European Commission

Natural Hazards

RISC-KIT

At a glance

Title:

Resilience-Increasing Strategies for Coasts - toolKIT

Instrument:

FP7 – Collaborative Project

Total Cost:

7,654,453 €

EC Contribution:

5,999,692 €

Duration:

42 months

Start Date:

01 November 2013

Consortium:

18 partners from 10 countries and 2 international organisations

Project Coordinator:

Dr. Ap van Dongeren, Stichting Deltares, The Netherlands

Project Web Site:

www.risckit.eu

Key Words:

Hazards, resilience, environment, storm surge, flash-flooding, coastal risk assessment, early-warning system, decision-support system, disaster risk-reduction, stakeholder participation, prevention, mitigation and preparedness measures, building trust and societal acceptance.

The challenge

Recent and historic low-frequency, high-impact events (Xynthia, Ligurian Flash Floods, 1953 North Sea storm surge) have demonstrated the flood risks faced by exposed coastal areas in Europe. Future risks may be expected to increase due to a changing climate and increased population density and economic value in coastal areas.

This projected increase in risk along coasts requires a re-evaluation of coastal disaster risk reduction strategies and a new mix of prevention, mitigation and preparedness measures. Additionally, strategies to help affected communities recover and restore their functions after a flooding event will help increase resilience.

Project Objectives

The main objective of the RISC-KIT-project is to develop methods, tools and management approaches to reduce risk and increase resilience to low-frequency, high-impact hydro-meteorological events in the coastal zone. Specific objectives are:

1 Review and analysis of current-practice coastal risk management plans and lessons-learned of historical large-scale events (WP1).
2 Collection of local socio-economic and physical data at 11 case study sites through end-user and stakeholder consultation (WP1).
3 Development of a regional-scale coastal risk assessment framework (CRAF) to assess present and future risk due to multi-hazards (WP2).
4 Development of an impact-oriented Early Warning and Decision Support System (EWS/DSS) for hot spot areas, consisting of a hazard forcast system using coupled hydro-meteo and morphological models, and a Bayesian Decision Support System, which integrates hazards and socio-economic, cultural and environmental consequences (WP3)

Research and Innovation

5 Development of potential DRR measures and the design of ecosystem-based and cost-effective DRR-plans in close cooperation with end-users at the case study sites (WP4).
6 Application of CRAF and EWS/DSS tools at the case study sites to test the DRR plans for a combination of climate-related hazard and economic scenarios (WP5).
7 Development of a web-based management guide for developing integrated DRR plans along Europe's coasts and beyond and provide a synthesis of lessons learned in the form of policy guidance and recommendations at the national and EU level (WP6).

Methodology

The logical sequence of the project will follow the Frame of Reference approach. This prescribes a four step process to address the objectives in a structured way:

1. The identification of the actual and predicted state of risk at each case study site using the tools developed in WP2 and WP3.
2. The definition of the desired state by end-users and stakeholders (WP1);
3. The development of potential DRR solutions to reach the desired state (WP4);
4. The evaluation of the application of the proposed solutions (WP5).

Expected Results

RISC-KIT will deliver ready-to-use methods, tools and management approaches to reduce risk and increase resilience to low-frequency, high-impact hydro-meteorological events. The open-source and free-ware RISC-KIT tool kit will consist of:

1. A Coastal Risk Assessment Framework (CRAF) which can quickly assess present and future hot spot areas of coastal risk at a region scale due to multi-hazards.
2. A quantitative, high-resolution EWS/DSS for use on these hot spots.
3. A web-based management guide offering innovative, cost-effective, ecosystem-based DRR measures.
4. A Coastal Risk Database of present and historic socio-economic and physical data.

These tools will enable Europe's coastal managers, decision-makers and stakeholders to:

1. Identify hot spot areas.
2. Produce timely forecasts and early warnings.
3. Evaluate the effect of climate-related, socio-economic and cultural changes on coastal risk.
4. Choose the best prevention, mitigation and preparedness measures for their coast.

Project Partners	
STICHTING DELTARES	NL
ECOLOGIC INSTITUT gemeinnützige GmbH	DE
CONSORZIO FERRARA RICERCHE	IT
UNIVERSIDADE DO ALGARVE	PT
INTERNATIONAL MARINE AND DREDGING CONSULTANTS	BE
INSTITUTE OF OCEANOLOGY - BULGARIAN ACADEMY OF SCIENCES	BG
CENTRE NATIONAL DE LA RECHERCHE SCIENTIFIQUE	FR
TECHNISCHE UNIVERSITEIT DELFT	NL
ORGANISATION MÉTÉOROLOGIQUE MONDIALE	International
UNIVERSITAT POLITÈCNICA DE CATALUNYA	ES
Centro Internazionale in Monitoraggio Ambientale - Fondazione CIMA	IT
BUNDESANSTALT FÜR WASSERBAU	DE
FUNDAÇÃO EUROCEAN	PT
STIFTELSEN THE STOCKHOLM ENVIRONMENT INSTITUTE	SE
MIDDLESEX UNIVERSITY HIGHER EDUCATION CORPORATION	GB
UNIVERSITÉ DE CAEN BASSE-NORMANDIE	FR
THE CHANCELLOR, MASTERS AND SCHOLARS OF THE UNIVERSITY OF CAMBRIDGE	GB
UNITED NATIONS EDUCATIONAL, SCIENTIFIC AND CULTURAL ORGANIZATION - UNESCO	International