



WISDOM PhD Scientific Seminar.
21-23 February 2012, Can Tho University

Wastewater Management in the Industrial Zones of the Mekong Delta: Findings along the Hau River

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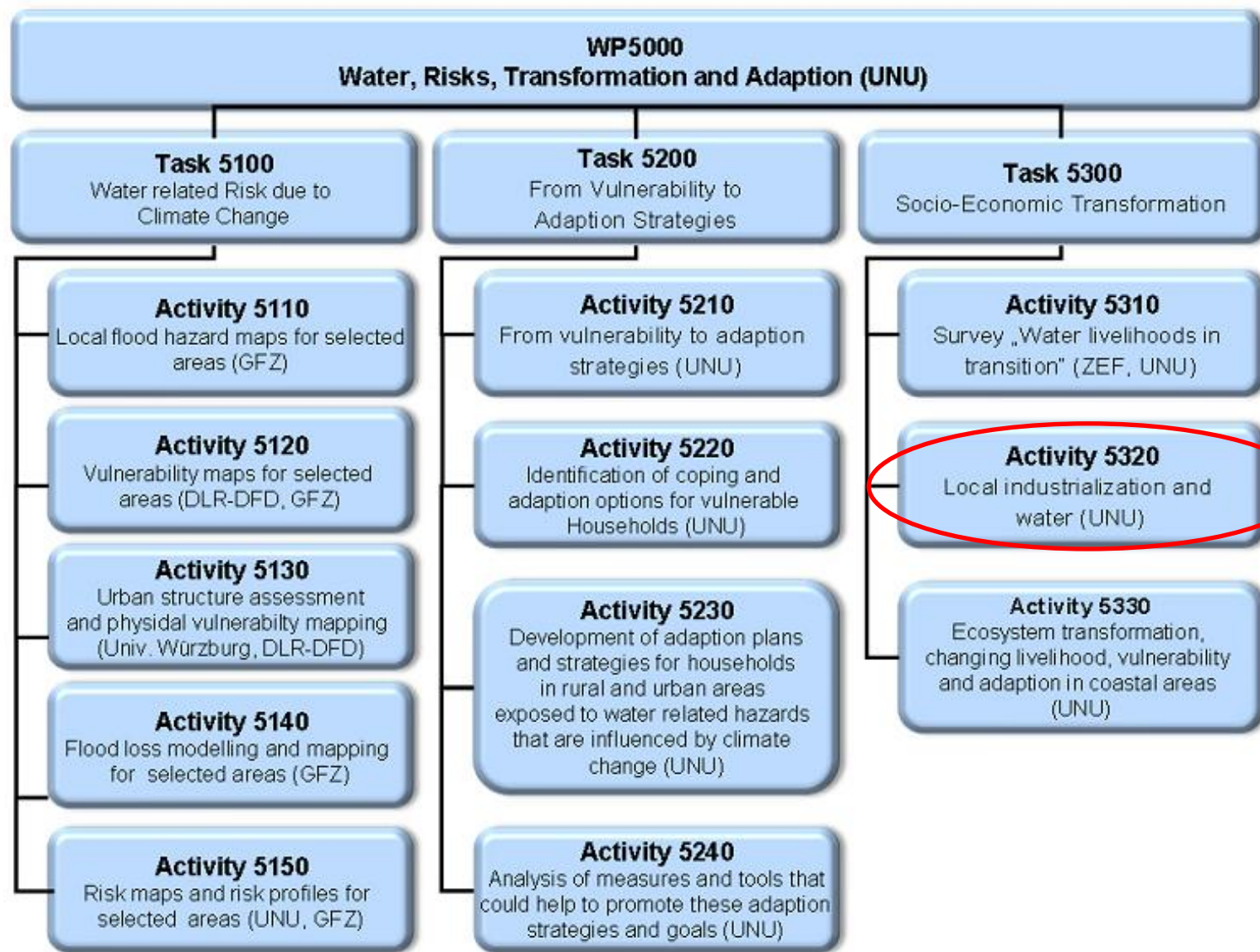
23 February 2012

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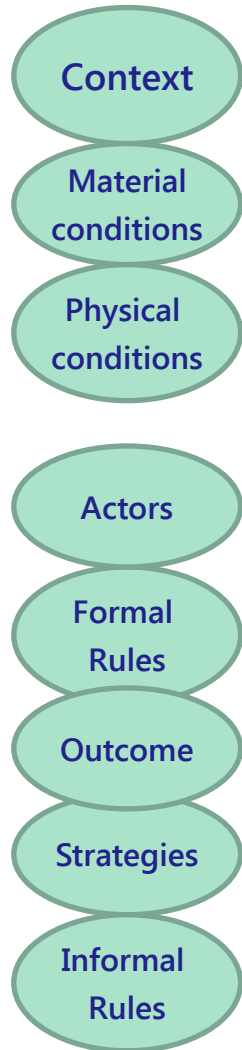
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Work Package 5320



How does the institutional environment in sites of concentrated industrial production activities in the Mekong Delta affect wastewater management?

- Research methodology
 - Use institutional analysis (Ostrom 98)
 - actors
 - rules (formal and informal), strategies,
 - community attributes
 - physical conditions
 - material conditions
 - transaction costs of coordination
 - outcome
- ..industrial zones, industrial parks, industrial clusters, industrial complexes, industrial handicraft villages, craft villages...



Research objectives

- (a) Overview of industrialisation in the Mekong Delta
- (b) Differences between types of sites of industrial production activities
- (c) Industrial production and effects on water resources
- (d) Wastewater management in industrial zones: current situation
- (e) Wastewater management: Why?

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Data collection method

- Semi-structured interviews with DPI and DoIT of all provinces; collect statistics. News.
- Semi-structured interviews at DoIT, DPI. Regulations on management and environmental protection in *khu công nghiệp, cụm công nghiệp* and *lang nghe*.
- Semi-structured interviews with DoNRE. News. International organisation reports. Environmental consultancies.
- Semi-structured interviews at IZMB, DoNRE, households nearby. News.
- Contextual data. Political economy: land use, investment waves.

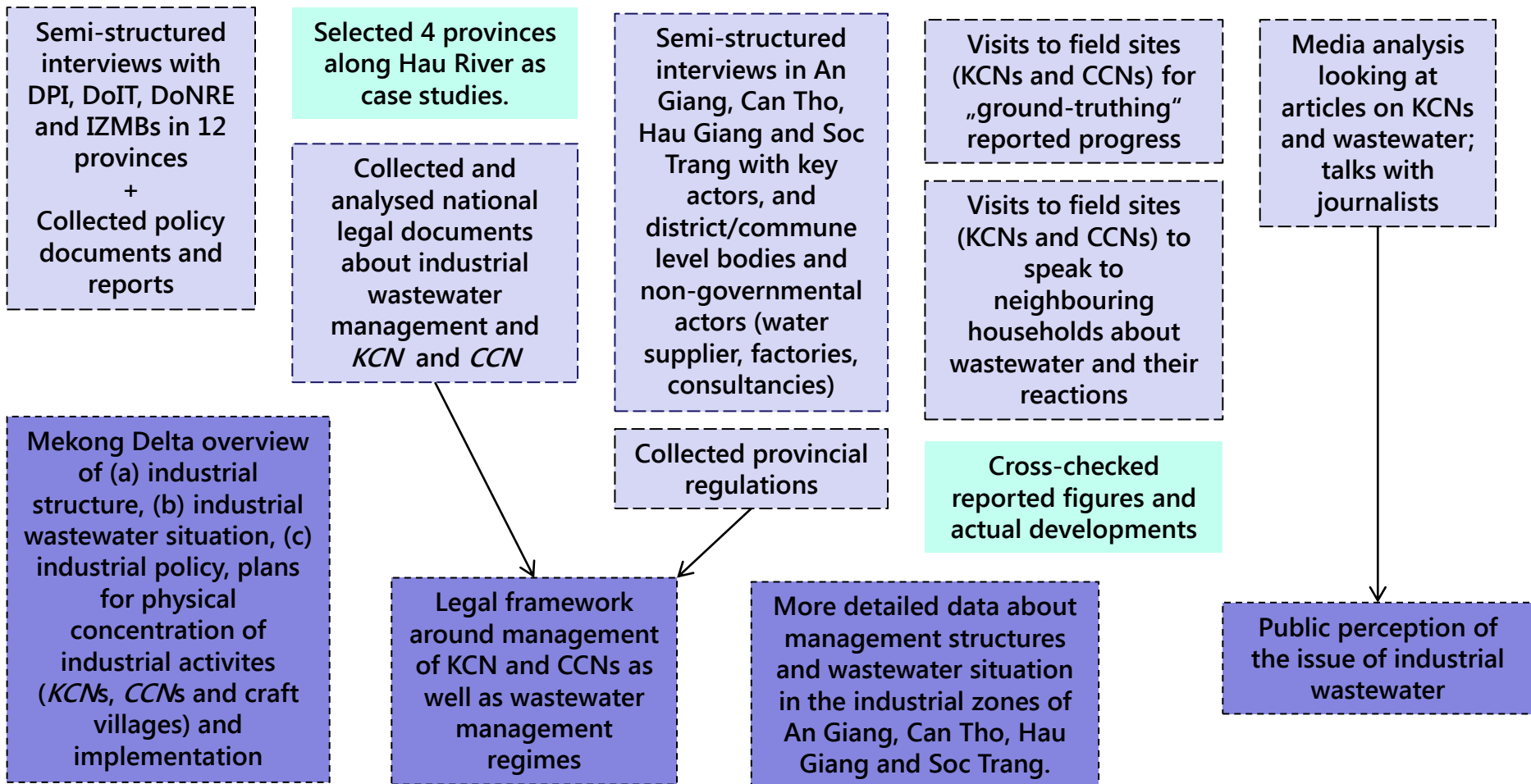
Field Research Activities

06/2011

09/2011

11/2011


01/2012



Findings on industrial “clusters”

- Types of physical concentration of industrial production in the Mekong Delta as reported:
 - industrial zones (*khu công nghiệp*),
 - industrial parks (*cum công nghiệp*),
 - craft villages (*lang nghề*)
 - export processing zones (*khu chế xuất*)
 - economic zones (*khu kinh tế*)
- Difference between industrial zones and industrial parks:
 - Size
 - Management body
 - Approving authority
 - Rationale/purpose: industrial zones seek to create preferential investment conditions. Industrial parks are for the relocation of polluting enterprises.
- But the legal distinction is not adhered to in reality.

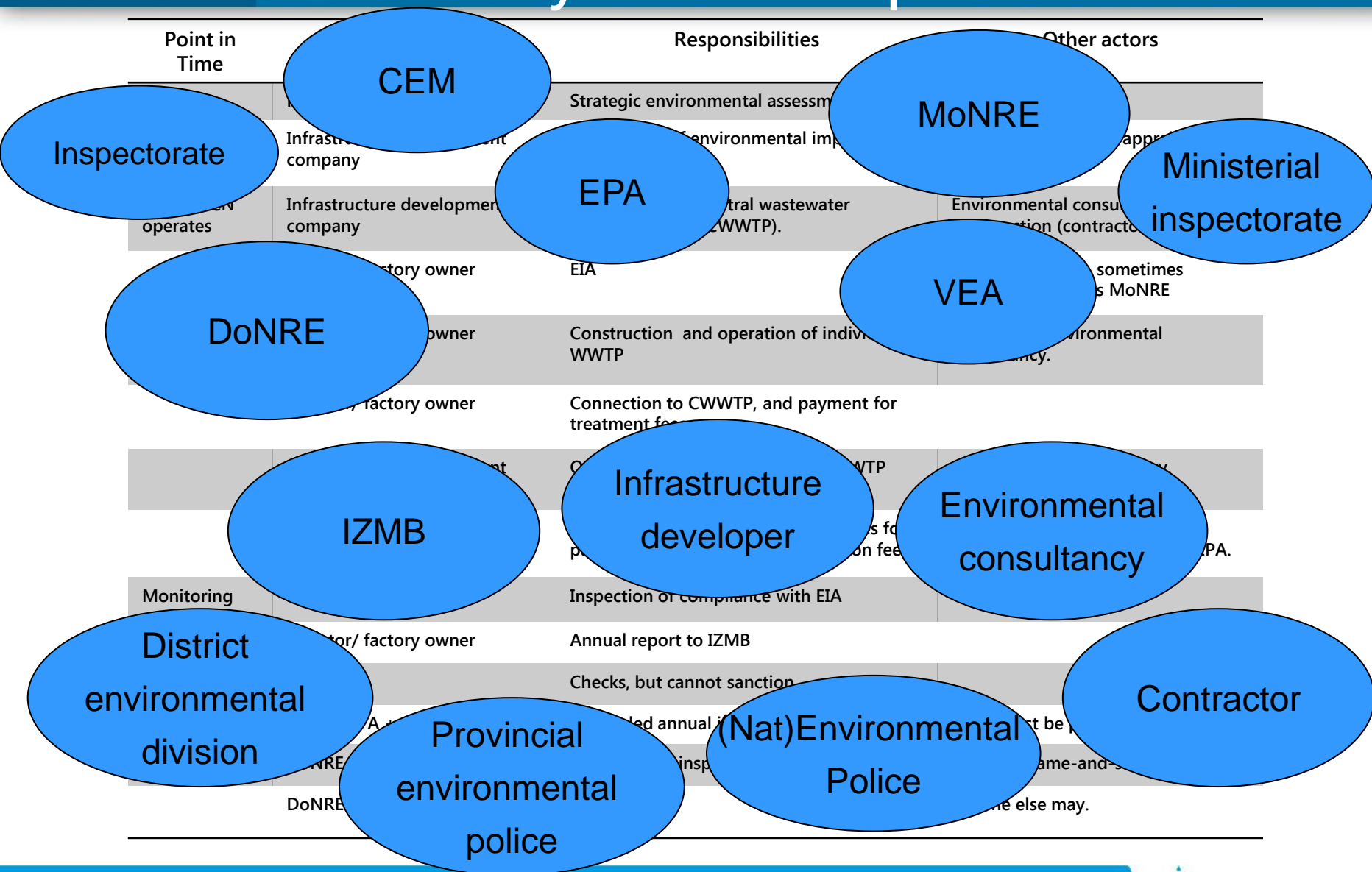
Findings: KCNs, CCNs

- KCNs a cornerstone of the national (and provincial) socio-economic development plans
 - Disparity between what is planned at national level and what is implemented at local level
 - Approval process : rubber-stamping. No SEAs made?
 - Common tendency of over-reporting actual developments and occupancy rates:
 - Reporting and planning documents confused
 - Goes to the validity and reliability of secondary data
 - Appetite for large-scale projects („achievement disease“)
-  Too many – semi-developed and half-empty – industrial zones that are not well-managed.
- Management regulation -- including that of environment + wastewater -- is trying to catch up with reality..
 - Many amendments and revisions.
 - First KCN: 1994. First mention of environmental protection in KCNs: 2005. First implementing circular: 2009

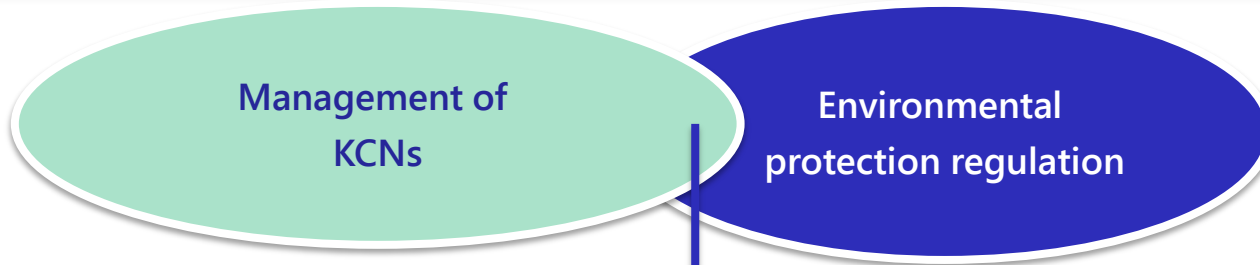
The Legal Requirements:

- Infrastructure developer must build a centralised wastewater treatment plant before the individual factories commence operations.
- Individual factories in the KCN must also have their own wastewater treatment plants.
- Factories send their pre-treated wastewater to the centralised wastewater treatment plant, and pay the infrastructure developer for treatment.
- DoNRE runs biannual inspections.
- IZMB may check enterprises.

Findings on WW management in KCNs (2): Many actors + responsibilities



Findings on WW management in KCNs (2): Overlap of regulatory regimes



	KCN	CCN
Body responsible...	IZMB	Dist. PC
Purpose	Investmt	Relocatn

“Regulation on environmental management in KCNs and CCNs” applies to both KCN and CCN despite differences in management and purpose

- DoNRE is only one who can sanction. But IZMB must be there before DoNRE can check.
- Wastewater management: coordination between IZMB, DoNRE, CEM, Inspe
- Environmental police is the only one free to check, but cannot sanction
- Sanctioning: what the system hinges on, but in a socio-economy like the Mekong Delta?

Findings on WW management in KCNs (3): Field observations

- **Starts with water supply and allocation and planning: missing**
 - Aquaculture is strength of Hau River provinces, firms use groundwater
 - Water allocation for industry in water resources planning: not present.
 - No intra-Delta upstream-downstream dynamics observable.
- **Drainage facilities**
 - Should have separate storm water and sewage sewers; infrastructure investors delay this.
- **Centralised WWTP: ultimately an investment!**
 - CWWTP should be operational before factories commence operations. In reality not done.
 - Wastewater management: an investment rather than enforcement issue.
 - High interest rates for bank loans, high risk of no returns (low investment rate in Mekong Delta).
 - Limited funds in the Vietnam environmental protection fund: high demand, low supply.
- **Monitoring and enforcement**
 - Nascent environmental awareness Concept of environmental crime still being developed.
 - Fines are too low to urge behavioral change. Cheaper for companies to pollute.
 - Community involvement limited because of laws on complaints.

Preliminary Conclusions : Wastewater management in KCNs (1)

- My implicit assumption:
 - Physical concentration of industrial production → increase chances of successful wastewater management.
 - Why? Costs-sharing, information-sharing

- What I found:
 - No physical concentration
 - Investment climate: poor infrastructure in the MD, small skilled labour pool
 - No economies of scale
 - Slow to attract investors + procedural 'obstacles': land clearance and compensation → unlikely to successfully share costs
 - Information dissemination: limited role of environmental division in IZMB, prevalence of "consultancies"
 - Delayed construction of infrastructure and CWWTP
 - No "community attributes"
 - Enterprises in a KCN have sectoral rather than place-based affiliations
 - Even outside the *KCN*: community of suffering split along administrative boundaries.

Summary of Findings

- **Industrialisation in Mekong Delta of a 'light' and low-tech nature**
- **Industrial policy: production to happen in industrial zones (KCN) and industrial parks (CCN) with different actors, management structures and regulations.**
 - But legal distinction between the two not adhered to in reality.
 - Socio-economic benefits of KCNs? Increased labour mobility is also livelihood instability. Land compensation and resettlement is a social issue!
- **Over-reporting of industrial activity occurring in KCN and CCN**
 - Probable that industrial wastewater from scattered small and medium-scale industries or stand-alone large industrial enterprises more significant
- **Industry does not contribute to water use competition / upstream-downstream conflict**
 - Mostly groundwater use now.
 - Upstream pollution not perceived as problem; organic thus masqueraded??
- **Legal framework fragments wastewater management → definitional issues, separation of monitoring from enforcement.**
- **Socio-economic reality in Delta → effective wastewater management in the industrial zones difficult.**
 - Industrial zones slow to attract investors → prevents scales of economy for a centralised wastewater treatment plant. Provinces compete for investors → potential disincentive to enforce environmental protection obligations.
- **Economic development taking precedence over environment**
 - For now, sustainable development remains talk. But action being taken?

My thanks go to CTU, and all the local state agencies and persons I interviewed.

Questions and comments?

Thank you.