

**UIA**  
ASSOCIATIONS  
ROUND TABLE

**UIA Associations Round Table  
Europe**

15 and 16 November 2018  
Lyon Convention Centre, Lyon, France



# Linking reconstruction and development through Local Building Cultures: the case of Haiti Repairh project

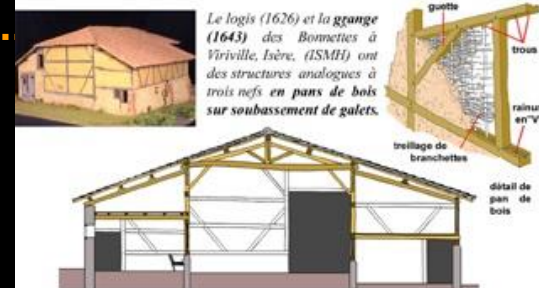
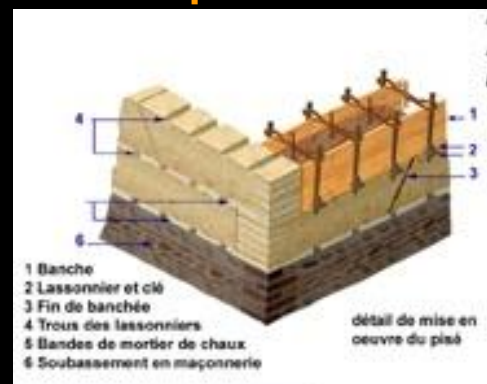
Thursday, November 15th, 2018

Philippe Garnier, Architect and researcher  
CRATERRE (NGO) / AE&CC research unit, ENSA Grenoble, UGA

# Born from the « Pisé » cultural heritage of the Dauphiné region



Castels, farms and barns





# CRATERRE - ENSAG

## Our status

CRAterre, an NGO

ENSAG, a university body with

- a research laboratory
- a post graduate program
- a UNESCO Chair

## Our mission

- Improve living conditions and fighting poverty
- Better use/manage natural resources
- Value cultural diversity and valorize heritage
- Contribute to sustainable development goals and adaptation to climate change

## 3 programmes/axes

- Cultural Heritage 
- Materials and Environment 
- Habitat



## International recognition

World leading organisation in the knowledge management and use of earth as building material...

# Mayotte

# Improving habitat conditions

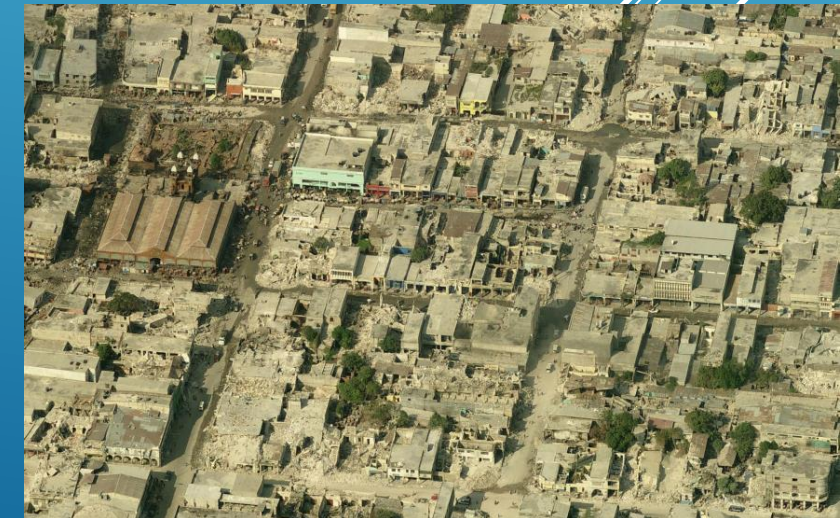
Habitat and Building Cultures



- ▶ Earthquake of Port-au-Prince, January 2010
- ▶ A major disaster in the capital city of a fragile country: huge human loss and impact on building, infrastructures, economy, etc.
- ▶ Work outside of the capital in affected areas



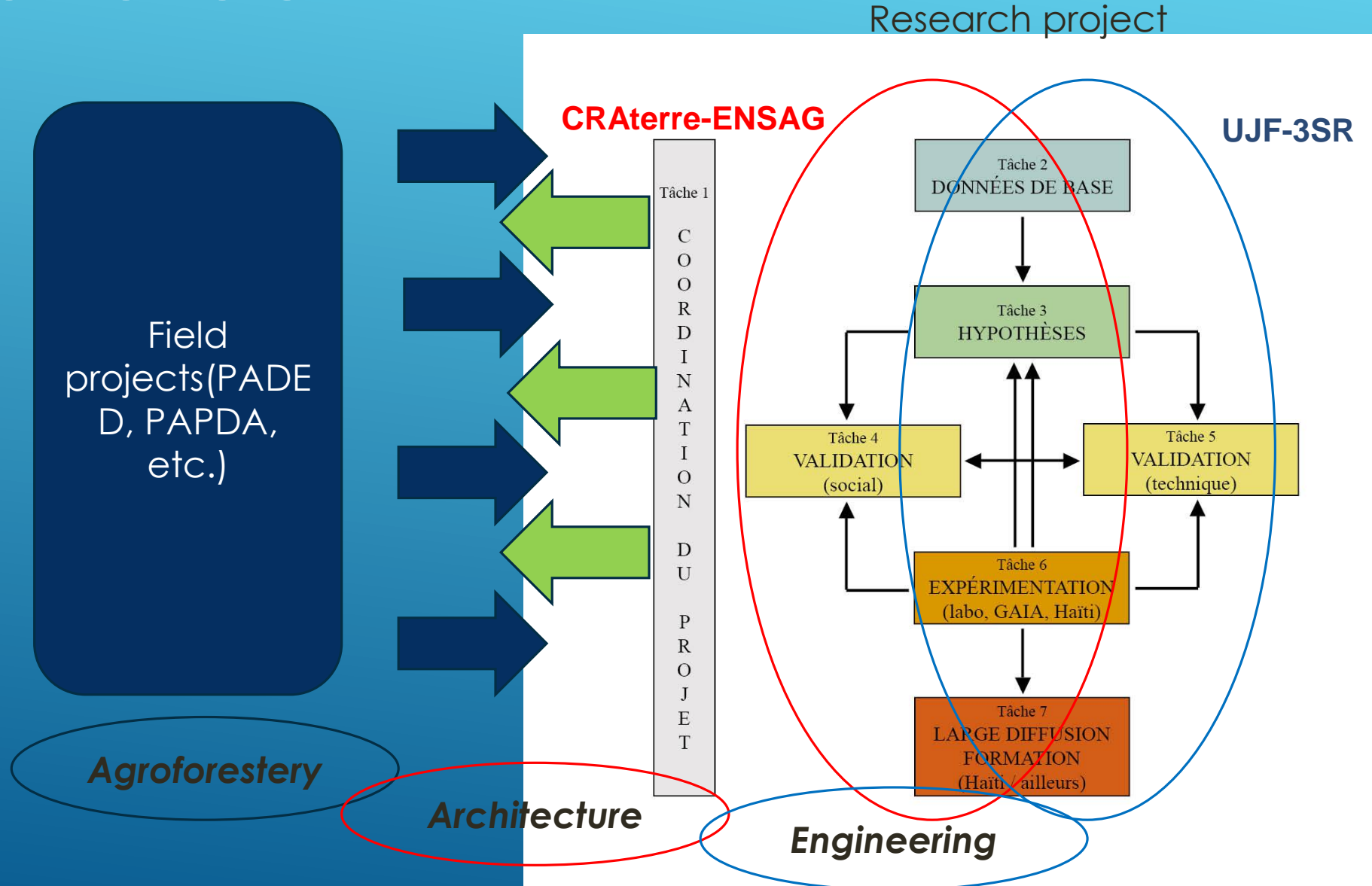
CONTEXT



- **Scientific support to reconstruction** of disaster resistant housing in Haiti through local building cultures approach, its characterisation and improvement
- **Support to local actors and stakeholders** in charge of (re)-construction in their technical and methodological choices
- **Articulation of scientific and non-academic knowledge** + scientific validation of technical options using local matériel with the view of **dissemination** and **expanding use**
- **Support to** the developpement of a **sustainable integrated reconstruction strategy** through the **reinforcement of local capacities**

## OBJECTIVES OF REPARH

# METHODOLOGY







## February 2010: Technical assessment

### Strengths:

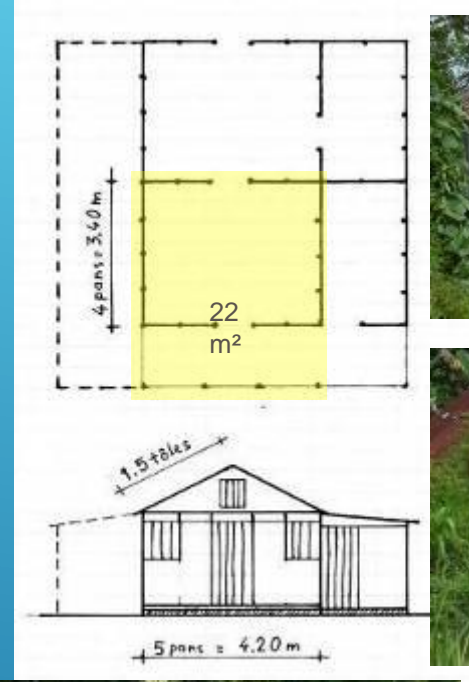
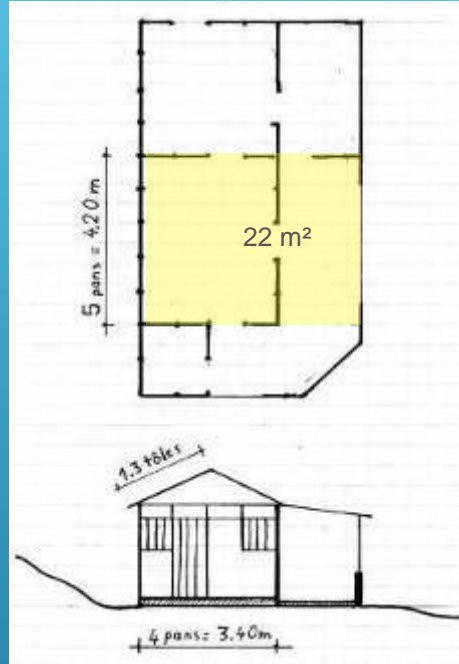
- timber-framed structure avoid the collapse of the roof over the head of the people living in
- Light-weight roofing
- The in-fill system do not collapse in one piece but in many small parts avoiding severe injured

### Weakenesses:

- Lack of proper bonding in the stone masonry wall
- Lack of timber ring-beam within the stone masonry to limit its collapse
- The moisture is rotting the base of the timber pole
- Windows openings in the corner of the construction



« Habitat » assessment: technical, architectural, social, economy + organisation modes, production and living + local knowledge, beliefs and values





Core house:

1 room + terrasse = 22 m<sup>2</sup>

**April 2010: architecturale and technical proposal**

Example of extension:

Addition of one  
bedroom + galery



# SOCIAL ORGANISATION

- Families and « kombite »:
  - Material supply and transport
  - Coffee and meal on site



- Support to boss on site





Prototype, demonstration and finetuning in September 2010, the start of first **operational phase** of 400 houses with Kombit !





## Test on shaking table: Haiti «300%»





ATPROCOM: Association  
des Techniciens  
Professionnels en  
Construction Moderne  
Supported by Entrepreneurs du  
Monde



Engineers and building  
technicians of PADED and  
EdM joined forces to  
establish a pole of expertise  
to train, build and transmit  
knowledge and know-how.







**Bureau Diocésain  
d'Éducation de Port au  
Prince**

1st school building

**Ecole de Grand Boulage**



**7,000 housing  
units,  
More than 300  
builders, and the  
process continue**





Thank you for your attention !