and daily life of Angkor inhabitants: 10 topics reported from 3 villages;

. Research on rituals objects used in traditional ceremonies.

IV. Department of Forest management, cultural landscape and the Environment (DGFPCE)

In 2016 the Department of Forest Management, Cultural Landscapes and the Environment achieved the following objectives:

IV.1. DGFPCE Human resources

The staff is composed of civil servants, contracted staffs, rangers and workers or 267 people of which 47 are women with the following attributions:

N°	Classification	Amount	Miscellaneous
1	Management	05	
2	Specialists	29	1 on unpaid leave
3	Administrative staff	03	
4	Drivers	14	
5	Contracted officers	93	
6	Workers hired on a weekly basis	123	
	Total	267	1 on unpaid leave

IV.2. Activities and outcomes of 2016 implemented works

IV.2.1. Forest conservation and development

- Surveys and checking of land located on the protected zones I and II have been finalised and divided into 17 blocks to simplify the work. These 17 blocks represent a total area of 4015.51 hectares including 2132.75 hectares of farming land; 9841.98 hectares of settlements, 210.85 hectares of monuments and 2324.80 hectares of wet land.
- The survey of 4,912 trees has been completed of which 181 species have been identified and 29 trees are at risk. They are located near 14 temples of the Angkor Park and an inventory map was designed. *Prasat* Bey trees inventory is ongoing with 123 trees listed;
- Maintenance works on 8 firebreak roads over a total length of 6,635 metres and mapping of 7 firebreak roads over a total length of 6,365 metres.
- Maintenance of plant and tree naming tags. Out of the 716 tags, 51 are in bad condition.
- Survey of the forest of the Angkor Thom site of which 85 hectares need improvement;
- Identification of forested unoccupied lands near *Prasat* Preah Ko, at Banteay Samre and to the north of *Prasat* Krol Ko; a total of 62.39 hectares can be reforested;
- Collection of 474.1 kg of seeds grown in three nurseries and of 70,357 seedlings in one year;
- Planting of different tree species (60,444 seedlings) in the Angkor site with 39,230 seedlings planted by the department and 21,214 seedlings planted in co-operation with other institutions;

- Preventive activities against breaches of the law in forested land by stopping deforestation activities for land grabbing to build or farm: A total of 12 cases of which three involved the illegal cutting of trees, five forest clearing and four other cases of firewood cutting.
- Control of 15 locations in the Park: Solid and liquid waste pollution of the environment was noticed 36 times.
- Raising awareness on environmental protection: A total of 31 awareness sessions were organised targeting monks, shopkeepers and villagers living in the Angkor Park. The total amount of participants reached 959 with 626 women;
- Awareness raising activities on protecting and understanding the forest in five villages or 278 people with 118 women.

IV.2.2. Management of trees at risk and cultural landscapes

- Regular monitoring of trees presenting risks located along the big and small circuits;
- 273 dead or fallen trees cut up following heavy wind and rain and pruning of branches of 1,577 trees.
- Identification of 137 sick trees located on the big and small circuits from the eastern facade of Angkor Wat until Preah Khan in order to map these trees and treat them. A total of 893 trees have been treated of which 261 were recently detected.

IV.2.3. Works in 2017

- Forest conservation and development:
 - . Growth of 75,000 plants in the three nurseries with 25,000 in the 8 hectares nursery, 25,000 in that of Ta Keo and 20,000 in Mondul Bey nursery.
 - . Planting of 20,000 trees in unoccupied public land covered with damaged forest and sustain growth in the dry season;
 - . Conduct of the inventory of historical trees in the Angkor Park;
 - . Inventory of trees inside the enclosures of temples and throughout the Angkor Park;
 - . Monitoring of the health of the trees and provision of necessary treatments;
 - . Co-operation with the local authorities to determine the delineation between the forests and the villages in order to prevent any land grabbing and illegal deforestation;
 - . Regular awareness campaign to communities living in the Angkor Park on the usefulness of the forest in order to prevent any misbehaviour.
- Management of trees at risk and of cultural landscapes:
 - . Regular monitoring of the health of trees at risk and scheduling necessary cutting and pruning in order to prevent any damage to temples or visitors;
 - . Planning and public announcement of pruning operations;
 - . Research on cultural and natural landscape from the Khmer traditions and history.
 - . Training of communities living in the forest to gain their contribution towards the protection and conservation of cultural landscapes.

V. Secretariat of Community in the year 2016

V.1. Communication Work

- 5 groups of Community agents carried out awareness campaigns on heritage protection in 53 villages of the Angkor Park with the participation of 4 451 inhabitants;
- Awareness campaigns on heritage protection in 7 universities of Siem Reap with 756 participants.

V.2. Building permission Service

- 447 cases have been resolved on spot for building or repairing houses:
 - . Srok Bakong: 140 building or repairing permits have been delivered;

- . Srok Angkor Thom: 7 building or repairing permits have been delivered;
- . Srok Puork : 24 building or repairing permits have been delivered;
- . Srok Siem Reap: 232 building or repairing permits have been delivered;
- . Srok Banteay Srei: 44 building or repairing permits have been delivered.

V.3. Humanitarian Work

- Distribution of 1 899 delivery kits for women living in the Angkor Park, the total budget expensed of 37 980 000 Riels are the personal gift from the Deputy-Prime Minister and Madam Sok An;
- Distribution of gifts to support 7 families whose home were affected by the fire and the squall;
- Donation to support 2 families whose houses are hit by lighting;
- Contribution of 800,000 Riels in participating to the traditional ceremony at Ampil Commune;
- Distribution of drinking water to people lacking of water (about 35,000 liters) during the dry seasons;
- Donation of 20 metal corrugated sheets to support poor families for covering their kitchen;
- Donation of 440 tiles to subsidy to the local authority for roofing the Salachhortean in Leang Dai Commune.

V.4. Cooperation with the local authorities

- Attendance in national public and consultative forums of the district council and Siem Reap provincial, 17 times.

VI. Angkor training Centre

The Annual Report 2016, which covers the period from January to December 2016, focuses on facilitating, coordinating and organizing seminars and training courses. The Angkor Training Centre (ATC) has conducted ten seminars/training courses held in 2016 and there were 297 participants (including 56 women) awarded the certificate of attendance. The activities of seminars/ training programs are briefly described as follows:

VI.1. On-going Training Courses:

VI.1.1. Training course on "Conservation and Restoration and Iconographic Assets"-ITALIA Team

After building up the capabilities of the technical staff specialized on heritage restoration and conservation of iconographic assets following the international standards the training courses in the restoration of ancient Khmer art are part of the continuing education of the ITALIA group, which is already operational in the field. The goal is to perfect them in the more advanced techniques for becoming trainer of the trainees to be recruited.

The training courses are lectured by the Italian Professors from different universities of Italy, led by Prof Lorella Pellegrino, and started since January 2015.

After the theoretical courses, the practical exercises are carried out on 3 locations to allow the trainees to work in different approaches of restoration:

- . In Angkor conservation compound where is located the Laboratory and the Exhibition Room;
- . In Angkor Wat Temple;
- . In Wat Bo Pagoda.

There are 16 participants (16 women): 13 from the APSARA National Authority and 3 from the National Authority for Preah Vihear.

VI.1.2. English Language Classes

On 20-21 June 2016, the ATC conducted an English Placement Test to evaluate applicants' knowledge in English in order to identify their current level in order to prepare the suitable level for all attendees. 161 APSARA' staff (including 70 women) undertook the test. As the result, the score ranged from 9 to 94 points over 100 points.

Table 1: Result of English Placement Test

Score Range	Level	Number of Students (persons)	Percentage (%)
0-20	Below Elementary	6	3.73%
21-39	Elementary	34	21.12%
40-60	Pre Intermediate	75	46.58%
61-85	Intermediate	41	25.47%
86-100	Upper Intermediate	5	3.11%
Total:		161 persons	100%

- English Elementary Classes

In July 2016, two English classes for Elementary Level, New Total English Course Book, were started and taught by Mr. Say Kim An and Mr. Yon Yen, ATC's staff of APSARA National Authority. They graduated in Bachelor of Teaching English as Foreign Language at Institute of Foreign Language (IFL), Royal University of Phnom Penh. The total number of students is 37 (including 17 women).

- English Language Class supported by US Embassy Phnom Penh (English Language Fellow Program)

There are two English classes taught by Ms. Kitty Johnson, US-English Language Fellow. This English class started in November 2016 and will be ended in July 2017.

- . Presentation Skill Course for Leaders (Total participants: 07 persons, including 02 women);
- . Communication Skill for Supporting Staff (Total participants: 22 persons, including 08 women. The participants were selected from intermediate to upper intermediate level.

VI.1.3. French Language Training course

The French classes started in October 2015 and finished on 23 June 2016, sponsored by the International School of Siem Reap. There were 2 classes (Elementary and Intermediate level), 2 hours per day and 2 days a week for each class. The French classes were taught by Mr. Jean Michel Martinez.

Date	Number of students by month	Class Levels	Notes
January 2016	32 persons	Class A = Intermediate level (7 persons)	Class A= Mon - Tue Class B= Wed - Thu
June 2016	13 persons	Class B = Elementary level (6 persons)	

VI.2. Specific training Courses

VI.2.1. Training course on "The CPR and First Aid - First Responder Program (1)"

The First Aid training course is lectured by 10 instructors, from The CPR Hero Training Centre, led by Dr. Michael Pham, from the United States of America, for 3 days from 29th June to 1st July 2016.

. *Purpose:* to provide knowledge about CPR, First Aid for medical and trauma emergencies to APSARA technical staff, tourist agents, conservators, forest conservation agents, tourist police, traffic police and heritage police, which enable them to be capable of rescuing the national and international tourists who are hazardous accidental.

. *Participants:* 28 trainees (3 women) from heritage protection polices, traffic and tourist police officers and APSARA National Authority.

VI.2.2. Training course on "The CPR and First Aid - First Responder Program (2)"

. *Lectured by:* 17 instructors (including 05 professional staff) from The CPR Hero Training Centre, led by Dr. Michael Pham, from the United States of America;

. *Date/Period:* 4 days (14th to 17th of December 2016);

. *Purpose:* to provide knowledge about CPR, First Aid for medical and trauma emergencies to APSARA staff: tourist agents, conservators, forest conservation agents and security guards; tourist polices, traffic polices and heritage protection polices, which enable them to have the capability to rescue the national and international tourists who are accidentally injure while visiting the Angkor Park;

. *Participants:* 38 trainees (including 7 women) from heritage, traffic and tourist police officers and APSARA National Authority staff.

VI.3. Seminars on conservation and heritage

VI.3.1. On "Preventive Conservation"

. *Lectured by:* Prof. Koenraad Van Balen from Belgium, a UNESCO chair on Preventive Conservation, Monitoring and Maintenance of Monuments and Sites (PRECOM'OS);

. *Dates:* 5 days (28th November to 2nd December 2016);

. *Purpose:* to provide more knowledge about the theory of Preventive Conservation, the importance of Preventive Conservation Approach, Stone Conservation Techniques, Damaging Process and Analysis, and some case studies which can be reflected with real working experiences.

. *Participants:* 25 persons (7 women) from APSARA National Authority, Ministry of Culture and Fine Arts and National Authority for Preah Vihear.

VI.3.2.: Seminar on "UNESCO World Heritage Volunteer in Angkor, 2016 - Together for Heritage"

APSARA National Authority in cooperation with the Korea-Angkor Cultural Heritage Institute had organized the program on "UNESCO World Heritage Volunteer in Angkor" on the theme "Together for Heritage";

. *Dates:* 12 days (10th to 22nd August 2016);

. *Purpose:* to raise the awareness and encourage youth participation or cooperation both locally and globally, in order to implement the Convention in 1972 related to the Protection of the Natural and Cultural Heritage Sites of UNESCO;

. *Participants:* 23 volunteers (including 13 women) from 7 countries: Cambodia, Korea, France, Australia, Argentina, China and the United State.

VI.3.3.: Seminar on "Measuring Monuments towards their Better Structural Understanding 2"

. *Lectured by:* 2 Japanese experts, Prof. Kenichiro Hidaka (expert ad hoc in conservation of ICC-Angkor) and Prof. Takashi Hara, and assisted by two technical assistants, Ms. Midori Hidaka and Mr. Akito Oto;

. *Dates:* 13 days (04th to 16th July 2016);

. *Purpose:* to measure and evaluate the Victory Gate structures at Angkor Thom through the theory and actual studies on the site, and to give the awareness of using 3D Scanner and data for conservation, and monitoring the temple structures;

. *Participants:* 18 persons (4 women) from DCMA, DCOA, NAPV, and ITALIA Team, staff of APSARA National Authority.

VI.3.4.: Seminar on "Monument Executive Development Plan"

- . *Lectured by:* Prof. SIMON Jean-Christophe, Architect and Inspector General of Heritage from France;
- . *Dates:* 5 days (29th February to 5th March 2016);
- . *Purpose:* to enhance the capability of the APSARA staff on monument executive development plan for safeguarding, developing and managing the site as well as for tourists' hospitality: selecting 2 temples in Angkor Park including Bakong Temple and Preah Ko Temple;
- . *Participants:* 19 participants (4 women), technical staff from DCMA and Tourism Department of APSARA National Authority.

VI.3.4.: Training course on "Introduction to Conservation Science - stone, deterioration, conservation, case studies"

- . *Lectured by:* Prof. Hans LEISEN, lecturer from Cologne University, Germany and Chief Executive of GACP

- . *Dates:* 5 days (15th to 19th February 2016);
- . *Purpose:* to provide basic knowledge about different phases on the process of conservation and standardized techniques for conservation on Angkor area including:
 - Basic of stone nature;
 - The deterioration of stones in the temple;
 - Documentation;
 - Study on science-stone conservation method and conservation method; case study on Preah Ko Temple, Bakong Temple, Angkor Wat Temple and other temples etc.;
- . *Participants:* 28 participants (7 women) from APSARA National Authority (ITALIA Team), Ministry of Culture and Fine Arts and Preah Vihear National Authority.

VI.3.5.: Training course on "Management and Safeguarding of the Angkor World Heritage Site"

- . *Lectured by:* Senior officials and technical staff of APSARA National Authority, and APSARA's Lawyer in 4 sessions;
- . *Dates:* 5 days per session (18th Dec 2015 to 29th Jan 2016)
- . *Purpose:* to enhance basic knowledge and understanding of the values and the obligation to protect and preserve the Angkor World Heritage Site; to better understanding of the administrative and related legal procedures to support the operation of the Departments;
- . *Participants:* 118 participants (including 12 women) from APSARA National Authority.

VII. Department of Development of Siem Reap Urban Heritage (DDPU)

VII.1. Town Management

VII.1.1. Review and advises on construction or modification projects of residential or commercial building plan

11 projects have been studied:

- The construction plans of commercial building requested by Mr. Sang Sophal, located in Salakanseng Village, Svay Damdum Sangkat, Siem Reap town;
- Mrs. Key Muy Leng requested to build a Hotel in Khna Village, Sangkat Chrav Siem Reap town;
- Mr. Sun Navy and Mrs. Neang Yin Leang requested to modify the construction plan of commercial building in Kasikam Village, Sangkat Sronge, Siem Reap town;
- Mrs. Heung Ny requested to modify the construction plans of commercial building in Streung Thmey Village, Sangkat Svay Dangcum, Siem Reap town;
- Mr. Heng Minea and Mrs. Heng Namich requested to build accommodation in Kasikam Village, Sangkat Sronge, Siem Reap town;
- Request to modify the construction plans of the hotel belonged to Mr. Chaeng Bun Leng in Wat Bo Village, Sangkat Salakamreuk, Siem Reap town;

- Request to modify the construction plans of commercial building for construction a hotel by Mr. Heung Chai Srung and Mrs. Loy Sopheap in Svay Dangcum Village, Siem Reap town;
- Mr. Yem Boeng and Yem Kak asked to modify the construction plan of commercial building, situated in Vihear Chen Village, Svay Dangdum Sangkat, Siem Reap town;
- Request for the construction of staff accommodation by Sokha Hotel in Cultural and Tourist City of Angkor;
- Request to connect 5 water drainages from the hotel construction site to T2 and T4 road in Cultural and Tourist City of Angkor;
- Request to enlarge water drainage system in T2 and T4 in front of Sokha Hotel Siem Reap in Cultural and Tourist City of Angkor.

VII.1.2. Executed and work in progress

- Follow up of the car parking built by Green Angkor Culture Inc. Co.,Ltd in front of Angkor Wat Temple. The project has been delayed because UNESCO proposed to modify the plan of construction;
- The Department has surveyed and estimated the cost of TMP office building in Welcome Centre in the Cultural and Tourist City of Angkor.

VII.2. Management of the construction in Cultural and Tourist City of Angkor

The DDPU has followed up and monitored the constructions as follow:

VII.2.1. Technical Department Buildings of Siem Reap province

The project is implemented by Kamtranship Co., LTD. The construction work has been achieved 90% of the 26 buildings of different provincial departments.

VII.2.2. The building of Sokha Hotel Siem Reap

The Siem Reap Sokha Hotel was built in 23 Ha, located in Trang Village, Slokram Sangkat, Siem Reap town. Presently, 85% of the building A, BR, BL, C, D, E and F building were constructed.

VII.2.3. Cooperation with the provincial authorities

The DDPU has cooperated with provincial committee to survey 551 of sellers along the T5 road in Cultural and Tourism city of Angkor.

VII.3. Other work

The DDPU has cooperated and given recommendations to provincial authorities of Siem Reap on infrastructure renovation of canal and development project in the province.

The DDPU has also monitored other projects in cooperation with the other departments of APSARA National Authority.

VIII. Interministerial Commission for resolving of the Cultural and Tourist City

VIII.1. Cultural and Tourist City in Siem Reap/Angkor

VIII.1.1. Interruption and repression of illegal activities

In collaboration with the Department of Order and Cooperation of the APSARA National Authority, the Commission has carried out the following cases:

- Interruption of 58 cases of illegal construction by dismantling and confiscating construction material and equipment for some cases, by making contract of promise for not building in the APSARA land and report to the Director General of the APSARA National Authority;

- 34 cases of interruption and prohibition of throwing garbage by cars and motorbikes;
- 3 interventions for putting again the barrier posts in cement and in wood for demarcation of the land by the APSARA National Authority destroyed by unknown people;
- Interruption of the removal of soil from the ancient hillock located at Tram Neak pagoda, and 3 tracks which transported soil in Chong Kao Sou village;
- In cooperation with the Municipality of Siem Reap to interrupt the illegal constructions of any kind by 10 families in Boeng Daun Pa village, in application of the sub-decree No 158 dated 25th July 2016;
- Reinforcement of the plots of land already bought and compensated by the APSARA National Authority by collecting proof evidence documents, to face new abuse by people claiming land title deeds;
- Threatening acts:
 - . One unknown motorcyclist shot 5 times with the firearm K54 the guard station of the Department of Order and Cooperation during night-time, and another unknown man damaged the directional panel located at the intersection the section T5 and the 60 m road of the APSARA National Authority;
 - . Many threats during the investigations carried out for measuring the land.

VIII.1.2. Legal procedures

- Collect of signed documents by Mr. Heang Sary related to the compensation received from the APSARA National Authority in order to present to the lawyer;
- Collect of data about the land already bought by the APSARA National Authority and the former owners claim the title deeds.

VIII.1.3. Investigation and collect of data about the request of title deeds by the population

- The investigation and collecting data made in cooperation with the provincial institutions concerns 459 families;
- Specialist team measured and collected data in 5 villages of 524 plots of land representing 525.15 hectares;
- 310 claiming files from the population have been resolved by the specialist team, among these cases, there are 197 plots of land already compensated and 113 claiming of overlapped landowners

VIII.2. Building of new road leading to the Centre of the APSARA National Authority

In order to build the new road prolonging the existing road called 60 m Road to reach the Centre of the APSARA National Authority, it is necessary to buy some land from the landowners in the portions where the road passes by:

- Agreement to compensate 1,612.50 \$ to one family for a piece of land of 640 m² but the amount is not yet paid;
- Payment of 963,764,17 \$ USA for 5 plots of land representing 109,731.39 m² from the owners, and submission for agreement to buy 5 another plots of 14,450.48 m² and costing 158,875.78 \$;
- 14 owners of land already used for building the new road don't agree with the price proposed by the APSARA National Authority;
- Some landowners did not yet participate to the land surveys and measurements;
- The investigations and negotiations with the landowners are still in progress.

VIII.3. Project of rehabilitation of hydraulic system

- In order to restore the dikes of ancient canal located in Phlong Village, Leang Day Commune, Angkor Thom district, the negotiations with 6 families whose land is affected by the work, but they refused the amount proposed of 0,2 \$/m² and claimed for 5 \$/m²;

- The payment for compensation has been made to 2 families for 14,360 m² of land, corresponding to 2,872 \$.

VIII.4. Construction of a deviation road

- 3 families whose land is affected by the construction of the station of weight cars claim for compensation.

VIII.5. Construction of the protecting wall of the Centre of APSARA National Authority

- The construction of the protecting wall of the Centre of APSARA National Authority affects the land of 382 m² belonging to 2 families living in vicinity, in Thnot Village, Ampil Commune at the west side of the wall. They ask for 5 \$ /m²;
- On the east side of the wall, on family has been compensated for his 97m² land with the amount of 97 \$.

IX. Department of Land and Habitat Management in Angkor Park

IX.1. Achievements of main activities

IX.1.1. Construction monitoring

- The technical staffs of department followed up the request of 281 families living in the protected zones 1 and 2 of the Angkor Park and other areas, for renovation or construction of their house and having received the authorization from the APSARA National Authority, in accordance with the conditions established;
- The technical staffs helped the population by giving advices and encouraged the villagers to respect the law on heritage management in cooperation with the APSARA National Authority.

IX.1.2. Requests of construction in the protected zones

Date received	Number of letters	Responding Letters			Remark
		Approved	Disapproved	Total	
Year 2016					<ul style="list-style-type: none"> - Replied letters: 47 - Consulting letters: 19 - Department of Land resolved: 02 - Announcement: 01 - Community: 06 - Withdrawn letters: 02
Total	715	279	248	604	Remaining 111 letters

IX.2. Development Project in cooperation with New Zealand

The staffs of department in charge of community development for the bilateral project between APSARA National Authority and New Zealand are implementing the action plan in the selected villages as follow:

- Lbe'k, Prasat Cha villages in Don Keo commune of Puork District;
- Cham Bak and Kouk Srok villages in Bakong commune of Prasat Bakong district;
- Bang Kong and Kirimeanun villages in Sangkat Ampil of Siem Reap district.

IX.2.1. Heritage Education Activities

- In schools:
 - . The team has prepared the action plan conduct heritage education within schools in Angkor Park, by developing additional learning materials beside the existing material of the session of 2015. The 12 schools of 434 students having

received education on "heritage awareness" are located in the Angkor Archaeological Park;

. Another 24 public schools composed by 17 primary schools, 6 secondary schools and 1 high school gathering 259 schoolgirls and 175 schoolboys, will be the next target for drawing awareness on the protection of heritage;

. The program has organized a contest for selecting outstanding students for 759 candidates including 437 schoolgirls from 16 primary schools, 4 secondary schools and 2 high schools. The examination topics are based on "Heritage and Angkor Archaeological Park" and awards will be given to the best schoolgirls and schoolboys.

- In villages
 - . The education program includes the participation of the chief of communes and 31 villages, conducting through questions and answers to the villagers (men and women).

IX.2.2. Protection of environment

- The Department participated in collaboration with the Department of forestry, cultural landscapes and environment to the tree plantation in Trach Village, Balang Commune, Bakong District;
- In cooperation with 3 "Heart Foundation" to raise awareness on the protection of environment, the Department participated to the selection of suitable schools and villages in the Angkor Park to conduct the event;
- After distributing the sweet bamboo trees to some schools and villages, the team keeps on following up the project by given bamboo seeds, young trees and flowers to other schools and villages.

IX.2.3. Handicraft activities for promoting community tourism

The project also helped the villagers to make handicrafts for selling to tourists in order to get additional income and to improve their standard of living:

- Meetings have been organized with the village communities of Rohal village for defining the market for selling the handicraft products, in particular the leaf boxes (smock), with the management committee of community tourism and the members of Unity food at Boeng Totoeng Thngai and Kao Srok Village. In January, they started the construction of the Unity food Kiosk supported by the APSARA National Authority and in July 2 additional kiosks;
- Distributions of promotional leaflets of community tourism to the hotels and travel agencies in Siem Reap town;
- Meeting with the management committee and the members of Kutisvara community to discuss the lacking budget for constructing the handicraft shop;
- Following up of selling handicraft products at the community shop located at the west side of Ta Prohm Temple and Kutisvara Temple by joining the opening workshop of handicraft shop of Kutisvara community;
- Meeting with KUTISVARA community to encourage them to improve the promotion of the development activities of APSARA National Authority and ACHA project by producing promotion banners;
- Conduct of the meeting with the management committee of handicraft shops for preparing the welcome the visit of the travel agencies Asia Tour to Kutisvara community and Stop Asia to Kutisvara and Boeung Toteong Thngai Communities;

- Conducted meetings with the community in charge to prepare the achievement report of the oxcart tour trip from the village to Ta Prohm Temples and the boat tour trip in the Baray North;
- Development of strategy for the identification of market for wooden and palm leaf handicraft products.

IX.2.4. Solar Unit Activities

NZaid provides the installation of solar energy in the villages selected by the project and funds 50% of the total cost, and the villagers have to take in charge 50%, and the team responsible of solar followed up the power charged by solar system:

- in Leang Dai, Tuol Kralanh and Lbèk Villages, they collected the money to be reimbursed through the management committee and prepared the report;
- they conducted meetings with the management committee of Solar power units and technicians from Vaichhlat Institute to encourage the community to take care regularly their Solar panels.

IX.2.5. Agricultural Activities

The team responsible of agricultural activities organized technical trainings to villagers in targeted villages about the following activities:

- Practice of SRI performance;
- Growth of vegetable for commercial purpose;
- Production of compost;
- Breeding of chicken and fishes at family level;
- Growth of oyster mushroom;
- Link with the market and value chain;
- Plantation of trees in selected schools and villages;
- Growth of bamboo shoot;
- Distribution of saving energy stoves.

IX.2.6. Saving Activities

The team followed up and provided technical support to 21 groups from 12 villages by facilitating each group for the annual saving division for their members. In July, the team accompanied the study tour for management committee of each saving groups to get experience from the "village bank" at 3 villages supported by LWD organization in Battambang province.

IX.3. Other Activities

IX.3.1. Khmer Habitat Center's Activities

- Mr. An Van and Mr. Heng Chorn are assigned as responsible of the activities at the Khmer Habitat Center: vegetable garden, fish breeding pond, production of compost, seed transplantation, taking care of the traditional Khmer Habitat center, by maintaining the general view of the center, and follow up all activities of workers in the center;
- They maintain the solar panels, organize the visit of national and international visitors and welcome the Japanese visitors studying the Khmer traditional habitat.

IX.3.2. Preah Reach Bô Pagoda

The staff of Department collected data and copied the existing architectural design of the Preah Vihear (sanctuary). They are studying the technical way to restore the sanctuary and will design a new plan when they receive results from the architects.

IX.3.3. Project of intangible heritage in the Angkor Park

Mr. Ou Kong Kea has been assigned for studying the traditions practiced by the population in the Angkor Park as following:

- Handicraft of Rompak at Leang Dai Village, Sangkat Nokor Thom;
- Ceremony to remove of misfortune at Lolei Pagoda in Bakong commune;
- Traditional way of weaving mate with Ramchek plant at Thnol Village, Run Ta Ek commune;
- Study the traditional belief of population in Takam Pagoda, Takam Village, Daun Kev commune, reputed for truthful oaths for fear of retaliation in case of perjury;
- Ceremony of Kan Bân (for Pchum Bân event) at Pradak and Lolei pagodas;
- Ceremony of Chenh Vosar (rainy season release event) at Athvear Pagoda, Krasang Leung Village;
- Interview of a medium (neak snong roub) at Treak Village;
- Interview of villagers about legends and folktale stories at Leang Dai Village, Sangkat Nokor Thom;
- Ceremony of blessing boat at Treang Village, Sangkat Slokram;
- Ceremony of "Or ambok" during the full moon festival at Preah Enkosa and Preah Enkosei Pagodas, Treang Village, Sangkat Slokram;
- Observation of Tesna (prayer and narrative of the teaching of Lord Buddha) at Damnak Pagoda;
- Ceremony of "Laeung Neak Ta" (medium in trance) at Preah Reach Damnak Pagoda.

IX.3.3. Srah Srang Project

The restoration of the Srah Srang landing stage was completed, the earth removed, the garbage was moved out and the cleaning was carried out since February, bringing back the beauty of this place and its environment.

X. Department of Order and Cooperation

The Department of Order directly organized its tasks in 5 groups of team to maintain public order by stopping illegal constructions in the 5 districts of the Angkor Archaeological sites and in the Cultural and Tourist City of Angkor.

X.1. Main achievement

X.1.1. Illegal constructions or activities in the Angkor Archaeological sites

- Siem Reap city: 685 cases;
- Pourk district: 49 cases;
- Angkor Thom district: 23 cases;
- Banteay Srey district: 79 cases;
- Prasat Bakong district: 101 cases.

X.1.2. Illegal constructions and activities in the Cultural and Tourist City of Angkor

- Slor Kram commune: 37 cases;
- Nokor Thom commune: 25 cases;
- Ampil commune: 2 cases.

X.1.3. Maintenance of public order in the temples

- Interruption of illegal activities as vendors or illegal shops: 130 cases;
- Confiscation of materials of illegal shops: 90 cases;
- Other disputes: 74 cases.

X.2. Report and legal procedures

- Special reports: 66 cases;

- Dekka (complaint letter): 33 cases;
- Sent to court: 9 cases.

X.3. Challenges

- No cooperation from the local authorities for supporting the interruption of illegal constructions even though they were instructed by provincial authority;
- Lack of forces at the field work while the constructions were built, especially during the break time and at night;
- Lack of good cooperation from related authorities and some departments of APSARA National Authority to manage the public order in the temples.

X.4. Proposal

- Highly request the local authorities to help in stopping illegal constructions;
- Highly request all authorities to participate in managing and safeguarding the order in the temples;
- Highly request the local authorities to stop the transfer of land title in Archaeological sites and especially the buying and selling land in commune level.

XI. Run Ta Ek Eco-Village Development project 2016.

XI.1. Project Action plan

To meet the real need and living behavior of people who have willingness to leave from the protection areas Angkor zone 1 and 2 and to move in Run Ta Ek Eco-village, the REDA (Run Ta Ek Eco-village Development Area) team work had adapted some points in policy by giving them the living and agriculture lands in the same plot. Moreover, to build sustainable economy in families, the project had activated plan as:

XI.1.1. Cultivation

90 percent of villagers who get agricultural land started land preparation and some have been cultivated with technical advices of the project officer. The pilot farm had growing everyday with eating species, fruit trees, and increase the planting of Kulen trees in 9 hectares. Every year the project had cultivation organic rice in Trapeng-Lberk and Trapeng Prey.

XI.1.2. Livestock farming

A trainer has developed the chicken breeding using natural principles of hatcheries, guaranteed also the market. An experienced expert on fisheries has shown to the villagers how to raise fish in a small pond and also outside the village.

XI.1.3. Water Management

The team was on site work to dig a canal across the village to allow residents access to water for agricultural work almost everyone. The pond was dug for the people who have applied and have real action on agricultural work. With the collaboration of donors through projects, water well pump is offering almost to all the houses in the village. The Eco-village Run Ta Ek also has clean drinking water in purification machine and people can get filtered water for every household.

XI.1.4. Electricity by solar energy

The battery charger powered of solar energy gives access to citizens at an affordable price. The project also has requested the Siem Reap electricity authority to link the electricity network into to the Run Ta Ek Eco-village and this work is in process.

XI.1.5. Physical infrastructure

In order to allow people to live with dignity and welfare, the project team had develop physical infrastructures as:

- . Laterite road and chalky soil roads in the village;
- . A Buddhist sanctuary (Salom) in construction 70%;
- . Request in process to the charities for building a health post in the Run Ta Ek eco-village;
- . Link to the electricity network;
- . Set up a sport land so that the children can continue training for the annual competition and award at the commune level then provincial level.

XI.1.6. Promotion and marketing

- . Establish a traditional dance troupe performed by students who are the villagers' children;
- . Preparation of dishes and drinks that reflect the geographical identity of the Run Ta Ek eco-village;
- . Song on Run Ta Ek titled "Run Ta Ek in my heart" and "Loss of my heart in RTA";
- . Teaching English to village children and villagers to communicate with foreign tourists and for their work in the future;
- . Grouping successful farmers in transplants, germinations and plant shoots to support the market;
- . Development of Moringa growers to supply the pharmaceutical industry;
- . A community garden has been set up to support Community base Eco-tourism. This community garden provides food and services to strengthen the villagers' income.

XI.3. Land violation

The land dispute with the 38 families could not be resolved due to the uncompromising attitude and falsification of the 15 families concerned, that extended the land to 38 families, has subsided. The land dispute resolution officer cooperates with the Run Ta Ek project leaders and the relevant departments to compensate by measuring the new land to give them.

XI.4. Development activities

- The project has set up a location upon the initiative of Prof SS to create a small museum in the eco-village RTA in order to get help from the Government of India;
- Currently, the skilled sculptors from the eco-village Run Ta Ek can carve and with the support of the Apsara Nationale Authority, they have been offered job opportunity of restoration and carve the walls of monuments restored;
- China-Cambodia Agriculture Promotion Center (CAPROC), which is implemented in the Run Ta Ek Ecovillage to create a scientific park model that makes it become an only one village in the ASEAN countries, which focuses on tourism and the cultivation without using chemicals. This project is implemented in cooperation with the "Forward Agriculture Technology International Cooperation Co., Ltd.", for 20 years contract;
- The Agricultural development in Run Ta Ek Eco-village using of purebred animals and fertilizer is not enough yet, so the project has studied the situation of soil and groundwater to adapt the types of crops that afford high growth in that area by using methods that can improve the soil quality. In digging to the bottom layer more than 03 meters in depth, the analytic team can know the level of nutrients in the soil and water storage levels for use in agricultural work;
- Setting up a new policy to manage the Run Ta Ek Eco-village to build efficiency to all parties concerned and realize the strategic objective to a sustainable development, by proposing a more precise management Master plan to the APSARA National Authority, in order to measure the effectiveness of project implementation and to ensure the application of principles;
- The project explores natural recreational opportunities that respond to the expectations of tourists. Indeed, at the present time, the Run Ta Ek eco-village is known for:
 - . the "home-stay";

- . research carried out by students in archeology and tourism to write their academic dissertation;
- . foreign students come to experience the social work with the inhabitants;
- . some donors know the Run Ta Ek eco-village through the Facebook page of the project and through other media and some came to visit the village;
- . donors such as NGOs and private companies help the Chea Lea Thom primary school with equipment and equipment.

XII. Department of Water Management

XII.1. Main activities

XII.1.1. Ancient Hydraulic System

- Filling the water around the moats of Angkor Wat, Angkor Thom, Preah Khan, Banteay Srey, North Baray, West Baray, North Pond and South Pond of Angkor Wat Temples to reach the maximum level;
- Dredging of the Daun Pav canal to evacuate the water to the southeast moat of Angkor Thom and the moat of Angkor Wat over a length of 1,370 m;
- Construction of a temporary dike of 0,5m at the North-West side of Angkor Wat Temple to raise the water level and elevation of the dike of 3m x 1m x 3m to prevent water from going out of Trapeang Sès;
- Rehabilitation of the drainage system surrounding the Temples in the Angkor Park such as:
 - . Completion of 2,760 m at the area of Angkor Wat Temple;
 - . Completion of 1,355 m at the area of Angkor Thom Temples: 200 m at the Elephant Terrace, 580 m at Suor Proat Temple, 575 m at Ta Kav Gate;
 - . Completion of 1,300 m at the area of Srah Srang;
 - . Completion of 2,360 m at the area of Preah Khan Temple;
 - . Completion of 400 m at the area of Neak Pean Temple;
 - . Completion of 500 m (0,6 m width and 0,3 m depth) at the area of Ta Prohm Temple;
 - . Completion and cleaning the drainage system of 1,167 m from Banteay Kdey Temple to the Kravan Temple and at the east side of the entrance of Banteay Kdey Temple for 150 m;
- Installation of 150 m PVC along both side of the entrance causeway of Banteay Srey Temple.

XII.1.2. Irrigation System

- Supply water for the surface irrigation among 3,604 ha to the people in 5 communes of Siem Reap District and 4 communes of Pourk District and the Teuk Vil Agriculture laboratory;
- Insertion of data of water management structures in Angkor Park and the irrigation system of West Baray as well as the risk map into the management information system (GIS);
- Construction of Tonle Snguot inlet water gate structure and a box culvert across the grand road at the north part of Dai Chhnang Gate of Angkor Thom;
- Implantation of boundary marks to the East side of Pourk River for dredging on 1,000 m, and construction of water sluice gate at the Preah Srok River in Pourk District, and study of the ancient ponds located in Samrongyea Commune, Puork Commune, Daun Kèv Commune and Khnaat Commune in order to dredge again the hydraulic system;
- Construction of 18 pipes culvert along the T5 highway in order to evacuate water;
- Completion of restoration the dyke at the northeast and North-west of Beng Mealea Temple;
- Construction of the inlet-outlet water gate structures of Chau Srei Vibol Temple about 80%;
- Reparation of the head wall of pipe culvert connecting between Trapeang Sès Pond and the Angkor Wat moat to avoid erosion;

- *Topography work:*
 - . At Tonlé Snguot Temple to assess the level of water to be filled;
 - . At the women's pond and the men's pond of Angkor Wat Temple;
 - . From the northeast side up to the culverts crossing the east side of the dyke, coming from Trav Kod pond to study the possibility of evacuating water to the moat of Chau Srei Vibol Temple;
- Following up the reparation of the east side of the dyke of East Baray;
- *West Baray:*
 - . Preparation of the budget to repair the road of the dyke about 4,400 m;
 - . Following up the repair work on the east side of the dyke about 600 m;
 - . Following up the repair work on the west banks of the dyke about 2,200m;
 - . Study of plant species that can protect the banks of the baray and followed up of the repair work of the irrigation system;
- Measurements of the dry rice fields depending on the baray irrigation system to assess the exact quantity of water.

XII.1.3. Air Pollution and Meteorology

- Due to the very advanced scientific equipment, continuously air measurements of the Angkor region on the most important elements as Dust O₃, NO, NO₂, NO_x and SO₂ have been done at the old ticketing booth and in front of the Angkor Wat temple, the filters and equipment are regularly changed, calibrated and data collected;
- In cooperation with Kanazawa University, and thanks to the very advanced scientific equipment, air samples from three locations, at Angkor Park, at Preah Ang Chèk and Preah Ang Chom Praying Place and Spice Garden were taken, during 10 hours each time and twice a month, for analysis in laboratories in Japan;
- In order to meet the requirements of the international standard on the quality of the environment ISO 14001 and thanks to an advanced equipment of Gastec Tube type, to test the air quality, a follow-up was carried out in the region of Angkor, twice a year, in the dry season from 21 to 27 April 2016 and in the wet season in October, by measuring the elements CO NO₂ et SO₂, at the former Angkor ticket booth and in front of the temple of Angkor Wat over a period of 24 hours, for 7 days;
- Collecting the data of rain water, wind speed and humidity at 6 locations: Krang Kroch, Banteay Srey Temple, Slat Romchey Pagoda, Phnom Krom, Chao Srey Vibol Temple and on the Kulen mountain;
- Control and collect data at the meteor station at the Cambodian National Commission for UNESCO in Phnom Penh.

XII.1.4. Ground Water

- Ground water modeling in the Siem Reap area;
- Insertion the data of water level measured every day of 87 wells located in the 11 villages of the Angkor Park;
- Test of water samples from 3 locations of the Siem Reap River (Spean Ta Daung, Spean Pschar Chas, Tumnoup Barang): 24 times in the Department and 2 times, during the dry and rainy season, in the laboratory of the Ministry of Environment;
- Reinscription of the codes for 12 wells in the villages of Kirimanun, Trach Chroum and Bos Thom in Bakong commune, and adding places to measure the water height of 7 new wells in the village of Orv Lork and extension to 13 others Villages around the Prasat Bakong in Angkor Park, then registering of these codes on the map;
- Test of plants that can filter water and monitoring of the water quality of the pond at Krang Kroch.

XII.2. Specific projects

XII.2.1. North Baray Project

- Maximum water filling of 3,66 m at the point of measurement, 28,50 m from sea level;
- *Tree plantation*
 - . Planting of small trees to protect the edges of the water and the banks of the dike at the Preah Khan temple and in the Krang Kroch region against erosion, and testing the water-filtering vegetation, about 4,372 plants including: 2,100 Loeurng Reach, 4,100 Kngauk, 1,946 Angkanh, 4,880 Ampil, 3,406 Krobav, 4,680 Bèng, 1,660 Kokok, 7,350 Koki, 100 Chheuteal, 190 Troyung, 450 Sdav, 130 Kansen, 631 Thnung Baan and 2,139 Rèng;
 - . Planting of Cheung Moan plants to beautify the road from the nursery of protective plants along the waterfront and the slopes of the dike (at the Preah Khan Temple) to the nursery of water filter plants; planting of vegetation at the edges of the water plans at Krang Kroch on 220 m² and cleaning of 5 ponds-test for the filtering plans, then weeding around the ponds on 302 m², and planting grass on the dyke of the Village of Leang Dai on 550m²;
 - . Planting of trees and wildflowers to serve as a protective earth to prevent it from being driven by water flowing to the water gate of the Ta Som temple: 570 plants including 400 Ang Kanh, 10 Trabčk Prey, 50 Loeurng Reach, 30 Angkear Sèl, 80 Kngauk;
 - . Sprouting plants to plant them as a protective earth cover to prevent it from being driven by water flowing to the water gate of Ta Som: 960 shoots including 560 Ampil, 400 Trasèk, and 200 hole drilling for inserting plants;
- Completion of soil compaction by mixing earth with cement to reinforce the dyke and repair the areas damaged by the water of the Baray North over 120 m in length, 1 m in width and 3 m in depth;
- Monitoring the condition of the dike and regularly measuring the water level at Baray North, Neak Pean Temple, Preah Khan and all water gates;
- *Regular patrols:*
 - . Of the Northern Baray area and along the dike near the Ta Som temple to the Phnom Bok to prevent illegal deforestation, hunting and fishing;
 - . Monitoring of water gates, openings and closures, and hydraulic structures around Angkor Thom, at the east of Angkor Wat, at Ta Som, at Reachdak Bridge (hydraulic structure to fill the North Baray), at Phlong and Leang Dai Villages, as well as other hydraulic structures;
- Study of soil layers in two places: the first hole, at the structure of the water outlet door (ancient structure), and at the second hole located at the west of the water outlet (ancient structure) 2 m width, 5 m length and 2.2 m depth;
- Constant measurements of water level and control of openings and closures of water gates;
- Repairing the damaged slopes of the dyke and reinforcing by planting grass to prevent infiltration from the water gates on a surface of 304 m²;
- Weeding along the road leading to the site over a length of 5,000 m²;
- Reparation of the road of the dike leading to the water gates of the Ta Som temple, that was damaged along 30 m in length, 1.70 m in width and 2 m in height and grass plantation on 80 m² to protect against water flow and repair of water infiltrated at 5 areas;

XII.2.2. West Baray Project

- Repair of 2,200 m of road from the west and north part of the dike and repair of the west part of the dike on 600 m of the West Baray;
- Filling water of the West Baray West with a maximum height of 19,56 m from sea level;
- Repair of three areas infiltrated by water:
 - . Point 1, southeast part of the dike on 5 m wide, 10 m long and 4 m deep;
 - . Point 2, east part of the dike on 5 m wide, 4,8 m long and 3,8 m deep;
 - . Point 3, east part of the dike at 2 different erosion points, the first is 10,4 m long, 2 m wide and 2 m deep, the second is 16,4 m long, 3,5 m wide and 2,5 m deep;
- Digging 267 holes to plant small trees and raising 1,463 heaps of soil to protect them, planting 503 plants and plucking 150 small plants of Rèng Psaam in order to replant at the foot of the dike to protect it;

- Planting of 2,500 Vetiver plants along the slope of the dike where 3 infiltration points were repaired and located in the eastern part of Baray West;
- 3 agents are in charge of driving 3 water cars to water the small trees and the grass planted along the slopes of the dike and on the dike from the outlet watergate to the west platform to watch the sunset and from the East of the Svay Romeat pagoda up to the east platform, a total of 444 containers;
- 16 officers were assigned to patrol along the dike and protect the dike trees regularly, to stop deforestation, clearing land at the foot of the dike to transform into agricultural land or to appropriate it. They surprised:
 - . Unidentified persons illegally deforested to set up a road from the village at the foot to the top of the dike, located in the village of Kok Beng, in the district of Kok Chok. The taskforce and the Heritage Corp Police established a report and closed the road;
 - . The forest fire on the West Baray dike took place at 6 locations: 3 locations at the north of the dike and 2 locations at the east and one location at the south. The working group of the Department of water management cooperated with the Heritage police, the Department of forest management, cultural landscapes and environment, and the Department of Order and Cooperation went on the spot and ordered fire-fighting cars to extinguish the fires;
 - . A tractor plowing in the reservoir of the West Baray at the south of the temple of the West Mebon, the patrol team in cooperation with the Heritage police and the team of the Department of order and cooperation interrupted the activity and obliged the owner of the tractor to sign a contract to promise to stop his activity and explained to him the impacts on the Angkor Park;
- On going cooperation with the EFEO to carry out excavations to restore the Temple of the West Mebon. The working group dug 10 holes: *i*) at the south corner of the staircase, 5 holes, *ii*) at the north corner of the staircase, 5 holes. The results of the excavations and the dismantling of the stones of the temple of the West Mebon on the south and north sides have been completed and the EFEO team are restoring the both sides of the staircase;
- Update of the number of vendor shops on the West Baray embankment and on the slopes on both sides of the water spillway, a total of 289 shops;
- Keep on establishing statistics and measurements of rice-growing and agricultural land of farmers of the 9 khums / sangkats located in Srok Puork and in the town of Siem Reap, using the water of the West Baray for irrigation in order to determine the exact surface of the land to guarantee the efficiency of water management;
- Conduct of a community committee and inhabitants using the Western Baray water to clean 4 irrigation canals to facilitate the flow of water to rice-fields;
- 6 applications for asking water from the Baray to irrigate the rice-fields (dry season rice, water-intensive rice) came from Khum Puork, Khum Samrongyea, Khum Kèv Por, Sangkat Sombor, Sangkat Sro Dè and Sangkat Svay Dangcum, totaling an area of 926 hectares.

XII.3. Other Projects

- Repair of broken roads in Phnom Kulen, at the village of Anglong Thom, Khum Khnong Phnom, Srok Banteay Srei;
- Audit by the Japanese company JQA on the ISO 14001 international environmental management system;
- Conduct of a group of Japanese students from Kanazawa and Komatsu Universities who have completed a two-week internship;
- Participation in the activities of the eco-village Run Ta Èk and follow-up of the digging of the SC-A4 channel of 2430 m in length and the construction of 7 water management structures, a pond drainage channel Chea Lea Thom and another in the village of 900 m;
- Management of the water pumping station from the pond to the dispatch station of the APSARA National Authority Center;
- Maintenance of the water pumping station at the Rauk Rak Bridge, by sending the water to the Spice Garden, 2 hours per week to operate the machine;
- Follow up the drilling of 5 wells to fill the pond of the APSARA National Authority Center;

- Topography work to study 5 tracks with a length of 5,099 m including 3 roads of 4, 274 m in Sangkat Teuk Vil, another 225 m road in Snèung Village and in Phnom Kulen a 600 m road, at Kauk Srok village, Srok Prasat Bakong;
- Work with the Committee of Farmers community to irrigate the rice-fields of the population in 9 sangkat at Srok Puork, Siem Reap Town and the agricultural experimental station of Teuk Vil, totaling 3,604 hectares of land;
- The project team ACHA (New Zealand) met with the chief of commune and 6 families of farmers located in Ta Chèk village, Khum Raung Yea, srok Puork who wish to grow European vegetables to improve their living standards;
- Completion construction of culverts to link the Angkor Wat moat to Trapeang Sè to enable the Department of conservation of monuments of Angkor and Archaeology preventive to restore the stairs of East side of the West entrance of Angkor Wat Temple;
- 3 days of cooperation with the Siem Reap Water Management showed that the water flow is discharged from a height up to 18 m from the water tower and that the end of the pipe is at least 5 m;
- Follow up of construction of the water gate at the west and northeast of the Chau Srei Vibol temple, completed about 80%;
- Control of the elevation work of the spillway and of the dike in Ô Toteung village, Khum Pradak, Srok Banteay Srei;
- Acute study of the volume of water used for irrigation and the distribution system at the Center of the APSARA National Authority to guide the population to save water and labor for field works;
- Topography over 3,100 m at Bakong temple, Preah Kô temple, Beng Mealea temple and Ô Klot water gate to the Ta Soth dike.

XIII. Department of Cultural Development, Museums and Heritage Norms

The Department of Cultural Development, Museums and Heritage Norms consists of 5 Bureaus and the activity report is as follow:

XIII.1. General Coordination Bureau:

- 4 staffs are in charge of the department's administration including correspondence, personnel management, materiel and equipment request, nomination, etc.;
- Examination of all requests related to the photo, video, documentary and cinema shootings and the organization of show-dinners as well as the special events (as traditional ceremony, sporting and cultural events);
- Preparation of the permissions and contracts of the shootings and the gala dinners as following:

No.	Description	Number of request	Total Income	Others
1	Gala dinner	170	250,081.50 US\$	(FOC: 1)
2	Shooting	191	64,780 US\$	(FOC: 129)

XIII.2. Public Relations Bureau

For enhancing the Angkor heritage and for answering to the reel needs of visitors, the Department has set up an Investigation Unit in order to collect data by counting the number of visitors or by conducting interviews:

- The team is divided in two groups for collecting the data of visitors at some main temples such as Bayon, Angkor Wat, Ta Prohm, Banteay Kdei, Pre Rup, Baphoun, Chau Say Tevoda, Bakorng, Phreah Khan;
- Observation of the inappropriate behavior of visitors at Ta Prohm and Angkor Wat Temples for measuring the efficiency of the implementation of the Angkor Code of Conduct;

- Counting of the number of vehicles using the Tonle Oum and Ta Kav Gates by both directions (in and out) for conservation works and management tourist flow;
- Interviews of tourists about the new prices of ticket to visit Angkor Site, at Siem Reap International airport;
- Interviews of visitors regarding the sunrise at Angkor Wat Temple;
- Conduct a survey at Siem Reap International airport about the experience of visit of Angkor site;
- Counting of the number of vehicles at Phnom Bakeng parking;
- Survey about the information boards at Pheah Khan Temple.

XIII.3. Conception and Cultural Products Management Bureau

XIII.3.1. Management of Banteay Srei Parvis:

This unit consists of 9 staffs deployed in different services as below:

- Reception and Hospitality: the staffs provided information to 3,000 visitors;
- Cloakroom service: 249 visitors dropped of their luggage or bag;
- Interpretation Center: 37,113 tourists visited this Center and wrote comments in the book of comments or suggestions, and 31,182 visitors did not make comments.

The workers of department based on spot clean and maintain regularly the whole building and vegetation in the Parvis for ensuring the sustainability and beauty of environment.

XIII.3.2. Cultural Products Management

A team is in charge of the control and education of the vendors in some temples of the Angkor Park for avoiding the sales of inappropriate products that can affect the image and culture of Cambodia, and in order to promote the local products.

The Department participates to the supervision and organization of the special events in Angkor site such as Gala dinners, sporting and cultural events.

XIII.4. Heritage Norms Bureau

23 agents are in charge of controlling the protection of Angkor images, they are based in some main temples such as Angkor Wat, Ta Prhom, Bayon, Banteay Kdei, Preah Khan, etc.:

- Control the shootings of 153 companies with permission from the APSARA National Authority;
- Education and interruption of 348 groups of photographers and video makers who act without permission for the commercial and professional purpose;
- Contribution to educate the visitors who did not respect to the Angkor Code of Conduct.

XIII.5. Museums Bureau

XIII.5.1. Mekong Ganga Cooperation Asian Traditional Textiles Museum (MGCATT)

The MGCATT opens to the public on 1st February 2016.

The MGCATT Museum consists of 15 staffs (10 Administrative and Technical staffs and 5 Guards):

- The Museum is open from Wednesday to Monday;
- From February to December 2016 Mekong Ganga Cooperation Asian Traditional Textiles Museum has achieved as following:

• Museum Visitors

2016	Guests do not buy ticket (free entrances permitted and children under 12	Sold tickets	Total revenue
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	years)					
	Cambodians	Foreigners	Cambodians	Foreigners	Cambodians	Foreigners
Total	369	54	128	105	128,000 riels	315\$

• Preventive Conservation activities:

- Protection of textiles by using the tissue to cover the mannequin in order to display properly the costumes;
- Rolling properly rolling the tissue to avoid wrinkle or crease;
- Aeration of the galleries at the adequate time and regular inspection the behavior of the displayed items and rapid and proper cleaning the displayed items with the soft tissue and plastic broom if necessary;
- Exposition of some tissues under the sunlight to avoid the fungus growth;
- Minimization of the sunlight into the galleries by using the thick tissue curtain and MDF (medium density board to cover the glass window.

• Marketing of Museum

- The museum sign boards are installed at strategic points of Siem Reap;
- The museum leaflets are printed and distributed at some strategic places of Siem Reap;
- The website of museum is regularly updated (www.mgcattmuseum) as the facebook page.

• Improvement of human resources

- A workshop on preventive conservation of textile supported by APSARA National Authority and Ministry of External Affair of India was help at Mekong Ganga Cooperation Asian Traditional Textiles Museum from February 28th to March 2nd 2016 was organized for training the staffs on this new discipline;
- The Deputy Director of Museum, Ms Em Srey Peou participated in a Workshop organized by ICOM- ITC (International Council for Museum and International Training Center for Museum Studies) at Palace Museum in Beijing, China in April 2016;
- The Deputy Director of Museum, Ms Em Srey Peou, participated in the 7th International Exposition of Museums and Relevant Products and Technologies in Chengdu city, Sichuan province, China, from 14th to 19th September, 2016;
- Two staffs, Mrs. Long Khunborey and Mrs. Kong Sopheak attended the ITEC Training Programme (Indian Technical and Economic Cooperation) in New Delhi, India for 3 months from October to December 2016;
- One staff, Ms Moeung Solida participated to the International Course on Conservation of textiles and Costume in Southeast Asia at La Antigua, Guatemala from 24th October to 11th November, 2016.

• Museum collection

The Mekong Ganga Cooperation Asian Traditional Textiles Museum contains the collections from six countries and recently in March 2016, Mrs. Gillian Green, an Australian specialist in Khmer textiles, donated 49 pieces of artifact from South East Asian traditional hand looms to the museum.

• Museum Education Activities

The Museum has involved eight groups of primary school students from four international primary schools in Siem Reap to a small workshop during their visit to museum.

XIII.5.2. Preah Norodom Sihanouk –Angkor Museum (PNSAM)

There are 13 staffs and it opens 6 days per week. It closes on Monday. The achievements of the museum in the year 2016 are:

2016	Visitors		Guests and children under 12 years old		Total revenue	
	Khmers	Foreigners	Khmers	Foreigners	Khmers	Foreigners
Total	551	774	480	67	551 000 Riels	2322 USD

• Conservation and Inventory:

- Hand over fourteen artifacts from Prasat Chen and Prasat Thom (Koh Ker Site) to the National Museum of Cambodia;
- Inventory of 702 artifacts from Banteay Srei Temple, East Gate of Angkor Thom, Ta Prohm Temple and Prasat O Top and Prasat Thmar Dap (Kulen Mountain);
- Translation two booklets regarding inventory, storage and conservation of artifacts from English to Khmer languages, to be published by UNESCO;
- Reception of four artifacts from the region near Beng Mealea Temple to be conserved in the museum;
- Three staffs from the Department of Conservation of the monuments in the Angkor Park and Preventive Archeology (DCMA) have been allowed to study the artifacts for documentary purpose;
- Moving fragments of dancing Shiva of Prasat Thom (Koh Ker Site) from laboratory room to the storage room.

• Exhibition:

- Printing the plan of the museum's exhibitions, distribution of leaflets and installation billboards;
- Dismantling the "Photovoice Exhibition" installed at the Khmer Habitat Interpretation Center.

• Library

- Scanning eight old books;
- Reception of three books from Sophia University Center.

• Marketing

- Interview given to The Asahi Shimbun Newspaper, Japan;
- Preparation of the documents for the publication of Kok Patri Exhibition;
- Conduct of several heritage education program with the participation of 133 students;
- Distribution in 2016 calendars and museum's leaflets to various national and international institutions.

• Restoration of the museum's building

- On 15th March 2016, preparation of the ceremony of contract signing regarding the restoration of museum's building between APSARA National Authority and AEON Company;
- Since 1st October 2016, the museum is closed for restoration. The Sato Kogyo Company is in charge of the restoration work and the follow up has been made regularly to inspect the work done, in cooperation with AEON Company.

XIII.5.3. Angkor Ceramic Museum at Tani site

There are 1 technical staff and 2 workers. It opens 6 days per week and is closed on Monday.

The tasks of staff are:

- Protection and interruption of activities that can harm the ancient kilns;
- Cleaning and maintaining regularly the museum and its environment;
- Preservation of the collection of ceramics displayed in the museum.

Sold Tickets		FOC visitors (Permission and under 12 year old visitors)		Total Income	
Khmer	Foreigner	Khmer	Foreigner	Khmer	Foreigner
16 pax	58 pax	0	0	8,000 riels	58 \$

XIII.6. Artifacts restoration and Laboratory

This group, which consists today mainly of staff from the Cultural Development department, museums and heritage norms, after two years of training by eminent professors from some famous Italian universities, are now able to carry out restoration of the decorative elements of the monuments. They are currently working in three locations, the Angkor Wat temple, the Reach Bô pagoda and the Angkor Conservation Laboratory.

XIII.6.1. Restoration of Angkor Wat' window balusters:

The restoration starts with the 27 balusters of 5 windows, located on the Second North Gallery, and some architectural elements of the window frames decoration and some inner and outer surface of surrounding areas.

- ***The conservation methodology:***

- Documentation:
 - . Photography and Mapping of the conservation state of the artifacts;
 - . Research on the history of decorative elements;
 - . Observation of the stone deterioration: most of the deterioration is due to the pressure of the different salt crystallizations, which cause many problems such as: Sanding, Cracks, Scaling, Exfoliations, Sub florescent, Efflorescent and Bio micro-organisms.
- Restoration process:
 - . Dry Cleaning for removing dust and spider nets, then pre-consolidation and disinfection to stop the bio-organism, finally desalination by using compress of clay, cellulose powder Japanese paper and distilled water to remove the dead bio-organism and the current deposit.
 - . Reinforcement, filling and retouching for avoid the moving of the balusters by the Epoxy resin. Mortar was used to stop the penetration of the water into the stone by the small and big gaps. Then for testing, a sample was made for restoring the original shape of the baluster and for the one with seriously deterioration, a sculpting has been done. The original form of balusters was reshaped and sculpted before putting back in cooperation with the Department of Conservation of Monuments in Angkor and preventive archaeology.
 - . After studying, some new balusters have been made by using sandstone and by respecting the authenticity.

Now 17 balusters were restored and other 10 balusters are in the process of been filled with mortar. The conservation work of the window balusters is finished almost 80 % up to now, the rest of the work is about filling with mortar and monitoring.

- ***Collection and inventory***

The different fragments scattered in the Second North Gallery were collected and inventoried in order to reconstruct the missing balusters.

- On 15 May, 2016, one of balusters of the second gallery collapsed and was brought to the storage of Angkor Wat Temple, then, 49 fragments of this baluster were transferred on 27 July 2017 to the ITALIA laboratory in Angkor conservation Complex for restoration, by using the methodology described above. Now, all fragments are entirely assembled into 6 blocks and a study is in progress to find the best way to connect them together.
- The documentation of the state conservation of artifacts in the second north gallery in Angkor Wat has been done in order to train the new young restorers

coming from the department of Cultural Development, Museums and Heritage Norm to help them to have better understanding to the difficult of the tasks.

XIII.6.2. The Restoration and conservation work in Laboratory

- **Maintenance the collection in the showroom**
- Weekly checking and counting the collection, then cleaning of the dust of the 111 artifacts: 51 in stone, 38 in wood and 22 in metal;
- As the termites appear in the surrounded area and in the showroom, some toxic material has been sprayed against the insects for the inner and outer of the room, and moving all the artifacts a little bit from the wall to allow the air circulation to avoid the concentration of high humidity, then to produce enough light to prevent against the termites attack;
- Due to the high humidity, the body of the one Metal turtle T3 in the showroom was lightly cracked, for protecting the cracked zone, tape and soft paper were used to temporary strengthen both sides and put it in a plaster mold while waiting for restoration.
- On 22 September 2015, 36 artifacts in bronze N.15 were borrowed from the Raja Bô pagoda for restoration and conservation in the I.T.A.L.I.A laboratory. Now, 17 collections have been restored and other 19 are under restoration and all have been documented.
- A report has been made after the restoration and conservation of one ceramic piece and the Buddha footprint.

- **The restoration and conservation work on the artifacts:**
- The main artifacts restored from the Conservation of Angkor are:
 - . Buddha with arm bowl;
 - . Jar containing lead;
 - . Right footprint of the Buddha N. 2161;
 - . Divinity statue N.933 (S28);
 - . Buddha with Abhyamudra N.372 (S16/17);
 - . Left footprint of the Buddha N.2476;
 - . Metal collections from Wat Rajabo (36 artifacts);
- The other work in the Vihara of Wat Raja Bô:
 - . Cleaning the door and window frames by dry and wet cleaning;
 - . Cleaning two scenes of moral painting.

XIV. Department of Tourist Development of Angkor (ATD)

The 2016 annual report illustrates the work result of Department of ATD and the TMP (Tourism Management Plan). This report has eight sections such as tourism statistics, tourist activities, tourism facilities, tourism management, events, co-operations, training programs, and continuous works.

XIV.1. Tourism Statistics

XIV.1.1. Number of International Tourists Buying Tickets and Revenue

Ticket category	International Tourists buying tickets	Revenue (USD)
20 USD	1,282,969	25,659,380
40 USD	896,714	35,868,560
60 USD	17,571	1,054,260

Note: In comparison with 2015, the number of international tourists having bought tickets, the revenue in 2016 shows an increase of 4.63% instead of 4.21%. The detailed statistics for previous years can be found in a separate document joint with this report.

XIV.1.2. Number of Delegates and Researchers

Types of Visitors	Total numbers	Total Days
Delegates	6,767	10,105

This table highlights the number of delegates and researchers who received free entrance permit to Angkor Site in 2016. Thus 6,767 delegates and 628 researchers did not buy tickets to enter to the Angkor Site. The delegates and researchers spent 10,105 days and 29,281 days visiting Angkor Site respectively.

XIV.2. Tourist activities at the Temples

XIV.2.1. Cases of injuries:

There were 192 cases of tourist injured physically and sick. It included slippery or stumble causing sprained and hurt, head hitting to the temple pediment, falling from the "moto-remorks", monkey bite, fainting and stomachache.

Action Taken:

Tourist agents cooperated with public order staffs, tourist and heritage police units to rescue minor injuries and send to hospital the serious ones.

XIV.2.2. Tourist Lost and Found:

In 2016, there were 205 cases recorded as losses of belongings. It included hand phones, bags, purses or wallets, and cameras. Among these 205 cases, 158 cases were found and 47 completely disappeared.

Action Taken:

Tourist agents cooperated with public order staffs, tourist and heritage police Units to give back the found items to the possessors on the site. When owners were not found, belongings were kept in tourist police office for further researches.

XIV.2.3. Inappropriate behavior of visitors and illegal activities

In 2016, there were 193 cases recorded in Angkor Site as inappropriate behaviors of visitors and illegal business activities. It included wearing inappropriate dresses, entering in forbidden areas of temples or climbing on stones, and smoking. Additionally, unauthorized drone flying and unpermitted filming from APSARA National Authority were recorded as illegal business activities.

Action Taken:

On-site tourist agents advised visitors who wrongly behaved in Angkor Site to write a letter to apologize for their fault. They also suggested people who produced films and flew drones in Angkor Site to delete pictures or videos that did not have permission from APSARA National Authority. They asked them to get permission from APSARA.

XIV.3. Tourism facilities

A cooperative work has been carried out to improve tourism facilities at a number of important individual temples and at particular spots in Angkor site.

XIV.3.1. In Some Individual Temples

- Direction signs, protected lines, information panels, wooden platforms or stairs, walk ways have been regularly maintained;
- Installation of sign boards of Angkor Visitor Code of Conduct in some significant temples;
- Some holes and muddy areas in front of Angkor Wat Temple and Ta Prohm were filled up with earth;
- The Department has been working with related Departments of the APSARA National Authority to monitor the floating bridge construction next to the causeway of Angkor Wat Temple;

- Planning for temporary parking area for “moto-remorks” at the west side of Ta Prohm temple;
- A study about replacing the grey pebbles of walking trails in Angkor Wat temple with grass is underway.

XIV.3.2. In Angkor Park

- In cooperation with other institutions, following up work of installing antenna as form of artificial trees for phone and internet service supply to improve network communication and answer to visitor needs in Angkor;
- Strengthening the cooperation work for enlarging the road around Trapeang Ses in front of Angkor Wat temple and the road from Angkor Wat to Bayon Temples by bicycle lanes;
- In cooperation with the other departments, restoration of the road from the East entrance of Angkor Wat Temple to Srah Srang by bicycle lanes;
- In cooperation with the Department of cultural development, elaboration of new historical panels and temple name signage for all temples.

XIV.4. Tourism Management

XIV.4.1. Administrative tasks

- Organizing internal regular meeting in evening to follow up working progress;
- Organizing weekly inter-departmental meetings to verify working progress between departments;
- Providing technical advices for the new pricing options of tickets to Angkor Site;
- Providing technical advices and coordinating the organization of dinners and shows at the temples.

XIV.4.2. Flow Management

- Organizing flow management for vehicles, moto-remorks, and motos as well as walking lanes into the gate of Tonle Oum and determining the opening and closing time (7:30am – 11:30am) for outward traffic of vehicles from Bayon temple to Tonle Oum gate;
- Organizing flow management in front of Angkor Wat temple by closing the ‘T’ road (right in front of Angkor Wat temple) to minimize traffic and allow only bikes and walkers in the close section;
- Cooperating with the other departments to organize the flow management at the roundabout of Kamnop Champok to improve traffic circulation;
- Preparing working improvement for the management of Phnom Bakheng Parvis.

XIV.4.3. Improvement of tourist services

- Creation of tourist website for Angkor (angkor.com.kh) to be officially launched on February 1, 2017;
- Work in cooperation with the private sector and involved stakeholders to disseminate and implement Angkor Visitor Code of Conduct especially with Angkor Enterprise to strengthen the dressing code;
- Developing Angkor Visitor Code of Conduct with three new languages, Spanish, Portuguese, and German;
- Work in cooperation with involved stakeholders especially with the companies of Angkor Beer, Cambodia Beer, Leo Beer, Anchor Beer and Coca Cola to withdraw 452 commercial banners bearing the names of these companies, from Angkor Site;
- Equip tourist agents with new uniforms, talkie-walkie, and first aid facilities to effectively fulfill their duty at the site;
- Conducting visitor survey through QR code in Siem Reap International airport at Domestic and International Departures;
- Advise to visitors about how much danger would happen to temples and Angkor when playing Pokémon Go. Providing visitors free drinking water during hot

season and important events and advise to drink enough water to avoid dehydration.

XIV.5. Special events

- In cooperation with the other institutions for organizing Angkor Sankranta 2016 event especially for building "Phum Khnhum" (my village) and "Nimitphum" (the rise of Angkor);
- In cooperation with the related partners for coordinating and organizing the events of Marathon, Yoga Day, 3,000 monks offerings, Huangshan mountain photos exhibition at Banteay Srei Temple, Culture Day, Trees Planting Campaign at Peung Tanoan, the inauguration of road enhancement in front of Angkor Wat Temple, Keep Angkor Clean, and China-ASEAN Friendship Concert 2016;
- Organizing a photo exhibition in front of Angkor Wat Temple.

XIV.6. Cooperation with other institutions

XIV.6.1. At national level

- Organizing meeting on tourism management at Angkor Site with APSARA National Authority and private sector consultative group;
- Providing interviews with local media about tourism management in Angkor Site;
- In cooperation with different ministries, departments of APSARA National Authority and other involved agencies and local government to organize events.

XIV.6.2. At International Level

- Reception of Delegation of Full Powers from Samdech Prime Minister, H.E. Sok Sangvar, on behalf of the APSARA National Authority, signed a Memorandum of Understanding (MoU) with Huang Shan Authority of China and INAH (Instituto Nacional de Antropología e Historia) of Mexico;
- H.E. SOK Sangvar gave interviews to the international media about tourism management in Angkor Park.

XIV.7. Trainings

- Technical training to 197 newly recruited tourist agents;
- Recruitment and training of 21 heads and 23 deputy heads of tourist agents;
- 2nd First Aid training course to 15 tourist agents including heads and deputy heads of tourist agents;
- Training in English and French classes for agents of Department, to improve their language skills and to participate in a study tour in Japan;
- 4 staffs and officials lead 25 local tour guides to participate in a tour guide training course in Macao, China that was organized by UNWTO;
- One a staff and an official went to Phnom Penh for working with the Ministry of Tourism to strengthen the tour guide capacity building;
- Technical staffs trained courses on environment and sanitation to 152 local sellers and other stakeholders at Preah Khan temple and Western Baray;
- Creation an on-line database to facilitate the management of 403 tourist agents at 28 different temples in Angkor Site;
- Training of an internship from France in "on-the-job training".

XIV.8. Works in progress

- In collaboration with the other departments of the APSARA National Authority, following up of road improvement from the east entrance of Angkor Wat Temple to Srah Srang, floating bridge construction and mini round-about of Chambok-Kamnap;
- Continuation of work on improvement of direction signs, protected zones, information panels, wooden platforms and stairs and walk ways;
- Worksite in progress on the temporary parking area for moto-remorks at West Entrance of Ta Prohm Temple;

- Worksite in progress to remove the grey pebbles from the old walking paths and propose new walking paths in Angkor Wat complex;
- In collaboration with the Department of Cultural Development, realization of content and design of direction signs, information boards, and panels of names and history of the temples;
- Work in progress of the Phnom Bakheng Parvis;
- Cooperation work with UYFC to prepare the Angkor Sankranta 2017 event;
- Continuation of work on electrical poles at Phnom Bakheng;
- Work in collaboration with the relevant departments of the APSARA National Authority to enhance the watering system for the grass in Angkor Wat Complex;
- Work in collaboration with the relevant departments of the APSARA National Authority to determine the possibilities for developing more bicycle lanes and tree planting in the Angkor Park;

Work in collaboration with the relevant departments of the APSARA National Authority to determine the possibilities to propose more tourist facilities for visitors.

XV. Department of conservation of monuments outside Angkor Park

XV.1. General activities

- Emergency work to fit and reinforce the shoring system at 5 places of the temple of Chau Srei Vibol;
- Determination of the protection limits of 11 ancient sites in Sangkat Srór Ngè, and 128 ancient sites in Sangkat Krobei Real, Siem Reap city;
- Establishment of 6 boundary poles for the protection of archaeological area of the Banteay Khchong temple;
- Delimitation of archaeological protected zone at Sambor District, Siem Reap province, establishment of the plan and sent a copy to the provincial Department of the Ministry of land management, Urban planning and Construction;
- Construction of 3 guard houses: 1 at Top Chey Temple, 1 at Banteay Khchong Temple and 1 at Banteay Ampil Temple;
- Ceremony of handing over 2 sandstone pedestals of Preah Ream and Preah Leak located in front of Prasat Chen Gopura at Koh Ker site to Phnom Penh National Museum;
- Moving a naga head from Spean Touch, Khvav Village, Chikreng District to keep in Preah Norodom Sihanouk-Angkor Museum;
- In cooperation with the territorial authorities, removing of illegal poles put by unknown person on the axis of the ancient road, at Prey Kuy Village, from Roluos to Angkor;
- Monthly clean up the ancient bridges located along the National Road No 6 from Bakong to Kompong Kdej, as other archaeological sites;
- Cooperation with the Cambodian Electrical Authority to study the installation of the electrical system passing over Chau Srei Vibol Temple and Boeung Mealea zone.

XV.2. Beng Mealea to Khvav

- Installation of 4 information boards on the Ta Ong bridge and installation of 4 concrete posts to prevent heavy vehicles from crossing it;
- Reinforcement of the wooden walkway of the Boeung Mealea temple to ensure the safety of visitors;
- Cutting of 4 trees presenting risks for the monument and clearing out of two dead trees and fallen branches;
- Archaeological excavations for study of the north entranceway of Boeung Mealea Temple.

XV.3. Phnom Kulen

- Cooperation with ADF organization to excavate 2 different sites at Peam Kre Village and near the road from Onlong Thom to Khla Khmom Village;

- Installation of additional information boards along the "River of thousand Lingas" such as "forbidden to eat", "forbidden to enter the river" and "help us to keep the site clean," etc.;
- Planting of 200 Kulen trees along the "River of thousand Lingas" and at Kraul Romeas Temple;
- Participation in the planting of 5,000 trees at Phum Thmey Village with the Ministry of Environment;
- In cooperation with Archaeology Development Foundation, accurate research on archaeological sites by using the teledetection by lazer "Lidar" revealed 151 more archaeological remains as 56 ancient mounds, 66 ancient ponds, 19 ancient dams, 2 rock shelters, 4 temple mounds and 4 other archaeological protective zones.

XV.4. Kbal Spean:

- Repair of a wooden staircase to climb up the top of the mountain;
- Repair of a wooden staircase on the way to waterfall and one bridge across the river.

XVI. Department of Conservation of the Monuments in Angkor Park and Preventive Archaeology (DCMA)

XVI.1. Conservation and Restoration Work

XVI.1.1 Restoration of Laterite Enclosure Walls of East Mebon Temple

The temple of East Mebon is constructed in the middle of East Baray in a pyramidal stepped laterite basement on the top of which sit a complex of brick sanctuaries. Apart from the present ruined brick shrines, the laterite basement of the complex is well preserved in general except for the southwest corner and laterite wall enclosures. The DCMA selected the high risks areas of the complex for restoration:

- consolidation work of the 1st gradin's laterite walls in the northeast corner;
- connecting five broken stone blocks and consolidating the soil basement and backfilling some holes in the foundation with approximate 6 cubic meters of soil;
- restoring the southeast and northwest enclosure walls of the second gradin;
- arranging scattered stones (169 blocks) in the southeast corner of the temple;
- completion of the south basement consolidation and restoration;
- restoring the carination section of the southern basement of the second gradin.

XVI.1.2. Restoration of the Collapsed Laterite Enclosure Walls of Angkor Thom (4 locations)

The capital of Angkor Thom is fortified with a 12 km length of laterite wall. In 2011 during a heavy rain four locations of the wall collapsed up to the base:

- Location 1 in the northeast corner was reconstituted in end 2015;
- Location 2 is consisted of 14m in the west side of the north wall of North Gate;
- Location 3 extends up to 45m to the east side of the north enclosure of North Gate;
- Location 4 is comprised of 16m to the west side of South Gate.

The completion of restoration of these large collapsed locations is a great experience and lesson to encourage local conservators to continue their restoration activities in other ruined and collapsed walls of the capital city of Angkor Thom.

XVI.1.3. Restoration of the western stepped embankment, north side, 40m of Angkor Wat

Angkor Wat is surrounded by a large moat structured by an extensive laterite stepped embankment, almost all collapsed. In the years 1950s to 1960s some parts of this embankment were restored by EFEO; some years ago IGeS of Italia started to restore some other parts. The DCMA started its own restoration project by using traditional technique and materials to reconstitute a 40m embankment in the first phase:

- completion of 8 laterite stepped layers and continuing to reassemble the 10 large sandstone blocks up to layer 9;
- extending the restoration work southward about 11m in order to close the gap connecting to the other end left by IGeS.

XVI.1.4. Restoration of the Brick Temples in Rolous Group

The Rolous Group is mainly composed of five major temple complexes: Trapeang Phong, Prei Montira, Bakong, Preah Ko and Lolei. The DCMA have been restoring some shrines of the last three temple groups: Bakong, Preah Ko and Lolei.

• Brick Tower 8:

This brick shrine is located in the northeast quadrant of Bakong complex. Its eastern façade is entirely collapsed some years ago in 2008 after a heavy rain. A series of structural conservation and restoration interventions have been carried out at this temple along with the following of the ICC-Angkor's Ad Hoc experts on conservation. These include:

- consolidation and partial restoration of the southern plinth of the eastern door up to 20 brick layers;
- continuation of restoration of the eastern stair up to the 11th and 12th steps;
- restoration of broken staircase stones by means of fibre glass bars reinforced by Sikadure resin;
- completion of restoration of northeast basement (2 locations) up to layer 46;
- completion of restoration of southeast basement (2 locations) up to layer 48;
- completion of cleaning of dirt, brick debris and tree roots from the northeast and southeast basement;
- continuation of the consolidation work of the southern pilaster and starting restoring southwest basement up to layer 10.

• Northeast Tower of Lolei Temple:

The current structural problem of the northeast tower of Lolei Temple has been partially resolved through a series of consolidation works to be executed by the DCMA's team. The major issues at Lolei Temple include the leaning lintel of eastern façade, losing lateral stone columns, brick pilasters, serious erosion and collapse of the basements, reduction roofs and cornices are in worse condition of preservation that all need to be consolidated and partially restored. The intervention works completed and on-going works executed include:

- completed consolidation work at the west plinth of the south false door;
- completed restoration work at the southwest and northwest basements;
- completed consolidation intervention at the northern and southern pilaster heads of east door up to layer 10;
- completed restoration work at the top reduction roof in the east, southeast and northeast corners and west corner of the 3rd reduction roof;
- continuing restoration work at the 2nd reduction roof of the southeast corner up to layer 20, eastern wall up to layer 15, southern wall up to layer 16;
- completed refilling leaking holes in the 2nd and 3rd reduction roofs;
- completed restoration work at the 2nd basement floor of the southern staircase.

XVI.1.5. Southeast Reduction Roof of Preah Ko (2nd phase)

The temple complex of Preah Ko is consisted of the central shrines, two lateral libraries and one main gate proceeded with a causeway in the east, encircled with a laterite enclosure wall. The DCMA has been conducting its major structural conservation and restoration since 2008 at the central shrines, and extended several small-scale structural consolidation works at the southern library. This southern library is seriously ruined, especially the west entrance, walls, ventilation windows and reduction roofs. The DCMA has restored some parts of these architectural features:

- completion of reduction roofs in the northeast and west sides of the library;
- completion of brick restoration of the eastern roof up to layer 90 by using fibre glass bars to partially reinforce structurally weakened areas;

- continuing consolidation work and partial restoration at the northern wall up to layer 20 and refilling cracks to prevent from water infiltration on the north wall of the building.

XVI.1.6. Restoration of Southern Shrine of Kok Chork Temple

The temple complex of Kok Chork is composed of two brick shrines opened to the east, surrounded by a moat. The southern shrine is seriously ruined and damaged due to overgrowing trees and causing structurally instable south and west walls and the eastern facade. The DCMA starts a series of emergency consolidation works at the southern shrine:

- completion of mapping of the shrine elevation and its preservation conditions with sectional maps;
- completion of restoration of eastern and southern facades including the improvement work of esthetic appearance of new bricks on the south facade;
- cleaning and relocating scattered bricks from the north wall and started to partially restore it.

XVI.1.7. Conservation Work at Pre Rup Temple

Major work activities executed at Pre Rup temple complex include:

- completion of restoration of 3 stone lions at the main eastern entrance and 2 lintels;
- maintenance of wooden supports with applying anti-termite product;
- completed rearrangement work of scattered stones on the ground, first and second gradin floors;
- completion of restoration of southwest laterite gradins; e) installation of metallic scarfolding to support temporarily the collapse risk of the southwest corner of the 2nd gradin floor, and mapping the scattered stones on the floor.

XVI.1.8. Conservation Work at Angkor Wat

Angkor Wat is the largest temple complex with complicated architectural features and carvings. The major conservation issues to be encountered here include the speedy intensification of degradation and erosion occurred on bas-reliefs, decorative motifs, Apsara figures on the walls, wall corniches, pillar plinths, and roof leakage. The DCMA team of Angkor Wat conducted some activities related to conservation, restoration and carving:

- maintaining and making wooden supports for window with anti-termite product (11 locations), repairing wood paths (25 locations), repairing metallic ramps of the staircase to Bakan and completion of installation of wire net screens to prevent the towers of northwest, southwest, northeast of the 2nd gradin floor from the bat colonization, repairing the stone pavement of the 2nd gallery, northeast with new stone replacement;
- completed restoration of detached carvings from the basement of the gallery of Mahabharata, the exterior pillars of the 3rd floor of the Hell-Heaven gallery;
- replacement with new stones of the central pavement of the gopura 1 (2 locations); completed repair and glueing window balusters (27 balusters);
- identification of high risk areas (10 locations) at the Thousand Buddha Gallery, North Library of the 2nd courtyard and eastern 2nd gallery, detached carvings of the staircases of the Ta Reach Gopura, central staircase to the Bakan pavillion, 2nd floor of northwest corner;
- completed making 68 wooden supports for the buddha statues of the 2nd gallery.

XVI.1.9. Conservation Work at Kravan Temple

The major concerned issue at Kravan Temple complex is the negative impact on the inscription of the central tower generated by friction and abrasion of the visitor's bags during their visit to the interior brick carvings of the central shrine. An urgent measure is taken to prevent the continuous damage by putting a temporary robe at the gate entrance and a definitive plan for the temple's visual enhancement has been established and approved by the Ad Hoc Experts of the ICC-Angkor. In addition, an urgent reconstitution work of the leaning lions currently placed on a cement concret slab

supported by rough cement legs have been conducted by the Stone Conservation Unit of the DCMA. The test-reconstitution of one lion has been nearly completed.

XVI.1.10. Conservation Work at Baphuon Temple Complex

No major conservation work is done at Baphuon Temple but only small-scale conservation works. This includes the completed conservation work of the two broken carvings in the northeast corner of the second gallery, connection of broken stones of the first gallery, restoration of sunken stone pavement blocks in the north wing of the second gallery and restoring a beam in the third gallery.

XVI.1.11. Conservation Work at Ta Prohm Temple

There is no structural conservation work at Ta Prohm Temple. Large-scale conservation and restoration work has been carried out by the Archaeological Survey of India team. The DCMA in collaboration with the Department of Tourism Development conducted some maintenance works and propping supports:

- installing wooden supports a portion of the 2nd laterite vaulted gallery in the northwest and propping the stone vaulted roof of the 2nd western gallery;
- repairing some wooden walkways and staircases in the central complex, 2nd and 3rd galleries of the temple, repairing the wooden posts linked by a rope of the 3rd gallery.

XVI.1.12. Conservation Work at Preah Khan Temple

The DCMA did not carry out any structural restoration project in 2016 in Preah Khan but only some regular maintenance activities:

- consolidation of the basement soil and insertion of new laterite blocks into the western sunken basement of the northern 3rd gopura;
- installation of a new concrete pipe in the walkway of the eastern main entrance;
- installation of a metallic cable to tighten the eastern tower of the 4th gate;
- installation of a metallic scarfolding to prevent the eventual collapse of the dead cotton tree in the southern library, and an executive plan of partial anastylosis of the western facade of this library was adopted and already presented to the ad hoc experts on conservation of the ICC-Angkor for their approval;
- completed repairing some stone pavement blocks of the 3rd northern gate;
- replacement of new wooden supports and applied anti-termite products onto all wooden supports (38 locations).

XVI.1.13. Conservation Work at the Terrace of the Elephants and Tower N2 of Sour Prat Temple

The lotus-decorated structure in the north end of the Elephant Terrace was partially collapsed in June 2015 after a heavy rain. The feature was once reconstituted and restored by EFEO under the supervision of Dr Christophe Pottier in 1997. The DCMA have been working with Dr Christophe to reexamine the situation and adopted the method of restoration which is approved by the ad hoc experts of the ICC last year. The restoration work was nearly completed. Fiberglass bars and Sikadure epoxy resin RT752 were used to connect and repair broken stones.

A propping support is installed to prevent the lintel of the southern facade of Tower N2 of Sour Prat Temple from collapse.

XVI.1.14. Southwest Water Outlet of Angkor Thom's Moat

Completed repairing and putting in place all 10 laterite blocks into their original position, displaced by looters at the southwest water outlet of Angkor Thom's moat.

XVI.1.15. Conservation Work at Banteay Srei Temple

- Completed repairing the wooden walkway and arranging scattered stones of the 1st and 2nd gopura gates;

- conducting rescue archaeology excavations at 14 locations to investigate an ancient water drainage system and reusing it to drain rainwater in the eastern courtyard of the main entrance
- completed restoring the northern porch of the eastern 3rd gopura;
- completed restoring the southwest laterite corner of the rampart up to layer 5 of the laterite wall by reusing old laterite blocks and few new ones.

XVI.1.16. Conservation Work at Tonle Sngout

The temple is located to the north of Angkor Thom and has been believed to be one of the so-called hospital building of Jayavarman VII. The main building is seriously ruined by overgrowing trees on the top of the structure, and caused the instability of the nearly half super structure. The current preservation condition of the structure requires an urgent dismantling work of the roof and stabilization of other architectural elements. The completed technical mapping and graphic documentation were made and archaeological investigations will be carried out in order to investigate the foundation stability.

XVI.1.17. Maintenance Work at Neak Poan, Prasat Prei, Banteay Prei, Krol Ko, Ta Som, North Gate and South Gates of Angkor Thom, Ta Oun, Bayon, Preah Ang Ngok Vihara, Phimeanakas

- repairing all decayed wooden supports and covering with anti-termite products (Neak Poan, Ta Som, Prasat Prei, Banteay Prei, Krol Ko);
- installation of a new wooden protection frame of the whole gate;
- propping the eastern pavilion of Ta Oun temple with metallic scaffolding and conducting technical documentation of the structural behavior in order to submit an executive restoration plan to the ad hoc experts on conservation of the ICC-Angkor by the end of May 2017;
- connecting 3 Tevoda heads of the south gate of Angkor Thom;
- renovation of the entire roof and superstructure of the vihara of Preah Ang Ngok;
- previous wooden staircase becomes decayed and instable for the visitors, a new wooden staircase of 54m in the west side of the pyramidal temple of Phimeanakas was constructed.

XVI.2. Archaeological Collection Management

• Artifact Inventory Work:

Two types of artifact inventory work have been carried. The first is to deal with recording current locations and conditions of sculptures scattered around and inside the temple complex in Bayon (gallery 1, 2 and central sanctuary in total 318 items), in Angkor Wat (320 buddhist sculptures and decorative elements in DCMA's store room, 49 items in the 2nd gallery), Kapilapura (93 items), 1 inscription from Prei Khmeng, and transferring previously collected 442 items to Preah Norodom Sihanouk-Angkor Museum;

• Renovation of Storage Room:

Following the approval of the former President of APSARA Authority, the building T2 in the APSARA compound was renovated and will be used as an artifact storage room.

XVI.3. Rescue Archaeological Work

A series of rescue archaeological activities include:

- test-excavations to document the occupational stratigraphy of a mound in the east of Phnom Bakheng;
- test-excavations to record the construction process of the reservoir in the east of Tonle Sngout temple;
- research excavations to investigate the foundation and construction techniques of the southern brick shrine of Kok Chork temple;
- test-excavation to document the formation process of Trapeang Khmoch in South village of Srah Srang;
 - archaeological excavations to investigate the construction technique of the west dike of West Baray.



Kingdom of Cambodia

Nation Religion King

Annual Revenue and Expenses

of the APSARA National Authority in 2016

		In Riel
I.	Total Revenue	69,419,807,454.00
COA	Name of COA	
730083	Revenue from the sale of an egg	645,279,950.00
730088	Miscellaneous revenues (Electric...)	109,806,460.00
7501	Public fund subsidies (Military)	6,840,000,000.00
7501	Public fund subsidies	59,250,000,000.00
75081	Conservation and development fund for the Angkor region	672,727,273.00
75088	Miscellaneous subsidies	377,780,439.00
7518	Miscellaneous subsidies for the investment costs	524,963,637.00
7606	Currency exchange gain	999,249,695.00
II.	Total Expenses	68,400,597,153.00
COA	Name of COA	
60011	Maintenance and cleaning equipment	24,323,400.00
60012	Building and monuments maintenance equipment	317,045,180.00
60013	Maintenance equipment for the road, bridges and sewers	52,164,000.00
60015	Fuel and oil	1,252,428,815.00
60021	Office supply and printing	1,050,789,101.00
60022	Books and document	6,010,300.00
60032	Confectionery	595,201,100.00
60033	Seeds and plants	2,063,500.00
60034	Welfare plant protection products and fertilizers	34,143,000.00
60035	Species and pharmaceutical raw materials for medical	305,952,200.00

60038	Food and other agricultural products	29,837,900.00
60041	Uniforms	350,114,900.00
60048	Clothing and other decorations	8,854,000.00
60051	Technical equipment	375,669,400.00
60052	Furniture	263,835,900.00
60053	Office supply	673,923,550.00
60054	Transportation equipment and tools	523,650,000.00
60058	Small equipment, furniture and other equipment	34,515,000.00
60061	Electric	1,318,921,600.00
60981	Road signs	240,351,220.00
610111	Cleaning services for the Angkor area	2,966,909,083.00
610112	Cleaning services for the office	447,272,727.00
6102	Vehicles rental	96,450,000.00
6103	Miscellaneous rentals	15,120,000.00
6104	Training staff in ang out of the country expenses	46,613,585.00
61051	Maintenance and management of the Angkor forest	278,330,200.00
61052	Maintenance and repair of building and monuments	2,055,279,272.00
61053	Maintenance and repair of roads,dirt road,bridges sewage systems	15,767,534,471.00
61054	Maintenance of other type of works	193,595,500.00
61056	Maintenance and repair of vehicles	1,476,665,800.00
61057	Maintenance of hardware and accessories	101,030,700.00
61058	Maintenance and repair of technical equipment	48,061,700.00
61071	Research and experimentation expenses	92,215,800.00
61072	Service expenses	20,905,000.00
61073	Hydraulic related expenses	16,778,000.00
61074	Contruction in the civil sector	4,131,775,065.00
61078	Other expense	363,934,100.00
61092	International contract officer	1,254,065,933.00
61101	Hospitality expenses for national quests	904,783,840.00
61102	Hospitality expenses for international quests	137,297,140.00

61103	Meetingsç seminars, conferences	416,569,537.00
61104	Expenses for ceremonies, national celebrations and miscellaneous	235,724,400.00
61105	Souvenir purchasing expenses in and out of the country	20,281,700.00
61106	Exhibition expenses in and out of the country	115,654,600.00
61107	Awareness and outreach campaigns expenses	465,500,095.00
61111	Information and documentation circulation expenses	2,332,500.00
61122	Assignment inside the country expenses	772,583,620.00
61132	Assignment outside the country expenses	75,108,000.00
61141	Post expenses	4,052,300.00
61142	Telephone expenses	174,675,183.00
6115	Bank transfer expenses	75,915,746.00
62034	Subsidies to the Red Cross	22,500,000.00
64021	Basic salary	18,415,289,320.00
64023	Aditonal salary for holiday	911,423,000.00
64026	Aditonal bonuses in areas	1,000,000.00
640341	Heritage police subsidies	267,444,000.00
640342	Tourism police subsidies	66,034,000.00
640343	Subsidies to security in the office	9,600,000.00
640344	Subsidies to response teams and firemen	133,714,000.00
640346	Miscellaneous subsidies, donation	298,709,600.00
64038	Miscellaneous bonuses	82,674,600.00
64041	Basic salary for contracting personnel	6,727,659,900.00
64042	Miscellaneous bonuses for contracting personnel	194,145,000.00
64051	Miscellaneous diseased	9,629,000.00
64052	Miscellaneous maternities	100,000.00
64053	Miscellaneous mortalities	14,518,900.00
64056	Miscellaneous for the other accidents	1,200,000.00
65068	Contribution to foreign associations	688,509,822.00
6301	Car tax	40,243,000.00
6302	Charge customs duties on exports of goods and materials	13,050,000.00

66981 Currency exchange loss 270,343,348.00

Surplus

1,019,210,301.00

Note : 1-In total recurrent expenses **68,400,597,153.00 Riel** Including the following expenses ÷

- Expenses for conservation and development for the Angkor region	2,461,743,133.00
- Investment costs	337,636,363.00
- Expenses for Miscellaneous subsidies	554,109,014.00
- Expenses for state	65,047,108,643.00

2-In total recurrent expenses **68,400,597,153.00 Riel** Including the following expenses of Fixed Assets ÷

Fixed Assets in 2016

5,029,974,650.00

COA Name of COA

210118	Other land	3,990,313,350.00
21081	Transportation tools and equipment	523,650,000.00
21082	Office tools and supply	85,349,700.00
21083	IT and telecopy equipment	243,001,700.00
21084	Furniture	155,208,900.00
21088	Other fixed assets	32,451,000.00

Siem Reap, On 23 March 2017

Read and approved

Report drafted by :

Director of Finance and Accountancy

Read and approved

Director General