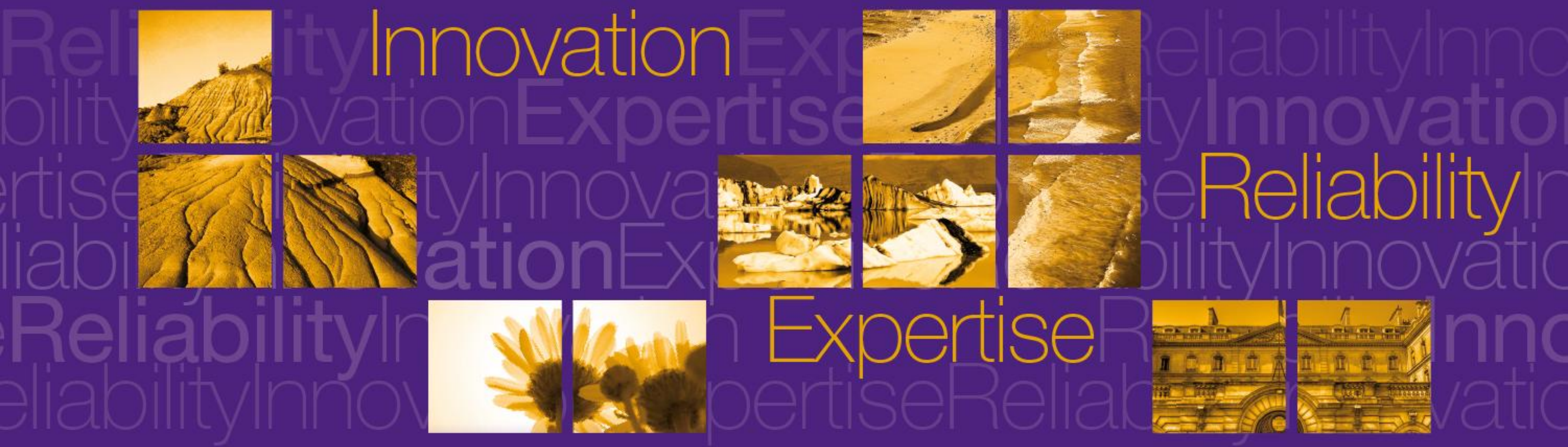

ECCA conference

What financing tools for adapting our infrastructures to climate change?

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Hamburg,
19th March 2013

Outline

1. Aim of the presentation and context

2. The need for new/adapted financial mechanisms

3. Preliminary findings from some case studies

1. Aim of the presentation

- Adaptation is complex, requires impact assessment, the list of possible adaptation measures and the choice of criteria …. : essential but not the topic here

- Aim of this presentation
  - Is not :
    - to promote hard adaptation and costly solutions whatever the case
    - to present decision-making tools to decide the right solution to implement
  - Is :
    - once the solution is decided (so in a few cases, mainly infrastructure): to present an overview of existing or new possible financial tools for developed countries, discussing on the pros/cons and

      to give existing examples in cities if any, as adaptation is a local issue and cities are vulnerable and have to cope with that
    - Because classic subsidies, low-interest loans are limited
    - NB : work in progress

1. Context

- Context : limits of the classical funding, need to involve the private sector and end-users;
- Literature suggests possible mechanisms in developed countries:

  1. To raise additional initial investment (PPP, project bonds, third-party investment, etc.)
  2. To collect extra revenues over the project lifetime (local tax, fees, etc.)
  3. To use financial risk hedging tools (insurance, cat bonds, etc.)

Outline

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2. The need for new/adapted financial mechanisms

   - To raise additional initial investment

   - To collect extra revenues over the project lifetime

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3. Preliminary findings from some case studies

2.1 To raise initial funding (1/2)

	Pros	Cons/limits/ difficulties	Comments/ application for adaptation
Public-Private Partnership	- Attract private investment and not penalise public budget -Benefits derived from the private technical and economical expertise	-Only for big projects -Hard to set up -Critized as the total cost over the lifetime for the public entity can be high	- Adaptation can be seen as a new risk that needs to be integrated in the mechanism - PPP should fully describe the risk distribution between actors and can be flexible - PPP can favour an “acceptable level of service”
Project bonds/green project bonds	- Access to capital market, and to long-term investors or Socially Responsible Investors	-Hard to set up -Depends on the quality of the issuer, and its extra-financial ranking	Possible « green project bonds » for adaptation projects (criteria or standards have to be defined)

2.1 To raise initial funding (2/2)

	Pros	Cons/limits/ difficulties	Comments/ application for adaptation
Third-party financing	Ex-ante funding , that gets revenue thanks to ex-post cost savings, and does not penalise the public budget	-Very complex -Risk distribution between actors to be defined	New mechanism, not already used for adaptation, could be used for energy savings for instance

2.2 To collect revenue over time

	Pros	Cons/limits/ difficulties	Comments/application for adaptation
tax/fees	- Directly from end-users (value capture tools) - Can create incentive	-Level of the tax, enough to finance adaptation measure -Social acceptability	Rise in the fees/taxes to cover adaptation extracost
permit markets	-Guarantee of the total amount -Emergence of a price	-Hard to set up and manage	Eg : for water in Australia, the global permit amount can be reduced
Link with CO2 allowance	-Depends on the mechanism : to use the auction revenues of the EU ETS to reward adaption measures, or to give extra carbon credits to projects that offset carbon and are adapted to climate change impacts (but hard to implement)		

2.2 To use insurance and capital markets with securitization

	Pro	Con/limits/ difficulties	Comments/application for adaptation
Insurance	-Financial cover -Private involvment -Cover risk	-Historical data are insufficient -Moral hazard -Can be very expensive for insurers/reinsurers	Cover climate risks and can make good incentives if the right level of premium (risk-based pricing)
Cat bonds	-transfer of the risk from insurers to investors	-Hard to set up -Level of the risk premium	Cover climate risk With lower interest if preventive actions have been implemented

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   - To raise initial investment
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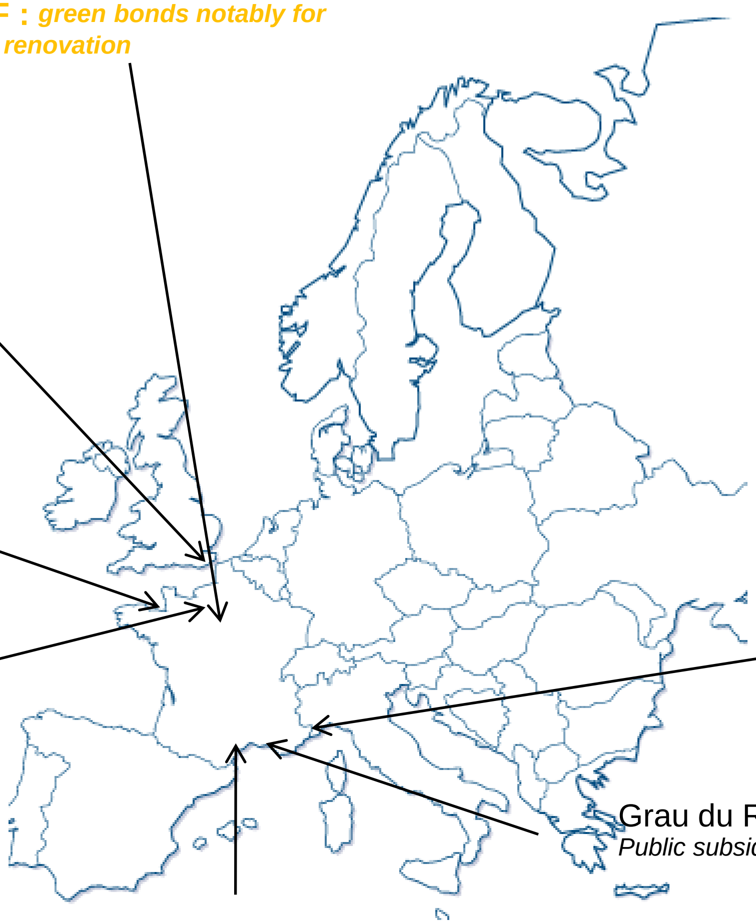
Several French case studies



RC IdF : ***green bonds notably for thermal renovation***

Dunkerque drainage system:
public subsidies + taxes from owners

St Malo dykes
EU fund + Barnier fund collected by insurers

Rouen : thermoregulation by river
EU fund + public subsidies + forecast sales to developers with a premium
Developers could think about third-party investment

Nice : sport eco stadium with natural air-cooling
PPP

Grau du Roi Hospital relocation
Public subsidies

Sete lido : coastal road relocation
EU fund + public subsidies

3. Preliminary findings from case studies

Project element	Preliminary findings
Project type and Adaptation consideration	- Different types : infrastructure dedicated to CC, or infrastructure retrofit - Adaptation is mainstreamed
Role of actors	-Often managed by the public sector -Private sector involvement
Use of economic and financial tools	-CBA is not usually used -Funding is classical but with some innovations (green bonds, PPP, local taxes)

Thank you for your attention.

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