Politics of flood management in the Koshi plain (Nepal and North India): Modern economics versus extreme environmental factors.
- The disaster of 2008 was the trigger of my commitment for this region

- Floods: a big challenge for humans?

- The flood problem is magnified by the physical dimension of the sector

- The densification of population entails the necessary development of space (one of the most populous spaces in the world)

- As a result the facilities must be adapted to the sites (natural environment + human occupation)
1- The problematic management of flood in an exceptional environment

Koshi disaster, August, 2008, Sunsari District, Nepal
Situation de l’aire d’étude : la plaine d’inondation de la Koshi.
Sources : SRTM 90 meters, Hydro Watersheds (USGS, WWF).
An exceptional fall: the meeting between a vertical and horizontal environment
The physical environment

- Strong contrast between mountain and plain
- Sudden loss of velocity of the watercourse
- Huge volume of water and sediment

High variability of flows (maximum = low water x 93)
- Low flow rate = 280 m³ / s (minimum of low water)
- Maximum flow = 26,000 m³ / s (flood during high water)

- Mountains tectonically active: earthquakes are very common
Fig. 1.3: Changing courses of the Kosi

Source: Mishra
Classified colour-coded elevation image of the Kosi Basin. The image was generated from SRTM-DEM data. The image shows the fan area and the upstream area in Himalay. 1 = pre-flood course; 2 = post-flood course. Note the straight course of the Kosi River over the fan surface derived from SRTM data in ArcGIS.
17% of nepalese territory
1951 : 35 % of the total population (madeshi et tharu)
2011 : 54% of the total population (madeshi, tharu, et pahadi)
Hydraulic development in the Koshi plain

- Two-state development (India and Nepal): Dam, dikes and canals.
- Infrastructure mainly in Nepal but managed exclusively by India
- Lack of consultation of local populations
- Lack of surveillance and maintenance of infrastructure
- Impacts on the environment and populations
2. Current flood policies:

Theoretically Over-Protected Territories: Bihar

3.5 million displaced in 2008

Flood prone area:
1954 = 2.5 million hectares / 160 km of dike
2004 = 6.9 million hectares / 3465 km of dike
C. protected territories and rupture: infiltration floods
on the banks of two tributaries of Koshi: Tilathi and Narsingh
La rivière Khado à Tilathi : inondation de ressuyage et d’infiltration

- Dam effect: sandy sedimentation due to a border dike and upstream deforestation (Siwaliks)

- Destruction of agricultural soils by water stagnation and silting

- Height of 8 m height in 30 years (27 cm / year)
Local development: Tilauthi dike, monsoon 2013
Breach in the irrigation canal: Narsingh on the Sunsari River

Environmental impact of factories
• Embankment against floodwater drainage
• Facilities in the service of the powerful
3. Socio-environmental impacts of flood control policies

India's eastern state of Bihar, on Aug. 17, 2017
Geography of risks and powers

- The construction of protections values the land
- The protections are installed near the property owners
- The embankments have the effect of dispossessing the most vulnerable people
- The poorest settle in unprotected areas
- Protection policy exacerbates social inequalities. Hydraulic infrastructures contribute to social partition
the spatialization of risk

Low castes in the riverbed

Dalit on the embankment

Cooperative system: house shelter

High castes located on the high land
from defective workmanship to diversion

defective workmanship of the flood control structures: embezzlement of funds

- Corruption: from engineer to entrepreneur via politics (iron triangle)
- Clientelism: Dependence of the populations vis-à-vis their representatives
- Mafia: high clientelism to the dimension of law

"In Nepal taskar are stronger than sarkar" (in Nepal the mafia is stronger than the state) (S B, local journalist)
A power in "Russian dolls"

- India's domination of Nepal
- Domination of Kathmandu on the Madesh
- Maintaining feudalism
Conclusion

• A contrasting hydro-topographic setting
• A densification and valuation of space Failure of facilities, inappropriate and difficult to manage
• Domination and impoverishment of the modest classes When corruption replaces the law
• The continual degradation of the living environment heralds an uncertain future punctuated by more and more destructive disasters

In the future, research should be geared towards improving the regional situation Adaptations to hydrological dynamics

Restore the law and steer it towards a fairer social distribution
Remerciement à :

Laboratoire de recherche LAVUE de l’Université de Nanterre
Laboratoire du Centre des Études Himalayennes (CEH)
Tribhuvan University, Katmandu (Népal)

Merci de votre attention