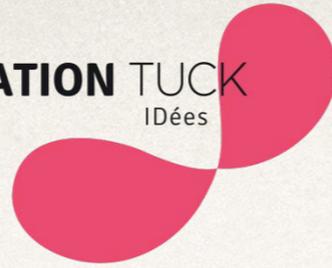


FONDATION TUCK  
IDées



Marc Darras  
Jacques Millery

# Cycle: Energie - Ressources - Climat

Session 4.

Ville, territoire et ressources : système robuste et résilient ou feu d'artifice ?

Année 2017 -2018

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28 mai 2018

# Les villes: des nœuds au centre des mondes

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- ❖ La population urbaine est dès à présent majoritaire.

	1950	1990	2010	2030	2050
Population urbaine	745	2281	3559	4984	6252
% Population totale	29	43	51	60	68

- ❖ La ville est tout d'abord un centre d'échange, de commerce, de sociabilité.
- ❖ La ville moderne n'est plus le lieu d'une foire matérielle, ni un centre de production physique.
- ❖ La ville moderne semble a priori ne produire que des normes, des données, de l'ordre.
- ❖ Une approche par le métabolisme urbain recherche donc au regard de ces fonctions « vitales » les flux essentiels pour réaliser ces fonctions.
- ❖ C'est aussi une approche entropique du flux énergétique.

# Les villes disparues

Au cours de l'histoire des villes disparaissent.

Les causes en sont des chutes « de civilisation »

Dont les origines sont Agricoles, Sanitaires, Guerrières...



GOBEKLI TEPE, Teomancimit, 2011



COPAN, Trayectorio.com

**Gobekli Tepe**, Turquie, -10000 : -8000. Au cœur de vallonnements pauvres. Ville?

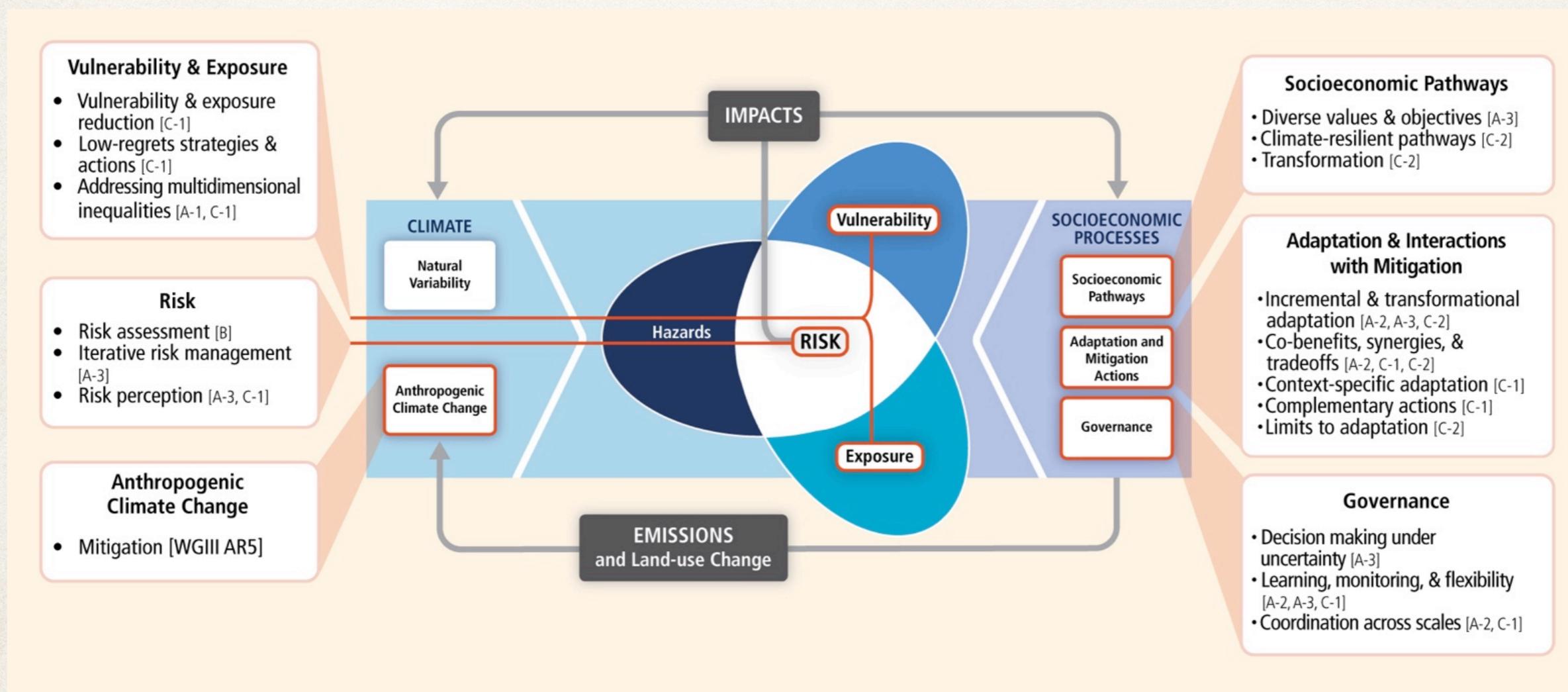
**Copán**, cité Maya, Honduras: (-300 / 820) la population de Copán s'était tellement accrue que les ressources naturelles s'étaient épuisées. De vastes superficies furent déboisées, entraînant une érosion massive qui affecta la production agricole et provoqua des inondations à la saison des pluies. La jungle reprit possession de la cité royale. Les vestiges de 3450 édifices ont été mis au jour.

La capitale aztèque, **Mexico-Tenochtitlan**, était, lorsque les Espagnols l'ont découverte, une des plus grandes villes du monde, avec une population estimée à environ 200 000 habitants. 95% de la population Aztèque disparaît au début du 17<sup>ème</sup> siècle.



MEXICO, Domaine public,  
<https://commons.wikimedia.org/w/index.php?curid=1977370>

# Risques et résiliences

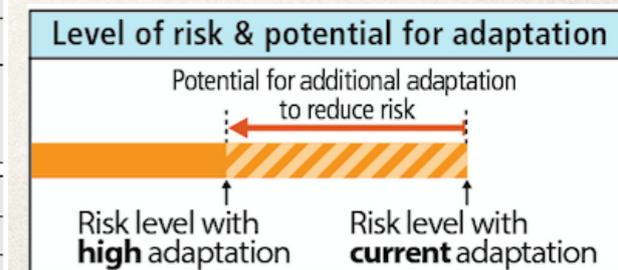


- ❖ La résilience se construit en
  - ❖ *connaissant les risques*
  - ❖ *Évaluant l'exposition*
  - ❖ *Identifiant la vulnérabilité*

IPCC, AR5 WG2 TS 12t, 2014

# Impacts sur la ville du Changement Climatique, AR5

Key risk	Adaptation issues & prospects	Climatic drivers	Timeframe	Risk & potential for adaptation		
				Very low	Medium	Very high
Modal urban <i>(medium confidence)</i> [8.2, 8.3, 8.4]	Climate change will have profound impacts on urban infrastructure systems and services, the built environment, and ecosystem services and hence on urban economies and populations. This could exacerbate existing social, economic, and environmental drivers of risk, especially for vulnerable groups who lack essential services. An appropriate urban governance frame and coordinated urban adaptation focused on the built environment, improved infrastructure, and services and risk reduction has significant potential for reducing key climate risks in the medium term and especially in the long term.		Present Near term (2030 – 2040) Long term 2°C (2080 – 2100) 4°C			
Waste water system <i>(high confidence)</i> [8.2, 8.3, 8.4]	Managing waste water flows improves water supply and ecosystem services. Reducing vulnerability of infrastructure may be easier in new areas, well-funded local bodies, or as part of scheduled interventions.		Present Near term (2030 – 2040) Long term 2°C (2080 – 2100) 4°C			
Water supply systems <i>(high confidence)</i> [8.2, 8.3]	Adaptation response requires changes to network infrastructure as well as demand side management, to ensure sufficient water supplies, increased capacities to manage reduced freshwater availability, flood risk reduction, and water quality.		Present Near term (2030 – 2040) Long term 2°C (2080 – 2100) 4°C			
Food systems and security <i>(high confidence)</i> [8.2, 8.3]	Urban food sources are dependent on local, regional, and often global 8.2, 8.3 supplies. Climatic drivers can exacerbate food insecurity, especially of the urban poor. Enhanced social safety nets can support adaptation measures. Urban and peri-urban agriculture, local markets, and green roofs hold good prospects as adaptive measures, but are under-utilised in rapidly growing cities.		Present Near term (2030 – 2040) Long term 2°C (2080 – 2100) 4°C			
Transportation systems <i>(medium confidence)</i> [8.2, 8.3]	A difficult sector to adapt due to large existing stock, especially in developed country cities, leading to potentially large secondary economic impacts with regional and potentially global consequences for trade and business. Emergency response requires well-functioning transport infrastructure.		Present Near term (2030 – 2040) Long term 2°C (2080 – 2100) 4°C			
Communication systems <i>(medium confidence)</i> [8.2, 8.3]	Resilient communication systems are a critical component of emergency response, and therefore adaptation. The rise of decentralized and networked mobile communications offers great potential for real-time and easily accessed information dissemination and communication systems. Information quality control is a key element in realizing the potential of communications systems for early warning and adaptation.		Present Near term (2030 – 2040) Long term 2°C (2080 – 2100) 4°C			



# Quelques éléments

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## ❖ New Urban Agenda, Habitat III, Quito 2016

### ❖ *Environmentally sustainable and resilient urban development*

- ❖ 63. We recognize that cities and human settlements face unprecedented threats from unsustainable consumption and production patterns, loss of biodiversity, pressure on ecosystems, pollution, natural and human-made disasters, and climate change and its related risks, undermining the efforts to end poverty in all its forms and dimensions and to achieve sustainable development. Given cities' demographic trends and their central role in the global economy, in the mitigation and adaptation efforts related to climate change, and in the use of resources and ecosystems, the way they are planned, financed, developed, built, governed and managed has a direct impact on sustainability and resilience well beyond urban boundaries.

## ❖ 2018 Nexus Conference, 16-18 Avril 2018

- ❖ *...integration involves 3 concepts; optimization, synergies and tradeoffs...*
- ❖ *...consideration of the Nexus of Resources (water, soil, wind, sun, minerals, waste etc.) is not useful unless it is linked to the Nexus of Services (energy, food, housing, supply etc.).*
- ❖ *the linking and integrating element for optimizing, synergizing and making tradeoffs, is infrastructure*

# Une démarche modeste du séminaire

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- ▶ *Partir des acquis et réflexions sur les politiques énergie - climat des précédents séminaires*
- ▶ *Prendre un peu de recul en partant de la gestion des émissions de GES : Session 1*
- ▶ *Introduire de nouveaux éléments de « nexus »: les ressources métalliques et leur bon usage; introduction aux technologies sobres: Session 2*
- ▶ *Elargir à d'autres ressources et approfondir des filières technologiques : Session 3*
- ▶ Ouvrir les voies pour une approche plus transverses: la Ville, son métabolisme...: Session 4

**Session 4. 28 Mai 2018**

**Ville, territoire et ressources : système robuste et résilient ou feu d'artifice ?**

**La ville, le territoire: quels flux matière pour quels usages.**

Yves Tresson

**Villes sobres**

Dominique Lorrain

**Quelle ville pour demain (annulé)**

Daniela Sanna,

# Déroulement

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- ❖ 2 présentations, suivis de questions d'éclaircissement .
- ❖ 1 heure de débat, autour de la place et de la pertinence des outils économiques
- ❖ En conclusion:

*Les points clefs de l'approche des filières-secteurs*

*Bon Séminaire!*