Mapping the range of plausible future coastal sea level trajectories and assimilating current trends: A best practice in support of coastal adaptation policies

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The potential threats:
- UN Development Program, 2008:
  332 million people in low-laying coastal zone
- Single disaster estimates: > $ 100 billion;
- World Bank, 2008: Disasters in two
  megacities in Asia could offset 20 years of
  global economic growth;

The challenges:
- Coastal defence: very high costs
- adaptation: relocation of settlements;
  Infrastructure (air ports, highways,pipelines, ...)
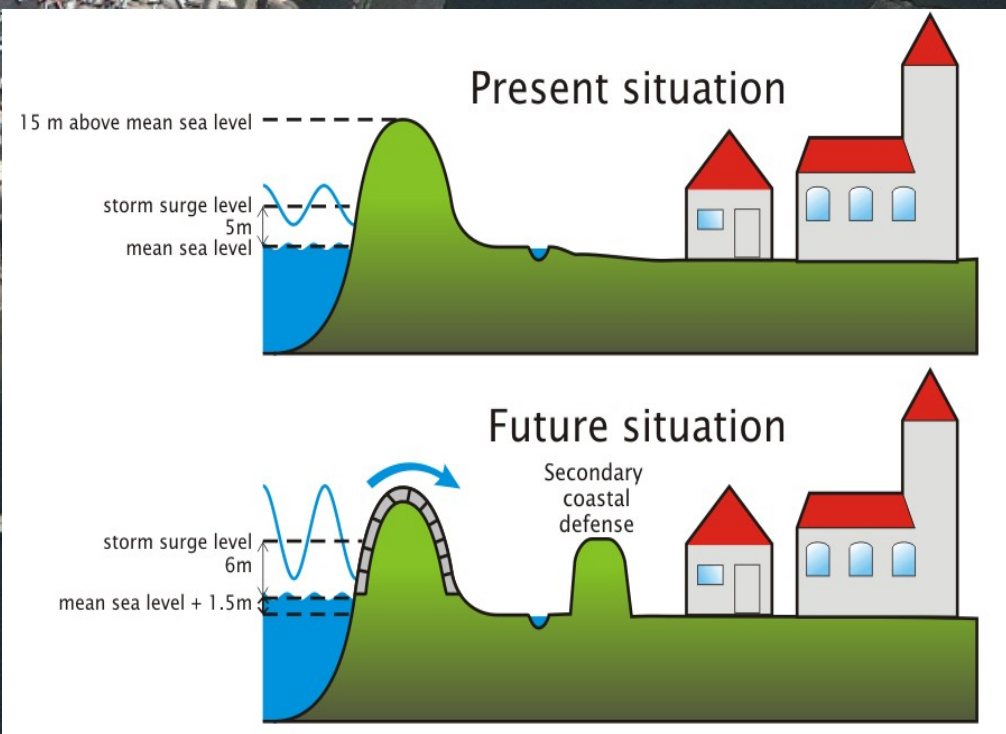
What is requested by policy makers?
- Local sea level (LSL) rise projections for the
  next 100 to 200 years, particularly high end;
- reliable uncertainties;
- full range of plausible LSL trajectories with
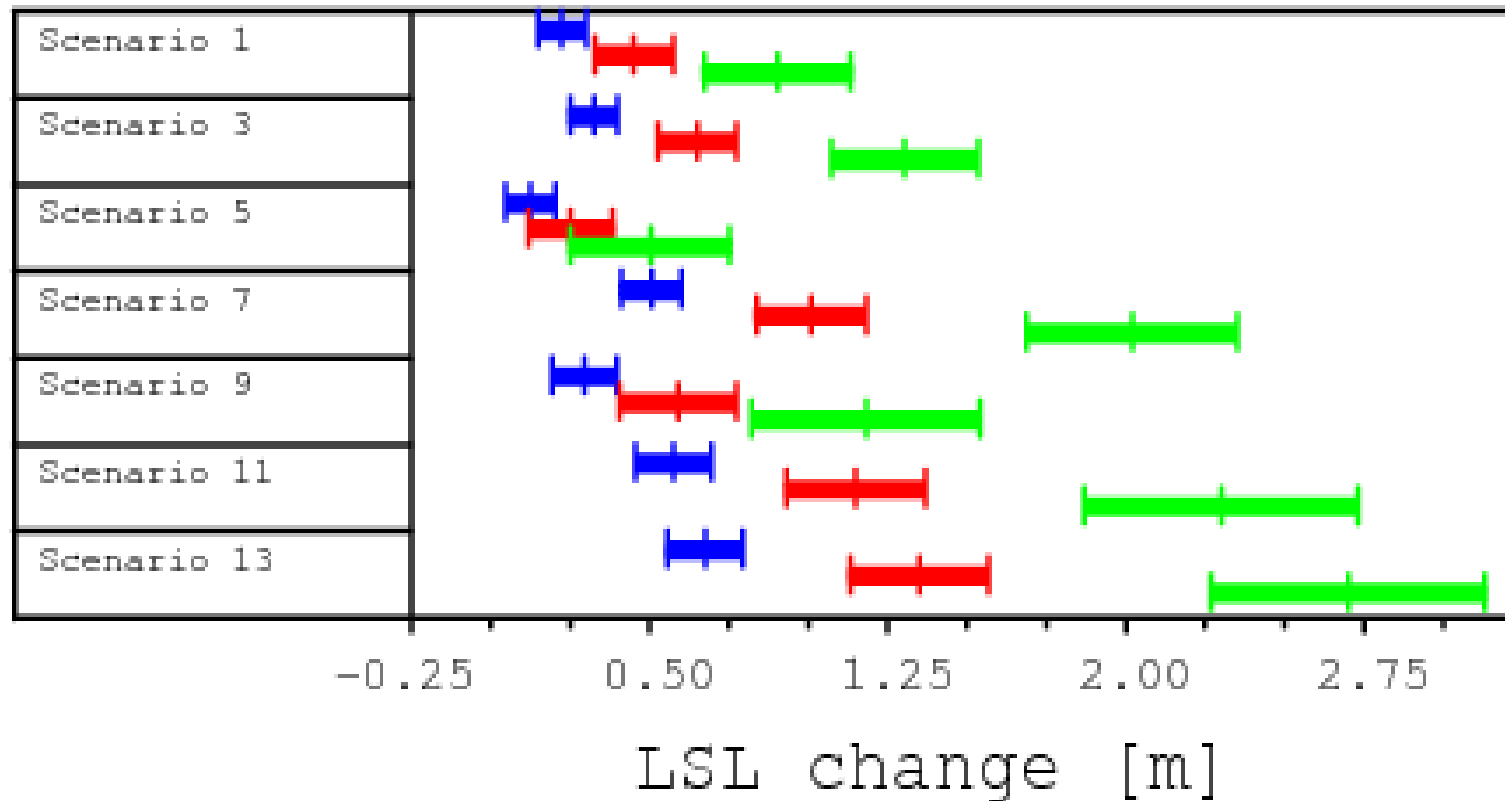 probability density function (PDF);

Present situation
- 15 m above mean sea level
- storm surge level 5m
- mean sea level

Future situation
Secondary coastal defense
- storm surge level 6m
- mean sea level + 1.5m

Where do we stand?
- Projections give a wide range of LSL trajectories.
- no reliable PDFs.

Recent examples: U.K., Venice, Dutch Coast, Southern Coasts of U.S.

How do we map the plausible range of LSL trajectories?

Decision Support for Climate Change Impact

Problem: Policy making, mitigation, and adaptation in the face of large uncertainties that can not be reduced:

- understanding the full range of plausible futures

- frequent reviews of policies on the basis of well-observed emerging characteristics of the system

- best practice for mapping the range of plausible futures and review the development of the system

Development of a "best practice":
Focus on a service that provides advanced outcomes and impacts for users;
Links to "issues of the day";
Identify ways to nurture and accelerate achievements;
Demonstrates the coordination and facilitation mechanisms of GEO;
Emphasize the importance of Earth observations;
Illustrates the relevance of CoPs.