United Nations
Educational, Scientific and
Cultural Organization

International Centre on Space Technologies for
Natural and Cultural Heritage
under the auspices of UNESCO

THE WORLD HERITAGE CONVENTION AND THE GENERAL STATUS OF WORLD HERITAGE

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Presentation in 2 parts

- **Part 1 – on the idea of World Heritage, the work of the Convention and current status and emphasis of the Convention's implementation**

- **Part 2 – The role of earth observation technologies and their role in the work of the Convention to conserve, manage and sustainably develop sites**

Part 1

- On the idea of World Heritage, the work of the Convention and the current status of the Convention's implementation

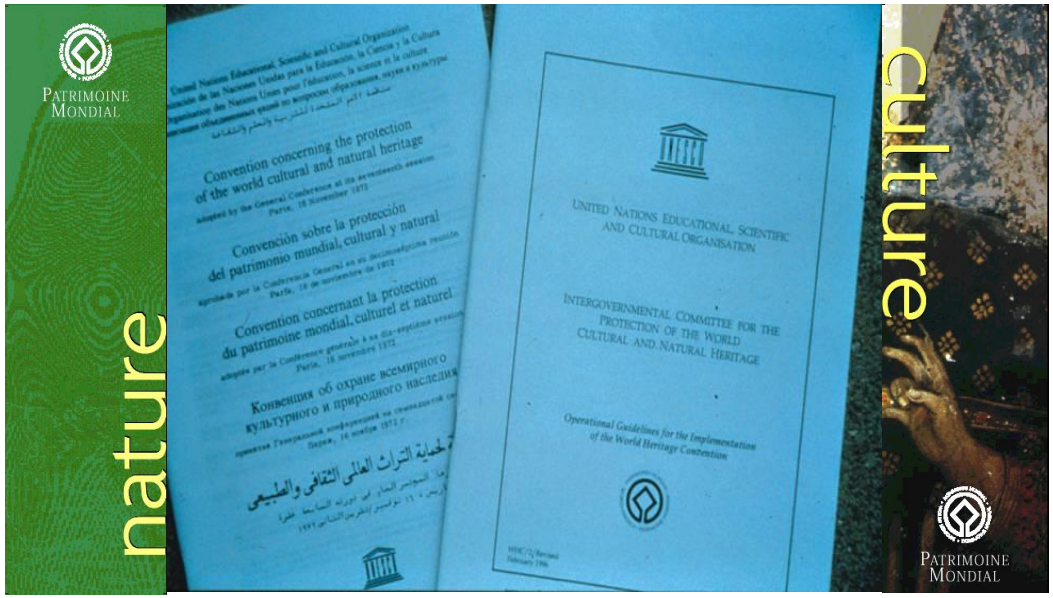
Memphis and its Necropolis – the Pyramid Fields from Giza to Dahshur

Great Barrier Reef, Australia

World Heritage List

- 1031 sites in 163 countries
- 802 cultural sites
- 197 natural sites
- 32 mixed sites
- 31 trans-boundary sites
- 48 sites in Danger!

World Heritage Convention



Convention concerning the Protection of the World Cultural and Natural Heritage, 1972

UNESCO Safeguarding Campaigns

Egyptian – Abu Simbel and the Philae Temples dismantled and lifted up to safe grounds above the encroaching Aswan (cost of the campaign US$ 80 million and about US$ 40 million was donated by about 50 countries) (also see movable heritage in para 48 of the Operational Guidelines)

Other Campaigns for Borobodur, Venice and its Lagoon, Archaeological Ruins of Mohenjadaro….

The protection and safeguarding of monuments and archaeological sites – a dominant theme in cultural heritage activities of the first 20 years of the Convention

World Heritage - origins

As the United States approaches the centennial celebration in 1972 of the establishment of the Yellowstone National Park it would be appropriate to mark this historic event with a new international initiative....Yellowstone is the first national park to have been created in the modern world and <u>the national park concept has represented a major contribution to world culture</u>....It would be fitting by 1972 for the nations of the world to agree to the principle that there are certain areas of such unique worldwide value that they should be treated as part of the heritage of all mankind and afforded special recognition as a part of a World Heritage Trust.....

President Nixon (1971)

Key Concept: Outstanding Universal Value

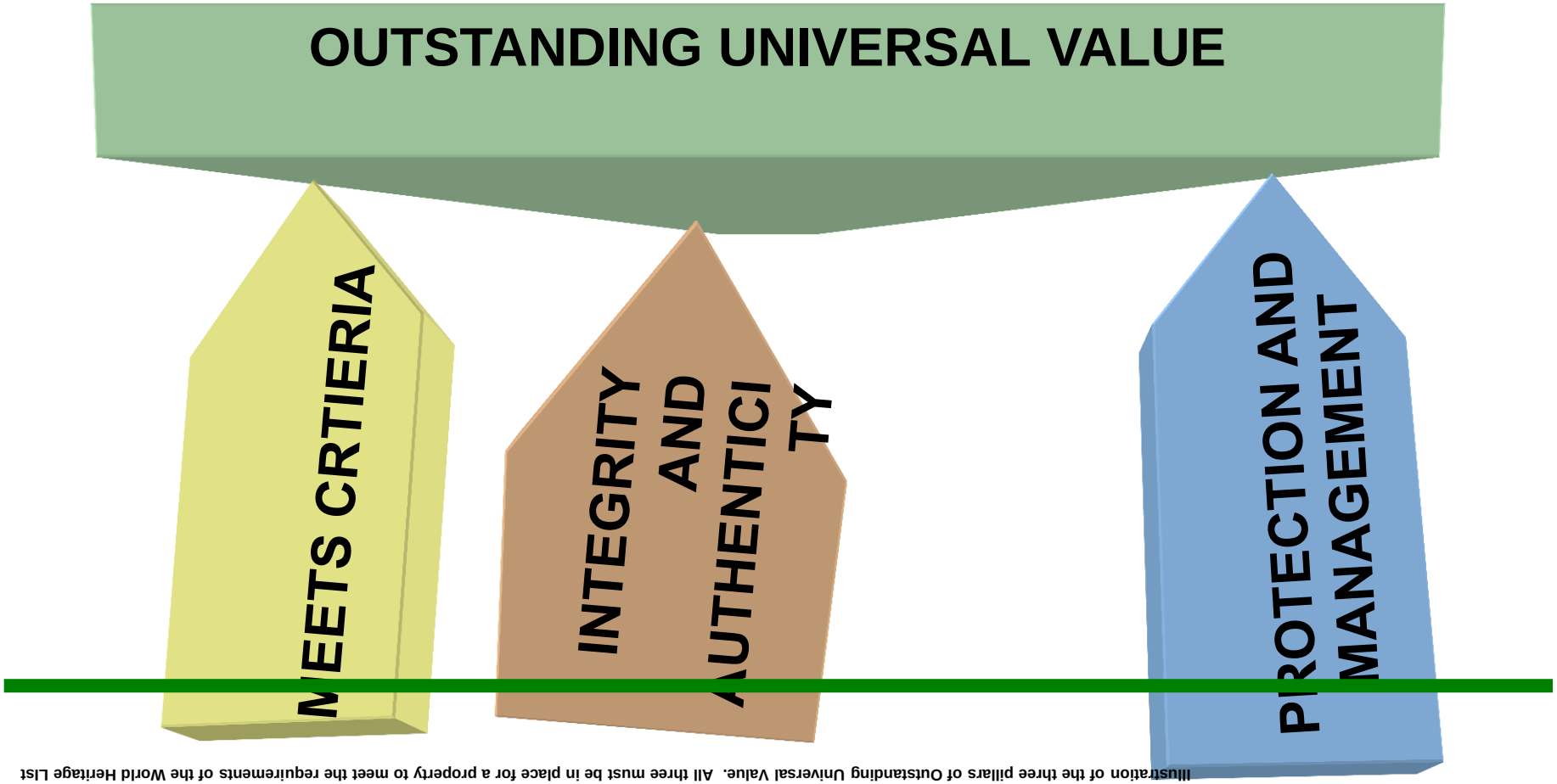


Illustration of the three pillars of Outstanding Universal Value. All three must be in place for a property to meet the requirements of the World Heritage List

"outstanding universal value"

....cultural and/or natural significance which is so exceptional as to transcend national boundaries and to be of common importance for present and future generations of all humanity.

- **Together they form a common heritage of humankind**
- **Their protection is our shared responsibility**

Important Definitions

Operational Guidelines for the Implementation of the Convention

- Definitions of World Heritage (paras: 45-53)
- Tentative Lists (paras 62-76)
- Criteria (paras: 77-78)
- Integrity and authenticity (paras 79-95)
- Protection and management (paras 96-119)
- Process for nomination and inscription (120-152)
- Decision of the Committee (paras 153-160)

World Heritage – 1972-1982

- A rush to inscribe
- WH Bureau (6 Member organ of the 21 member Committee playing a strong role)
- Inadequate emphasis on monitoring and follow-up

World Heritage – 1982 - 1992

- Natural Heritage site monitoring becomes regular; cultural heritage monitoring more and more in demand
- Considerable controversy and debate on nature/culture boundary; revision of the operational guidelines in 1992; “combined works of man and nature” taken out of original natural heritage criterion (iii) (current criterion vii) and integrated into the “new” cultural landscape category
- Cultural heritage – the “dominance” of monumental heritage challenged by landscapes and physical spaces with living traditions and customary practice

TONGARIRO
NATIONAL
PARK

World Heritage – 1992 - 2002

- “Less developed countries” demanding greater voice and say in the work of the Committee. The representativeness of the Bureau as a decision making or a prime recommending body diminishes
- Greater recognition of presentation and transmission aspects – World Heritage in Young Hands
- Growing emphasis on partnerships: UN Foundation and conservation NGOs for Natural Heritage of Global Biodiversity Significance 1998-2004: US$ 34 million through UNESCO and equal amount of partner contributions mobilized
- World Heritage Thematic Program - Tourism, Marine, Forest and Cities Programs;
- New ways of nominating sites – cluster and serial nominations

World Heritage – 2002 - 2012

- The Committee decision making process has become very structured and seeks high-precision drafting – concerns of “politicization” of decision making;
- Periodic review exercises become stronger to establish systematic work programs – African Heritage Fund
- The first two “delisting of sites” (Arabian Oryx (Oman) and Dresden (Germany)
- WH Fund lower than its peak in the late 1990s; concerns about the availability of sufficient resources to match the ideals and spirit of the Convention
- Increasing dependence on partnerships – private, public and civil society organizations; in UNESCO Category II Centres

World Heritage at 40 + return of discussions on culture – nature divide and integration

- **1972 – 1992: Cultural and Natural Heritage Criteria distinct as(C (i) – (vi)) and (N (i) – (iv));**

- **1992 – Natural Heritage Criterion (iii) – revised to take all reference to the "combined works of man and nature"; that aspect transferred to Cultural Heritage Criterion (v) and (vi) and a new category of cultural landscapes created!**

- **Early 2000s – Revision of the Operational Guidelines – Criteria named from (i) – (x) with no reference to C or N; N (iii) became criterion (vii) and N (i) became viii. But the World Heritage List still speaks of Cultural, Natural and Mixed sites in terms of numbers**

- **At the Doha (Qatar) World Heritage Committee session during 15-25 June 2014 – a special side event on "nature-culture" linkages and their interpretation under the Convention – a new cycle of discussions, changes……..??????**

World Heritage at 40 + how the World Heritage Convention contributes to sustainable development

- Sustainable development, almost by definition, is on a scale that goes well beyond the scope of a World Heritage site, so that management and planning needs must be more integrated in territorial and regional strategies – and so the results and repercussions of these actions reflect upon our larger communities and eventually our global community as a whole.

- The aim of the World Heritage Convention is the identification, protection, conservation, presentation and transmission……. The text of the Convention, adopted in 1972, does not make any specific mention of the term "sustainable development" but it does carry the spirit and promise of sustainability in its insistence that culture and nature form a single, closed continuum of the planet's resources……..

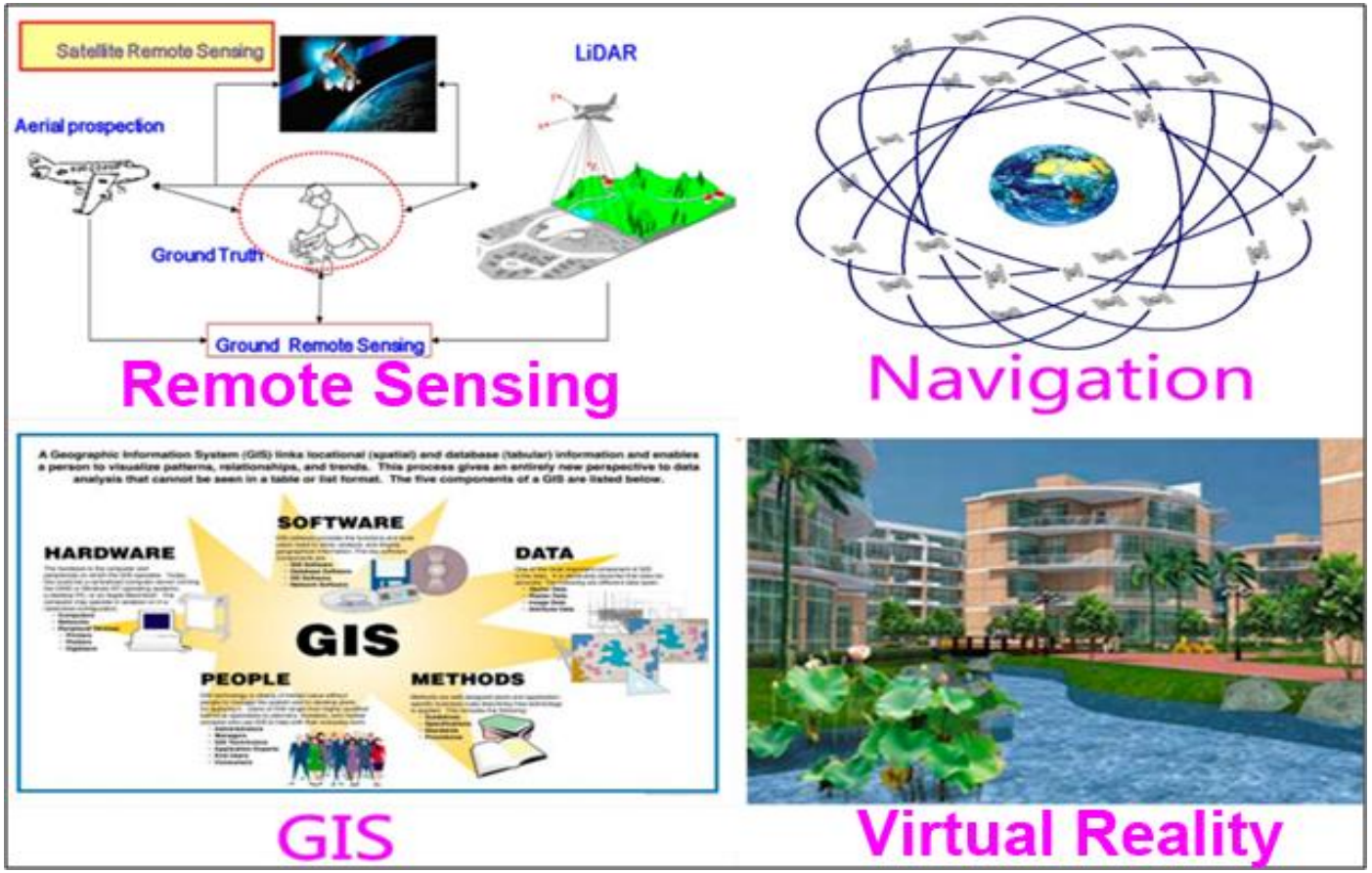
Part 2

- **Part 2 – The role of earth observation technologies and their role in the work of the Convention to conserve, manage and sustainably develop sites (post-TEA session)**

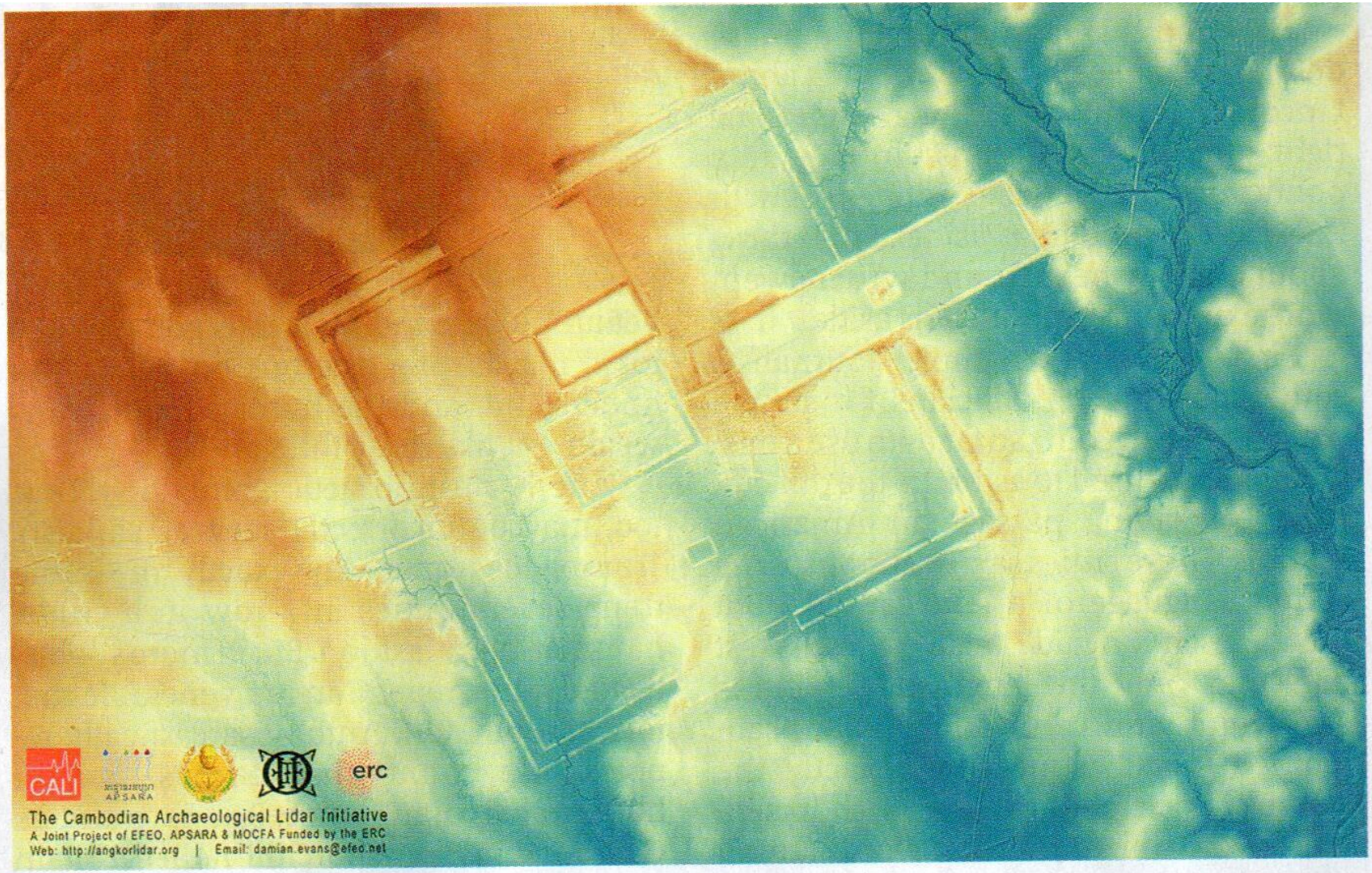
The cycle and the components

- Tentative site – identification
- Nomination – Listing
- Protection, conservation and transmission – presentation
- Reactive and Periodic reporting
- World Heritage in Danger; delisting!!
- World Heritage and sustainable development

Space Technology



Detection | **Monitoring** | **Conservation** | **Management**

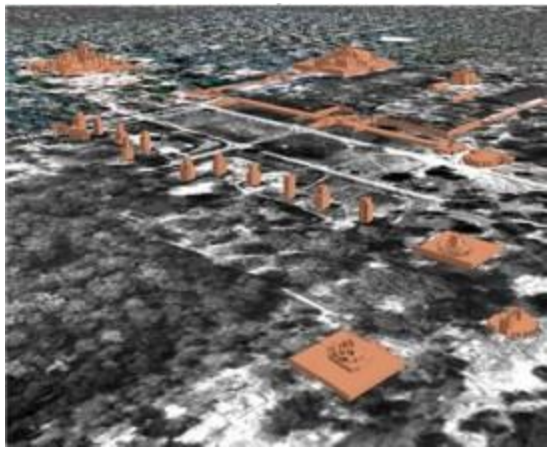


The Cambodian Archaeological Lidar Initiative

A Joint Project of EFEO, APSARA & MOCFA Funded by the ERC

Web: http://angkorlidar.org | Email: damian.evans@efeo.net

Administration and Protection



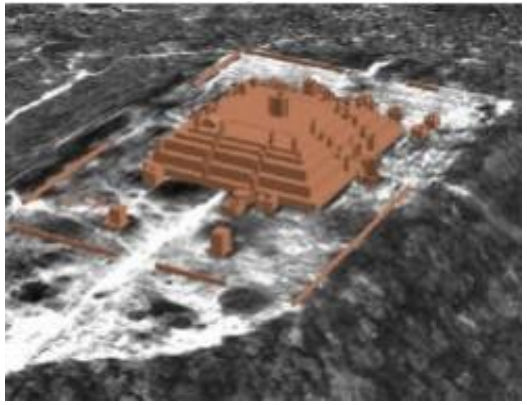
Angkor Thom with the temples of Bayon and Baphuon in the background

Reality-based 3D modeling of the Angkorian temples using aerial images

（ ETH Zurich, Switzerland ）

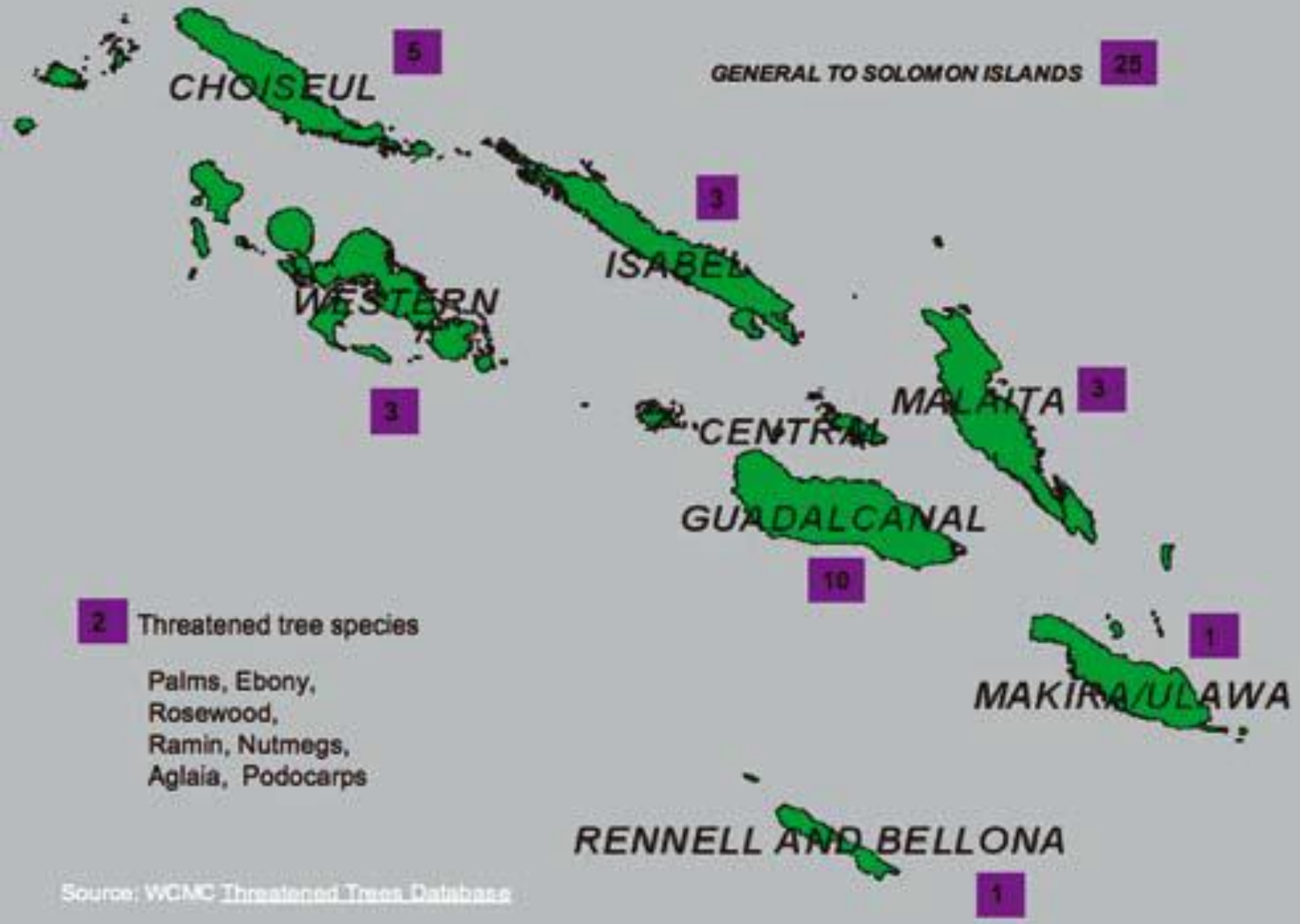
Angkor Wat

Bayon temple

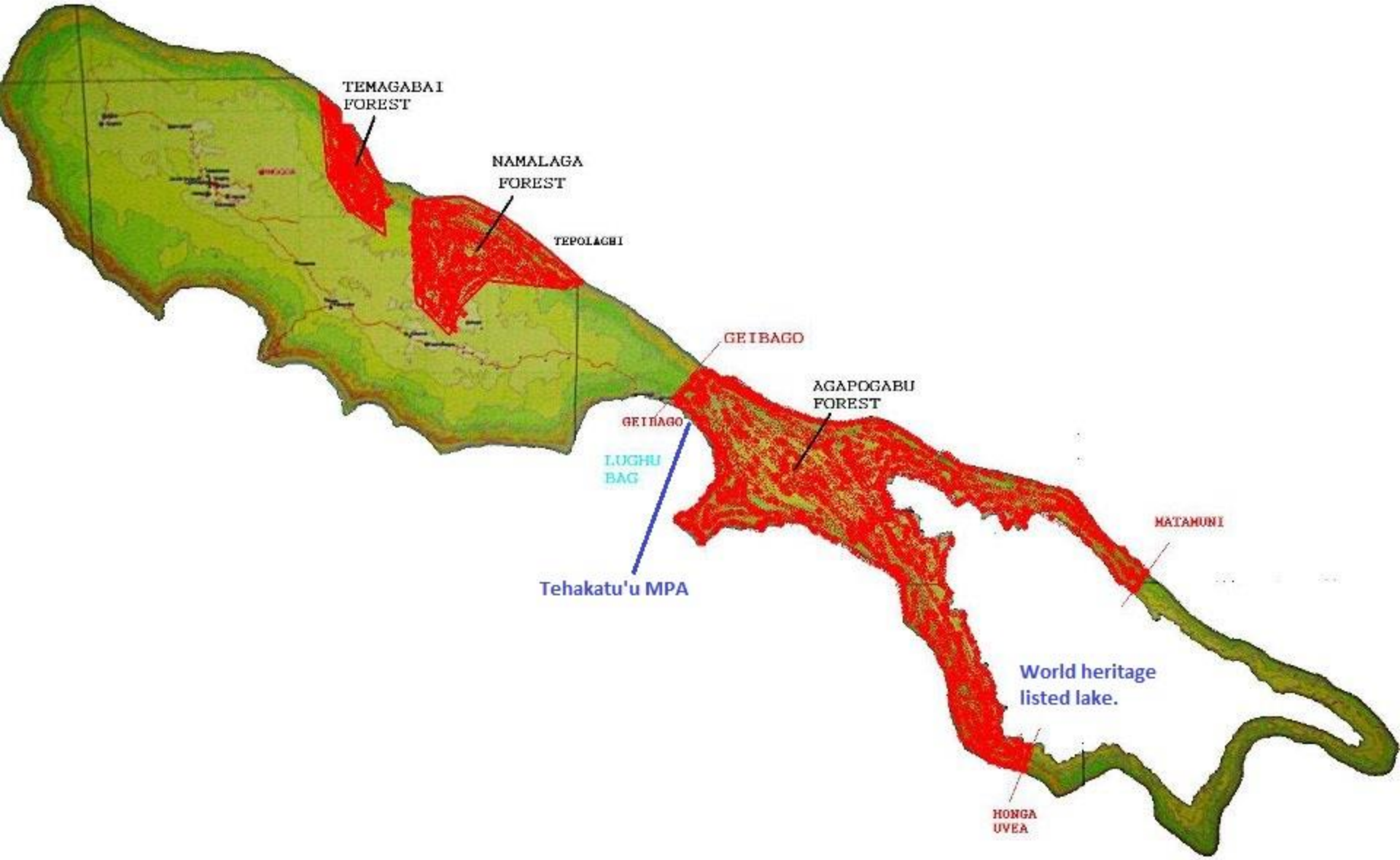


Phnom Bakheng

Abu Mena, Egypt
Modis Aqua - March 26, 2009
Abu Mena
Pyramids
2009 Estimated Extent of Development
1973 Estimated Extent of Development
N
0
100
200
Kilometers


CHOISEUL
5
GENERAL TO SOLOMON ISLANDS
25
3
ISABEL
WESTERN
3
MALAITA
3
CENTRAL
GUADALCANAL
10
2 Threatened tree species
Palms, Ebony,
Rosewood,
Ramin, Nutmegs,
Aglaia, Podocarps
1
MAKIRA/ULAWA
RENNELL AND BELLONA
1
Source: WCMC Threatened Trees Database

Rennell Island
Lughughi Bay
Kagava Bay
Steep Land
East Rennell World Heritage Site
Tebaitahe
Niupani
Tegano
Hutuna
Lake Tegano
11°45'South
10 km
North
160°30'East


TEMAGABAI
FOREST
NAMALAGA
FOREST
TEPOLAGHI
GEIBAGO
AGAPOGABU
FOREST
GEIHAGO
LUGHU
BAG
Tehakatu'u MPA
MATAMUNI
World heritage
listed lake.
HONGA
UVEA

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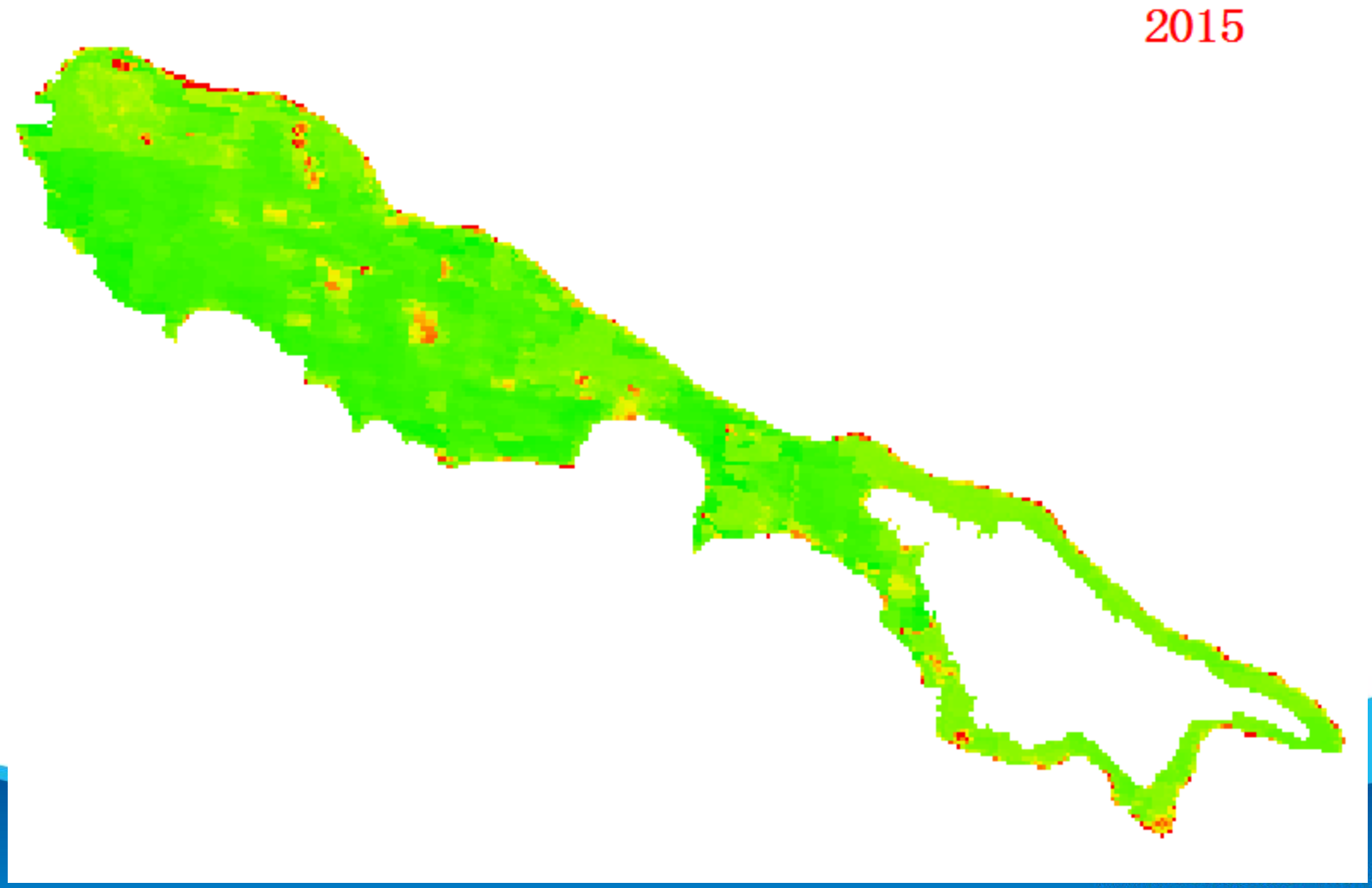
Results

- **Time series MODIS NDVI product**



Results

Mosaic Worldview image

Resolution:
0.5m
80 GB

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Results

	West of Rennell island		East of Rennell island		Whole Rennell island	
Type	Area (km2)	Percent (%)	Area (km2)	Percent (%)	Area (km2)	Percent (%)
Unspoiled forest	443.83	92.34	187.76	52.53	631.59	75.36
Reclaimed forest	18.62	3.87	0	0	18.62	2.22
Farmland	4.76	0.99	3.04	0.85	7.8	0.93
Un-reclaimed forest	3.84	0.8	0	0	3.84	0.46
Grass land	0.16	0.03	0.05	0.02	0.21	0.03
Bare land	0.73	0.15	0.1	0.03	0.84	0.10
building	0.07	0.02	0.03	0.01	0.11	0.01
Road	1.11	0.23	0.11	0.03	1.22	0.15
Water body	0	0	159.89	44.73	159.89	19.08
coast	7.47	1.55	6.5	1.82	13.96	1.67
airport	0.05	0.01	0	0	0.05	0.01

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5 km
4 km
Kulen mautain
27 km
Angkor Park
13 km
6 km
5 km
Tonlé Sap Lake

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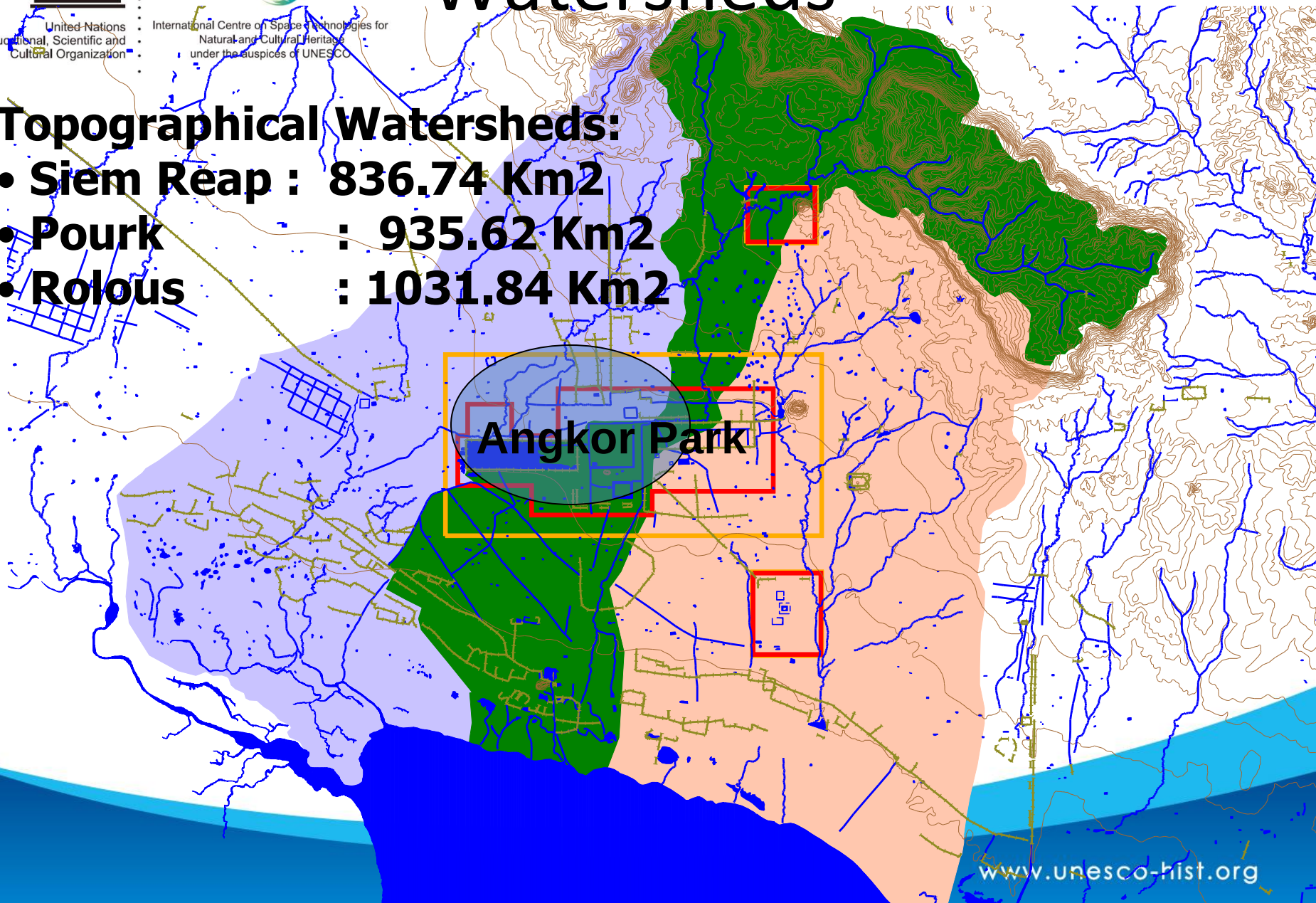
Watersheds

Topographical Watersheds:

- **Siem Reap : 836.74 Km2**
- **Pourk : 935.62 Km2**
- **Rolous : 1031.84 Km2**



Watersheds

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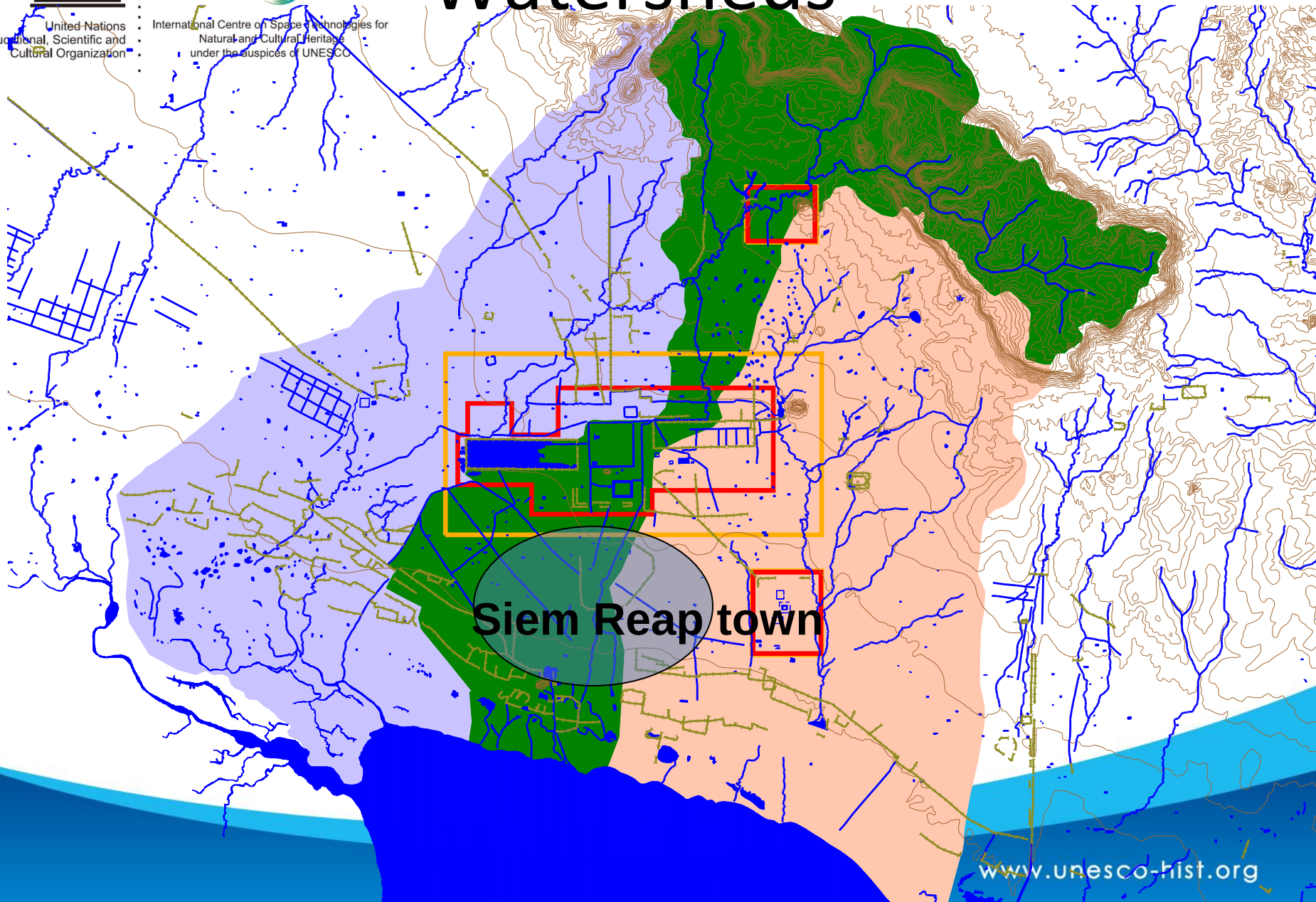

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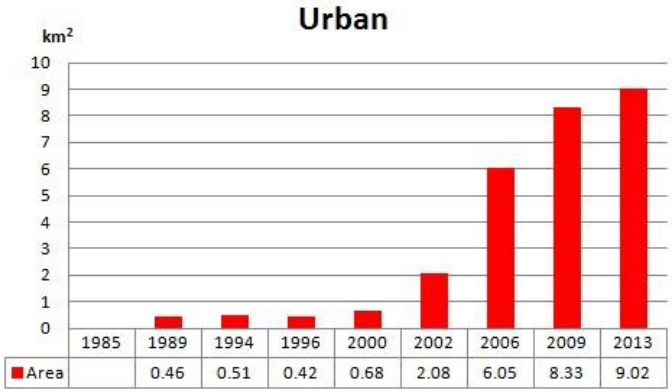
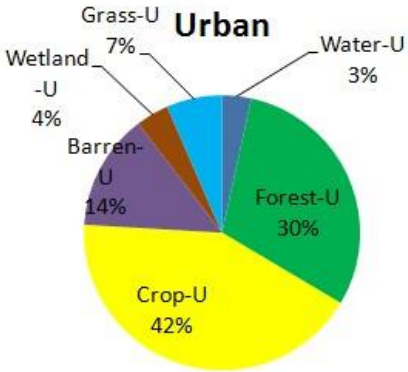
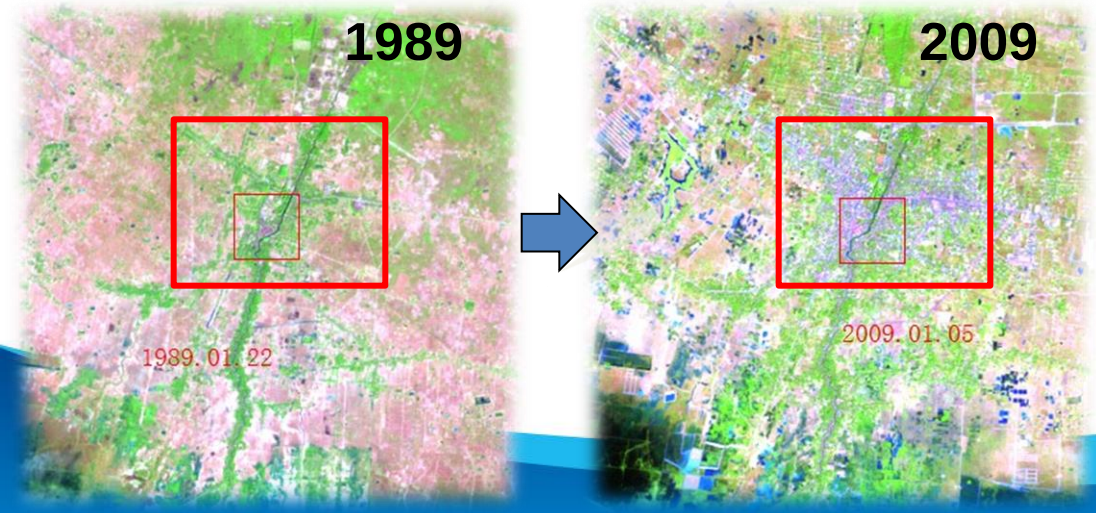
APSARA

Research Progress:

Urban Change analysis







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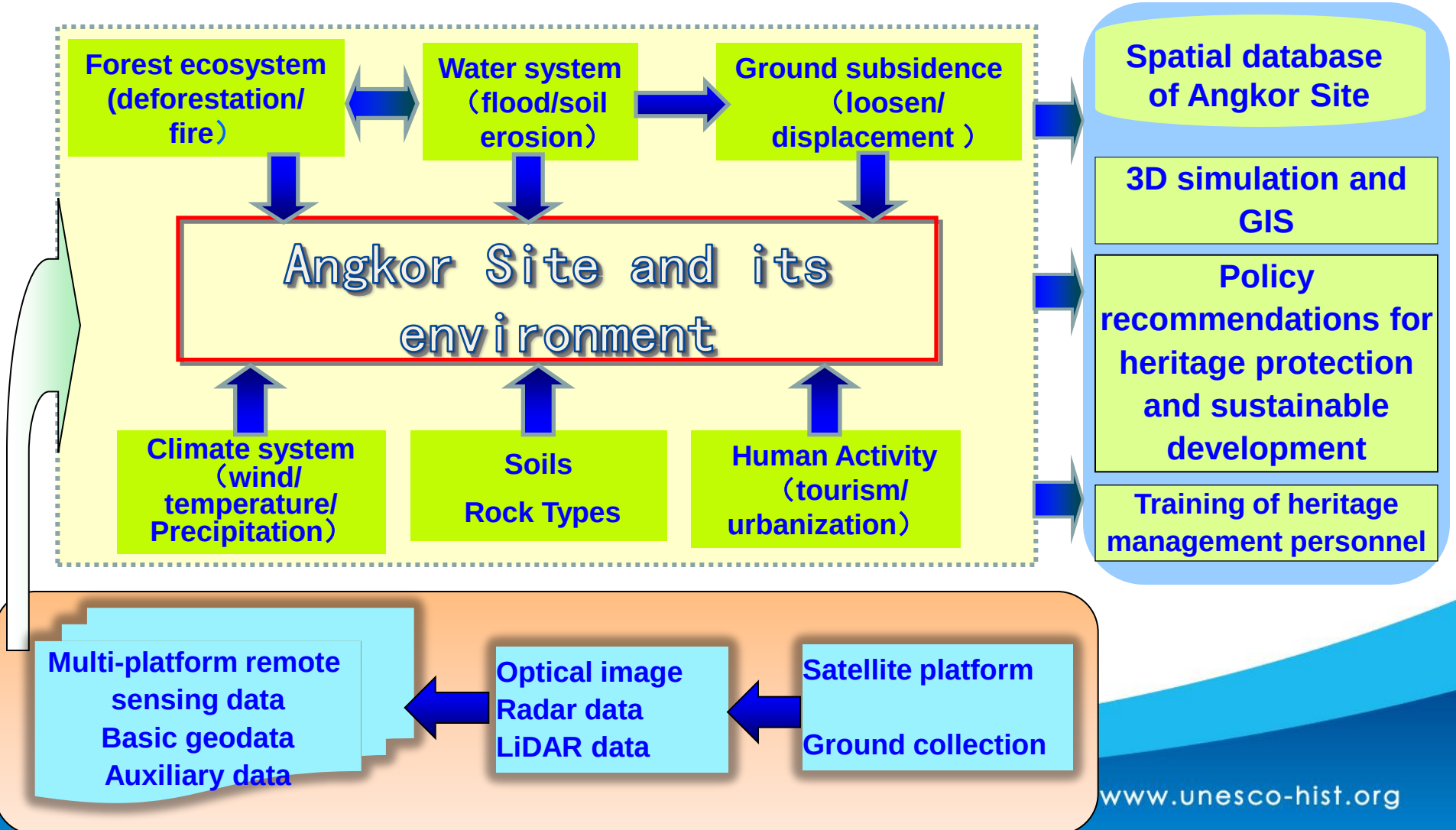
APSARA

Remote Sensing for Environment of Angkor Site (2013-2015)

REAS Remote Sensing for Environment of Angkor Site



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For the purposes of this Convention, international protection of the world cultural and natural heritage shall be understood to mean the establishment of a system of international co-operation and assistance designed to support States Parties to the Convention in their efforts to <u>conserve and identify</u> that heritage **(Article 7)**

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Thank you !

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