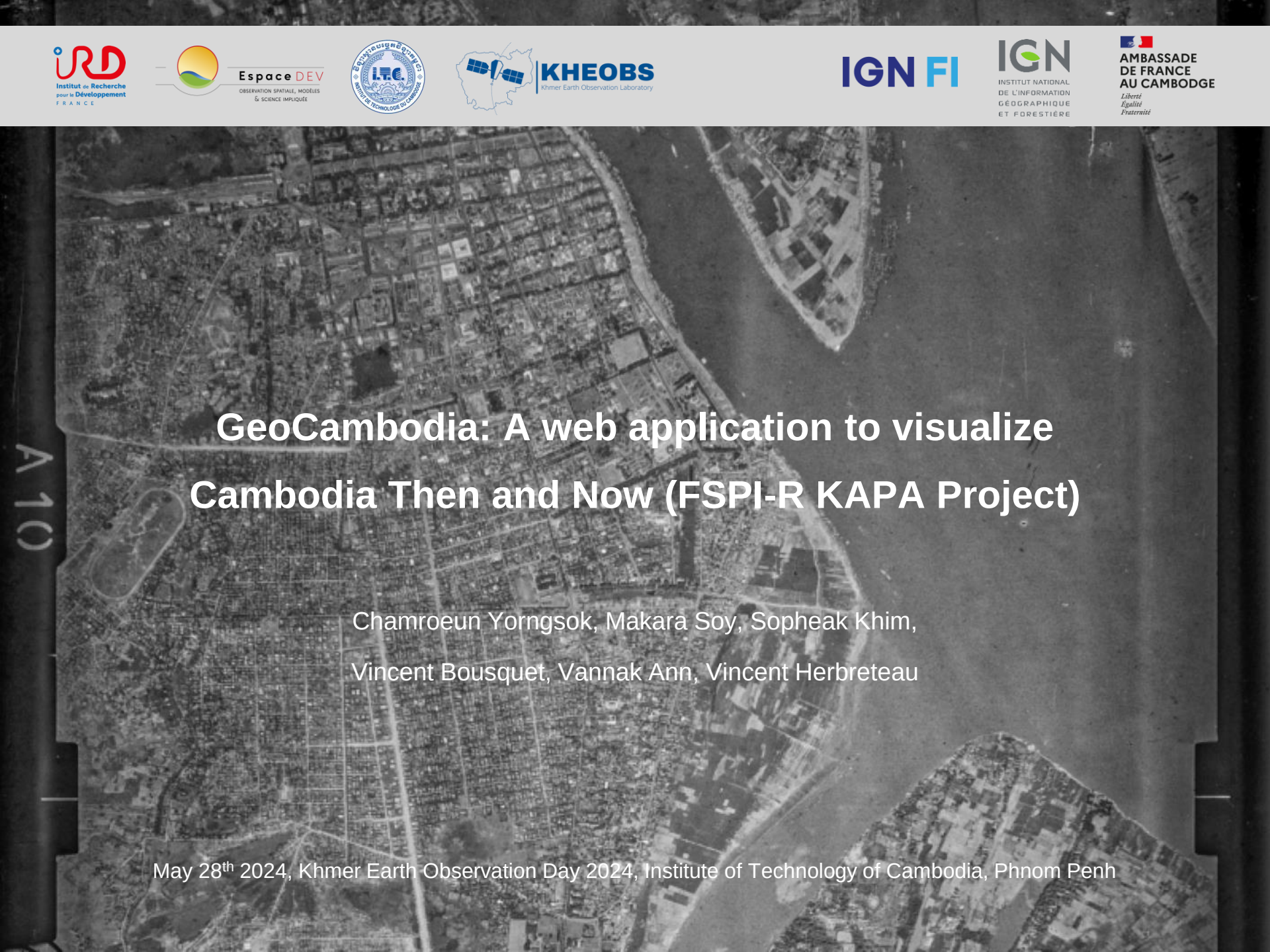


GeoCambodia: A web application to visualize Cambodia Then and Now (FSPI-R KAPA Project)

Chamroeun Yorngsok, Makara Soy, Sopheak Khim,

Vincent Bousquet, Vannak Ann, Vincent Herbreteau

May 28th 2024, Khmer Earth Observation Day 2024, Institute of Technology of Cambodia, Phnom Penh

IGN and aerial photography

The “Institut National de l’Information Géographique et Forestière” (IGN)

- Previously “Institut Géographique National”, IGN is a French public establishment founded in 1940 to produce and maintain geographical information for France and its overseas departments and territories.
- In 1948, IGN started aerial photography at a scale of 1:50,000 to map France and associated territories at a scale of 1:200,000

B17 aircraft in flight for IGN photo shoot
(Michel Bélikian, SFPT 2021)

Operator in a B17 aircraft
(Michel Bélikian, SFPT 2021)

IGN archive over Cambodia

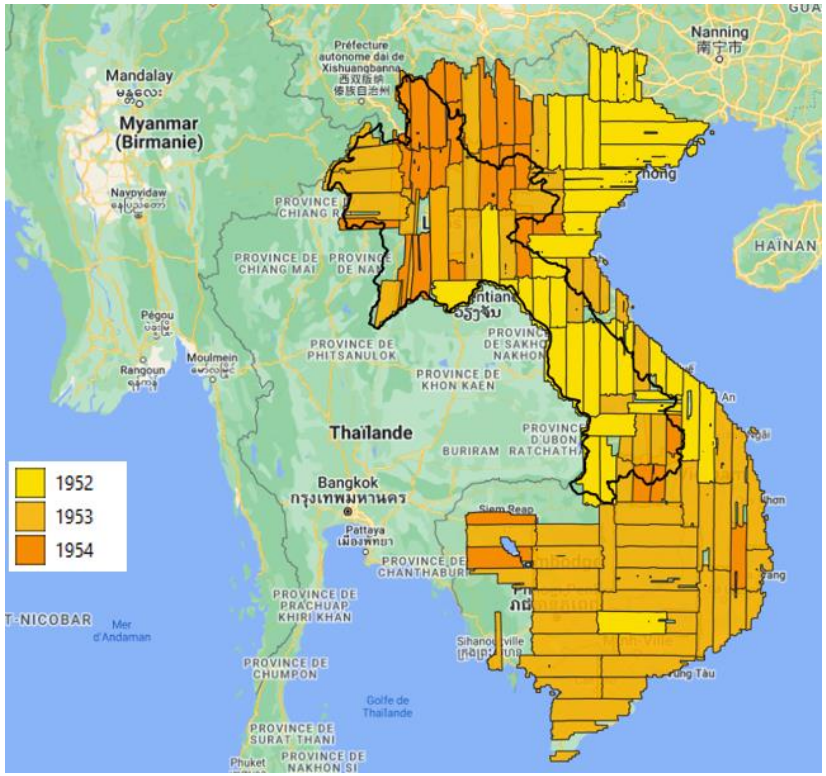
- Images taken between 1952 and 1954 (mostly 1953)
- About 11,000 images on glass plates (more stable)

+ Cover of Phnom Penh in 1993 (very high resolution)

- Stored in France, most of them not digitized (-> Risk of damage of loss)
- Proposal in 2021 to digitize and share the archive of IGN aerial photographs
- Discussion with IRD (Espace-Dev) and ITC in 2023 to implement this project in Cambodia at the KHEOBS lab.

Phnom Penh, 1953

Phnom Penh, 1993



Years of missions over Cambodia, Laos and Vietnam

Khmer Aerial Photographic Archive (KAPA)

Funded through the French Embassy in Cambodia

- FSPI-R (Fonds de solidarité pour les projets innovants - Rapide), recently renamed FEF (Fonds Equipe France), from the French Ministry for Europe and Foreign Affairs (MEAE)
- 1 year (12/05/2023 – 11/05/2024), 96,880 euros

Implemented at: Institute of Technology of Cambodia (ITC), Khmer Earth Observation Laboratory (KHEOBS)

Coordinated by:

- ITC Water and Environment Research Unit: Vannak Ann
- IRD – Espace-Dev: Vincent Herbreteau

In collaboration with:

- IGN FI and IGN

Activities:

1) digitise all the archive images (done by IGN),

2) train geomaticians to process these images in order to make them usable (training given by IGNFI),

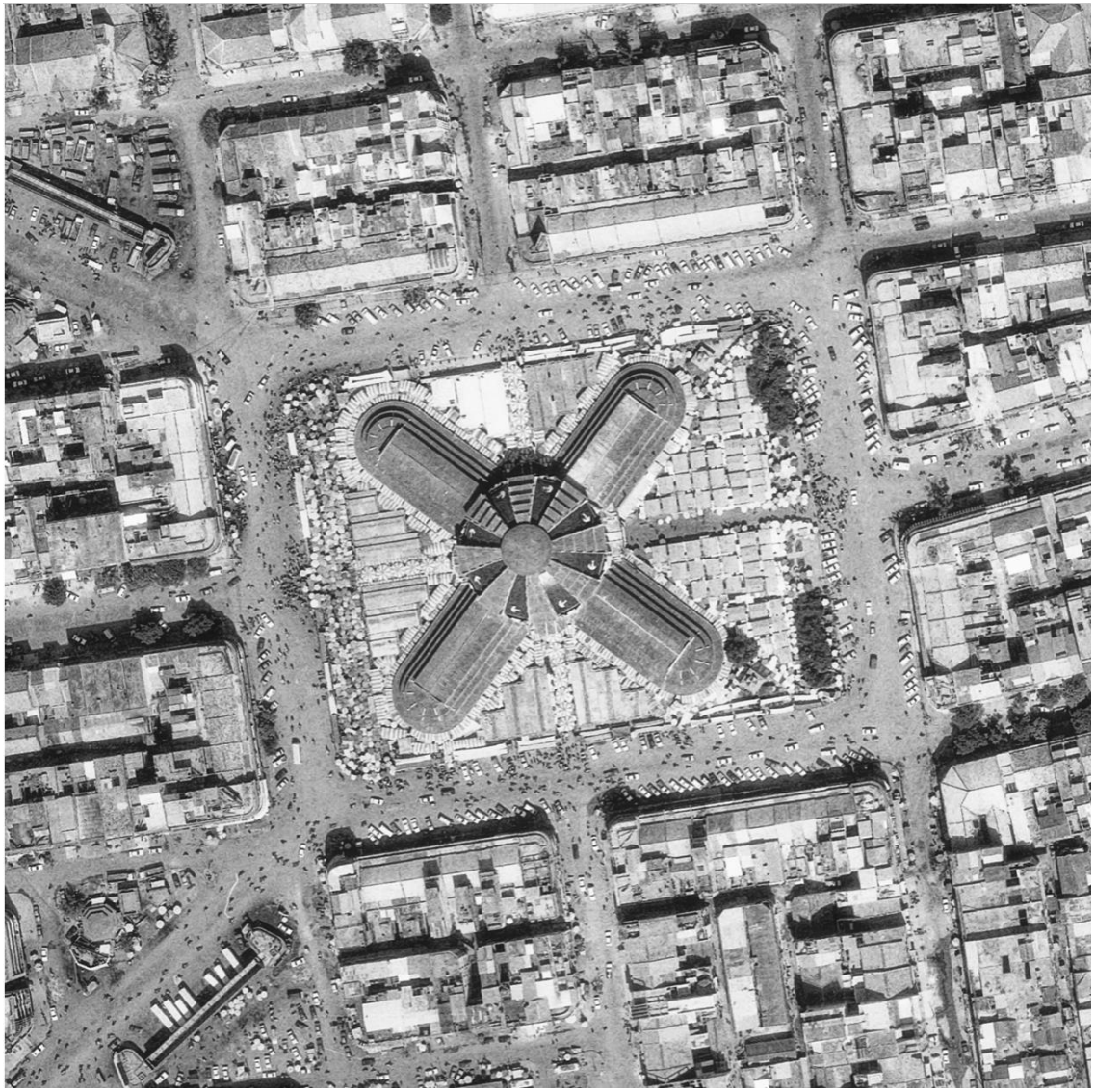
3) initiate processing of images,

-> Work of Soy Makara and Khim Sopheak

4) Development of GeoCambodia

A Glimpse to the Images

A Glimpse to the Images

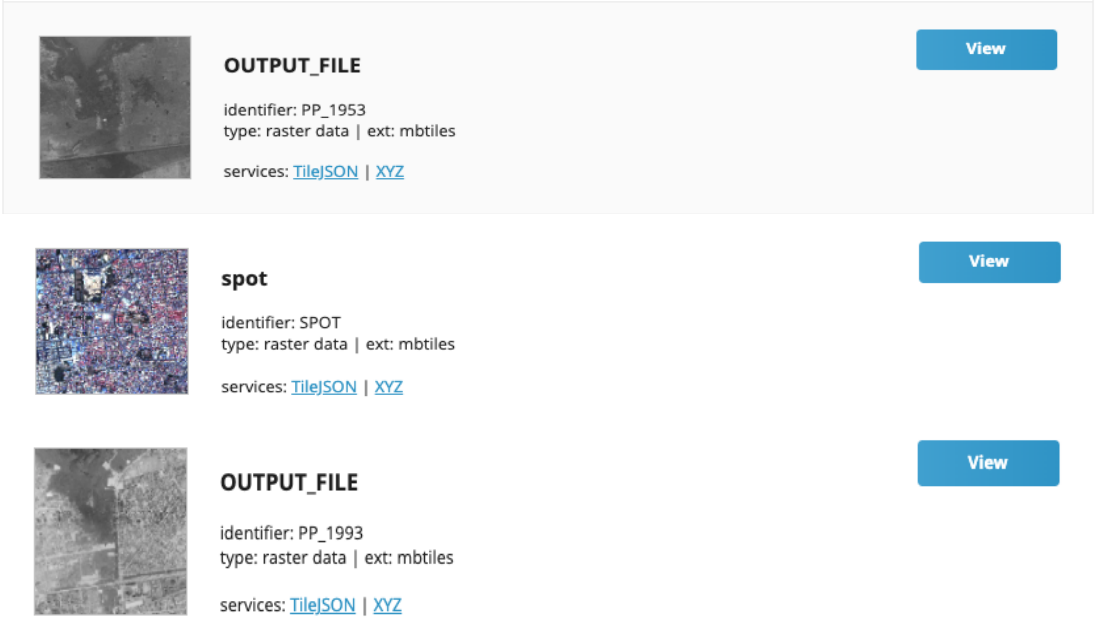


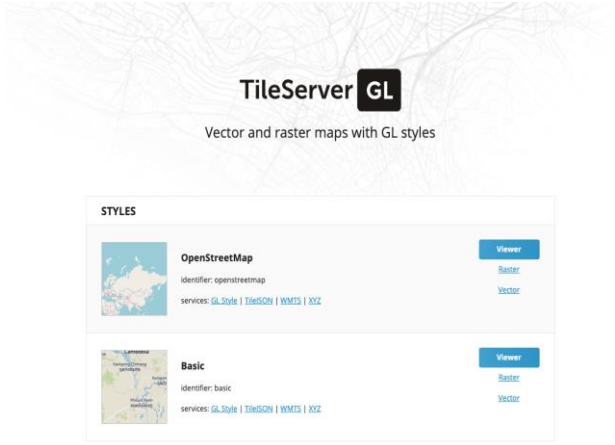
A Glimpse to the Images

GeoCambodia

The development of GeoCambodia:

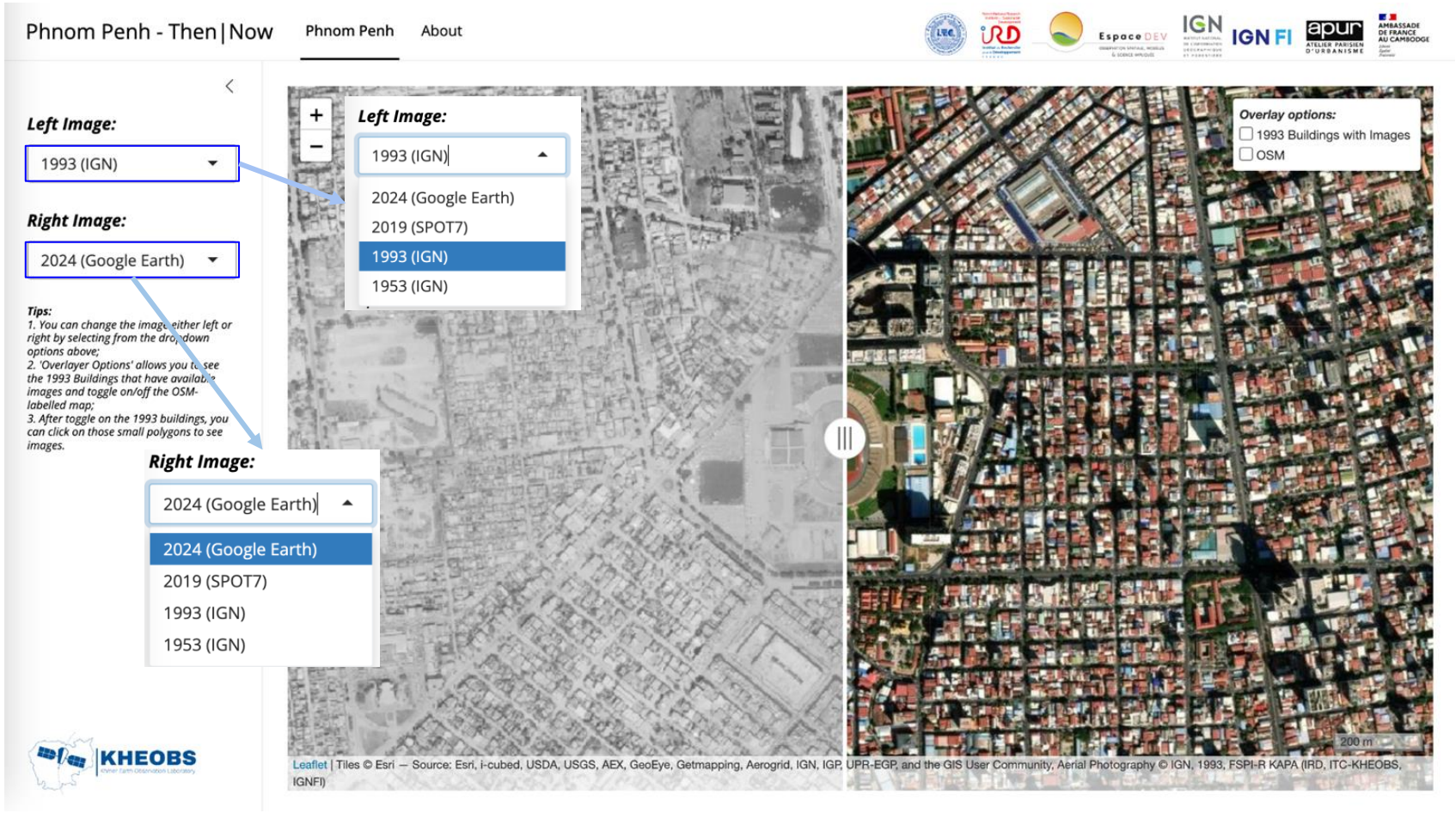
- GeoCambodia is a web application to visualize Cambodia then and now,
- It was built using R4.3.2, deployed and managed by ShinyProxy,
- Using QGIS3.3.4 to produce mbtiles that have zoom level ranges from 10 to 18,
- And TileServer to host the mbtiles and everyone can access them.



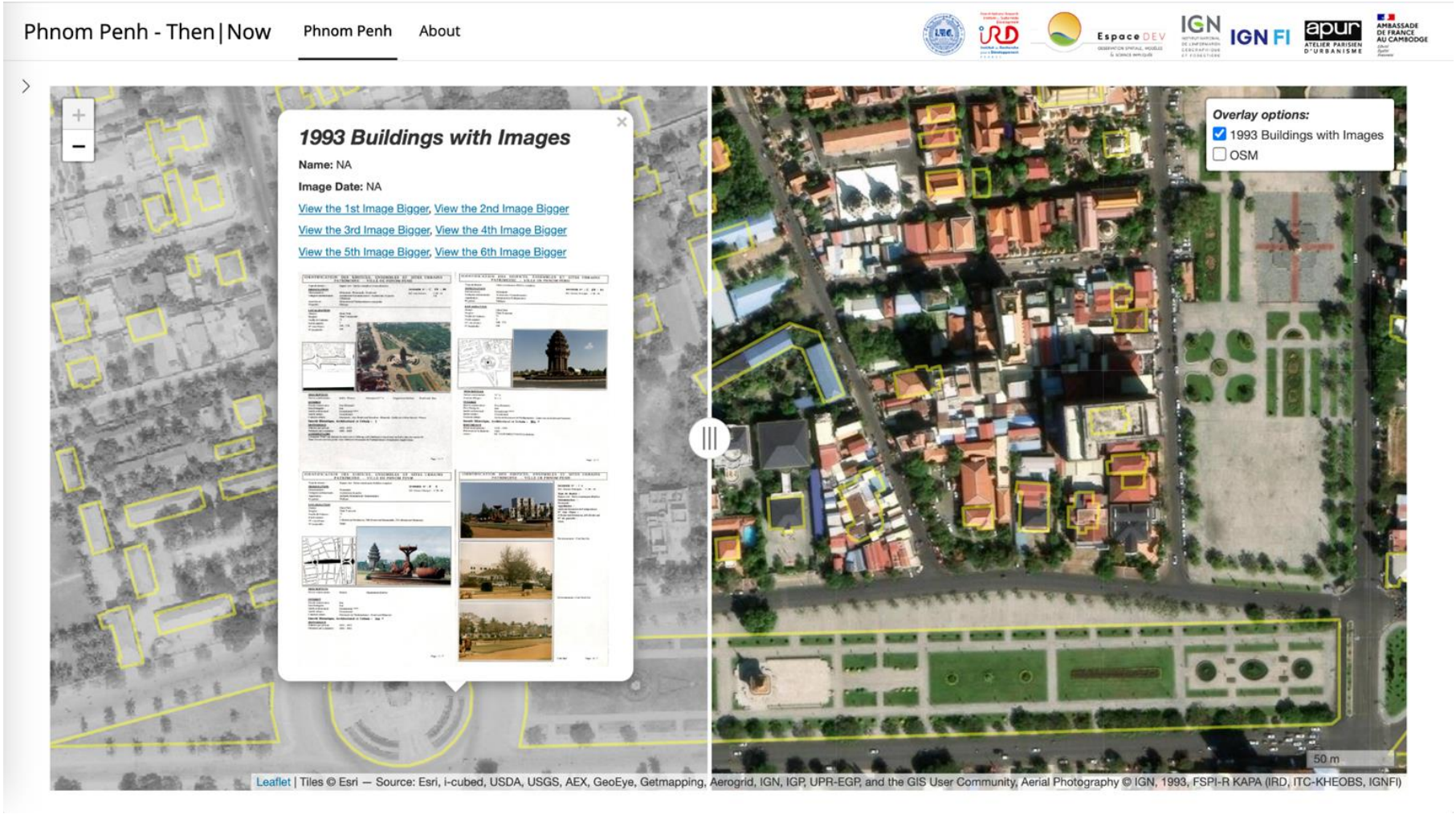


GeoCambodia

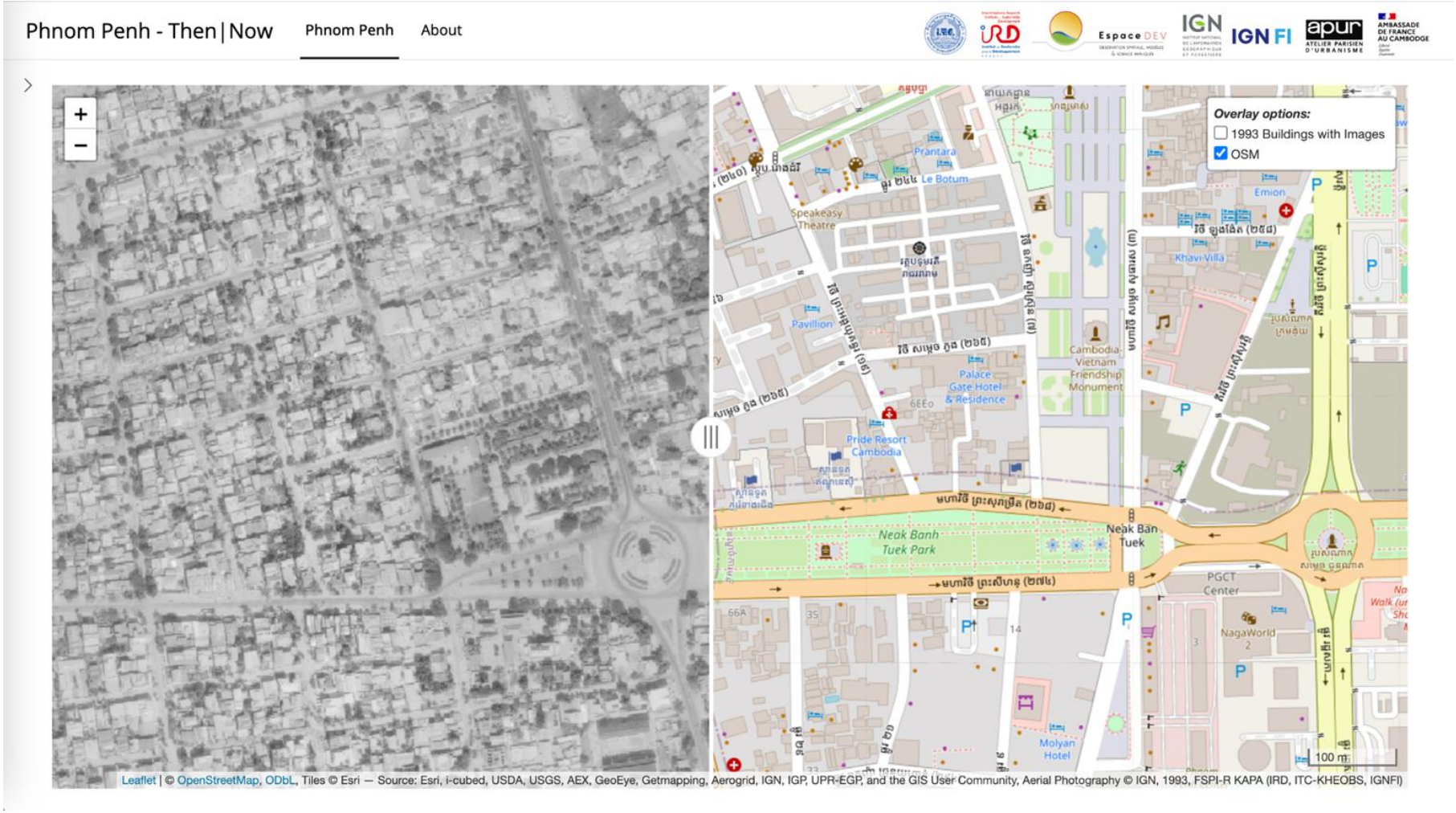
- The user friendly interface of GeoCambodia
- Choose from the various image options on the *left Image* and *Right Image*



- Toggle on the "*1993 Buildings with Images"* on the top right under the *Overlay Options,*
- The **Yellow Polygons** is clickable to show a preview popup with links to view the bigger images.



- Toggle on the "*OSM*" (OpenStreetMap) on the top right under the *Overlay Options* to view the labeled map.



Possible Extension for GeoCambodia:

- Extending the visualized area to the whole Cambodia
- Updating the popup with more information:
  - Linking to Wiki page of certain buildings,
  - More pictures from different sources,
  - etc.

https://cambodia.kheobs.org/

Acknowlegments

French Embassy in Cambodia:

- funding and supporting the KAPA project
- opportunity to advertise for the project with the exhibition on the wall of the Embassy in November 2023

Institut National de l'Information Géographique et Forestière

- opening and sharing this archive for Cambodia
- with the recognition of the huge work done during the shooting in the 50's and then for the archiving.

IGN FI: Gaëtan Chaudagne, Camille Pinet, Vincent Bousquet in building and supporting this project