# DEWS:
## Distant Early Warning System

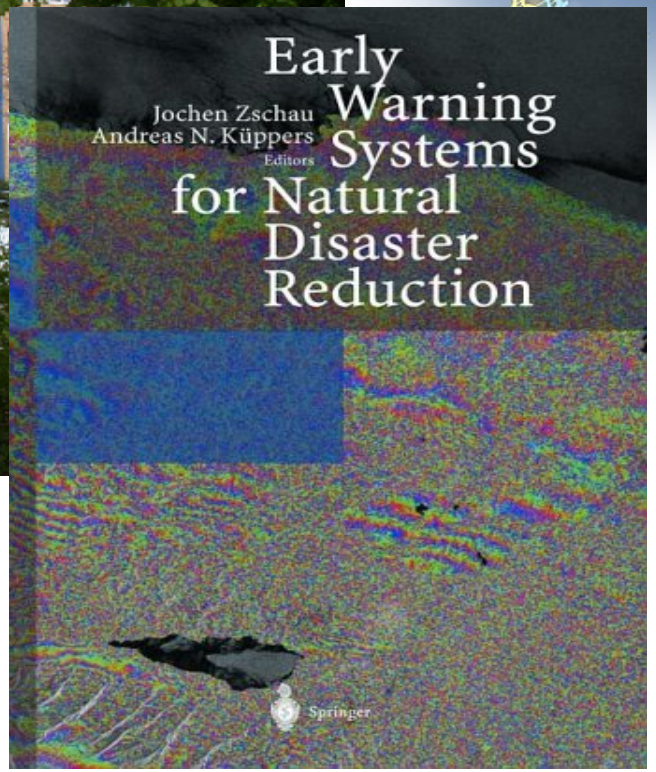
# The Training and Education Strategy

Andreas N. Küppers
GFZ

DEWS Midterm Conference
Potsdam 07 July 2009

## Potsdam & Early Warning

**August 1998**



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# DEWS Partner Distribution

Atos Origin SA., Spain Coordinator

GFZ Potsdam, Germany

Citizen Alert Services BV, Netherlands

Helsinki University of Technology Communications Laboratory, Finland

Swedish Civil Contingencies Agency, Sweden

Engineering Ingegneria Informatica S.p.A., Italy

DATAMAT S.p.A., Italy

University of Bologna, Italy

Geological and Nuclear Sciences, New Zealand

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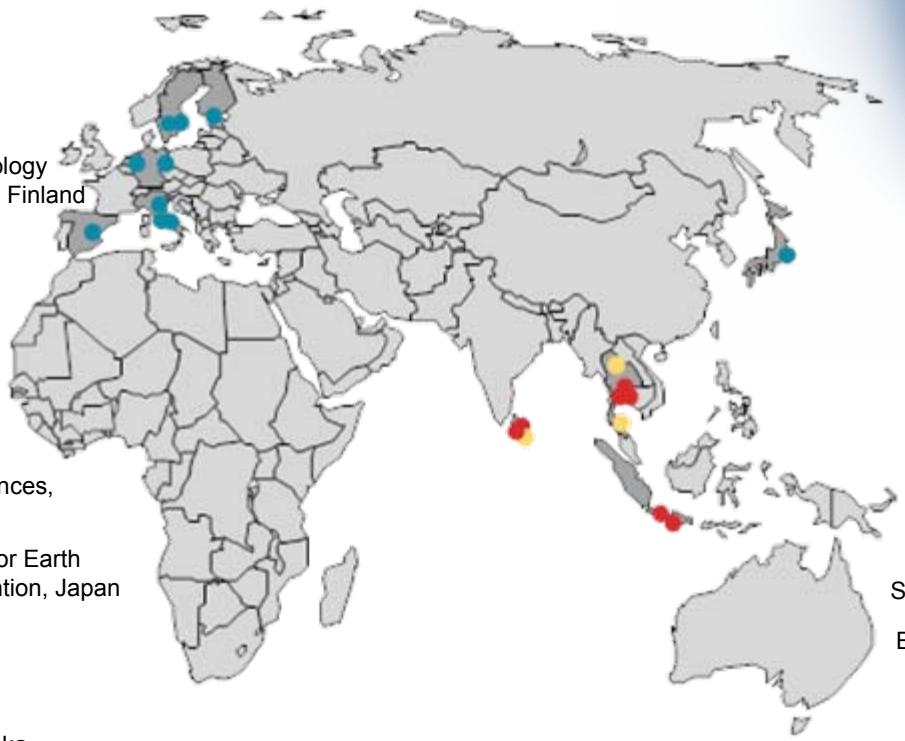
Moratuwa University, Dept. of Engineering, Sri Lanka

Prince of Songkla University, Thailand

Chiang Mai University, Thailand



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Thai Meteorological Dept., Seismological Bureau, Thailand

Badan Meteorologi, Klimatologi dan Geofisika, Indonesia

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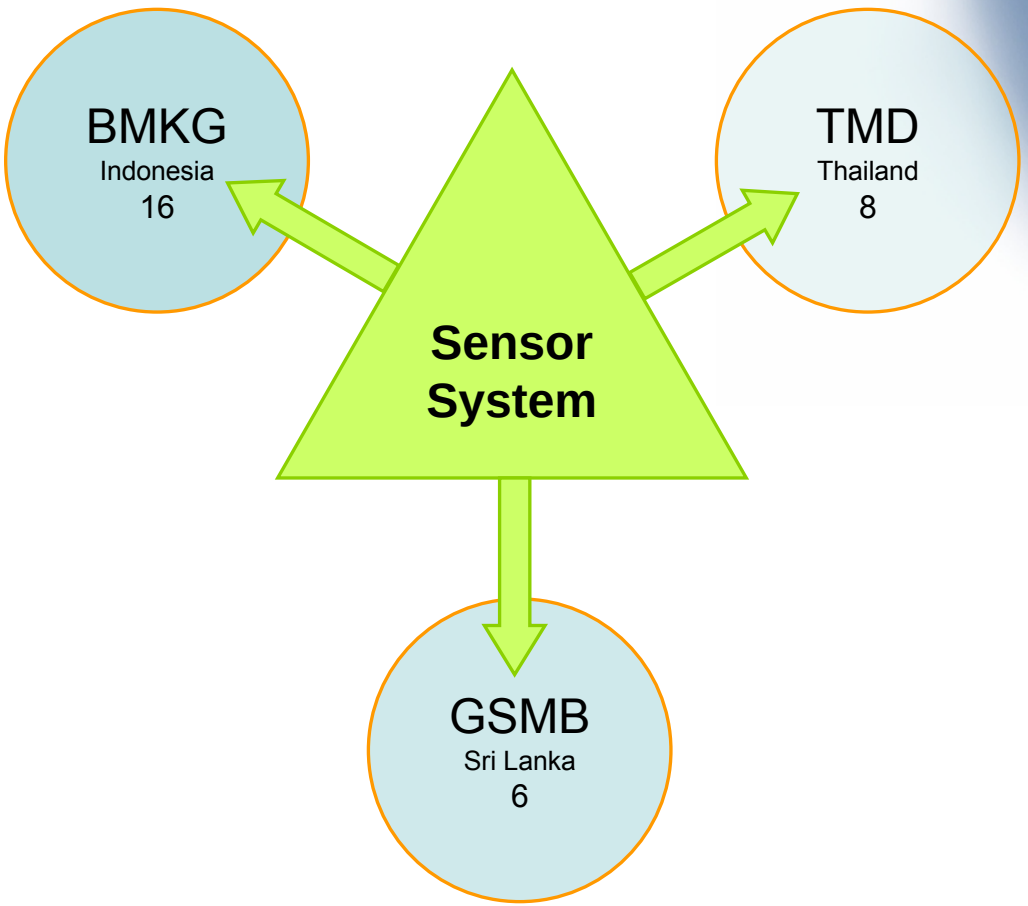
National Disaster Warning Center, International Affairs, Thailand

Department of Disaster Prevention and Mitigation Thailand

Project-Partner · INCO-Partner (Authority) · INCO-Partner (University)



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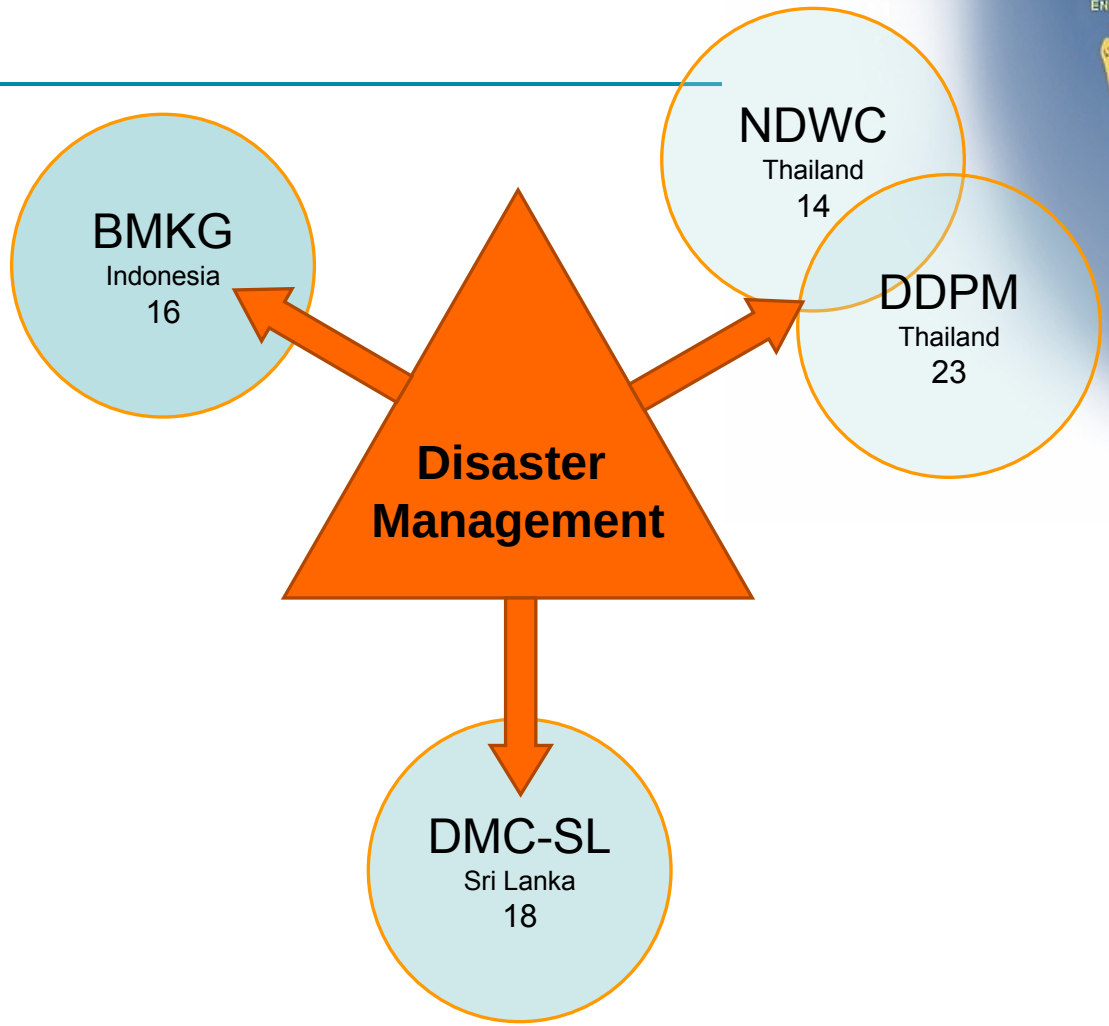


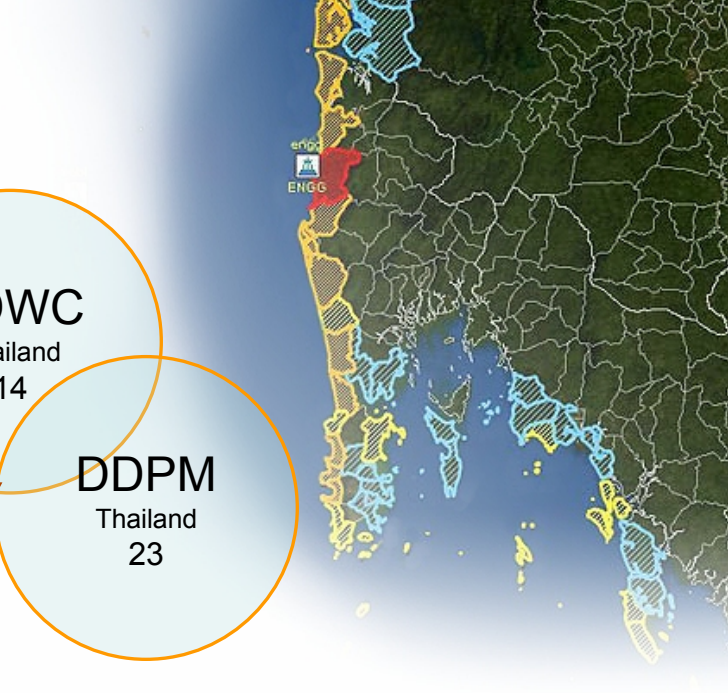


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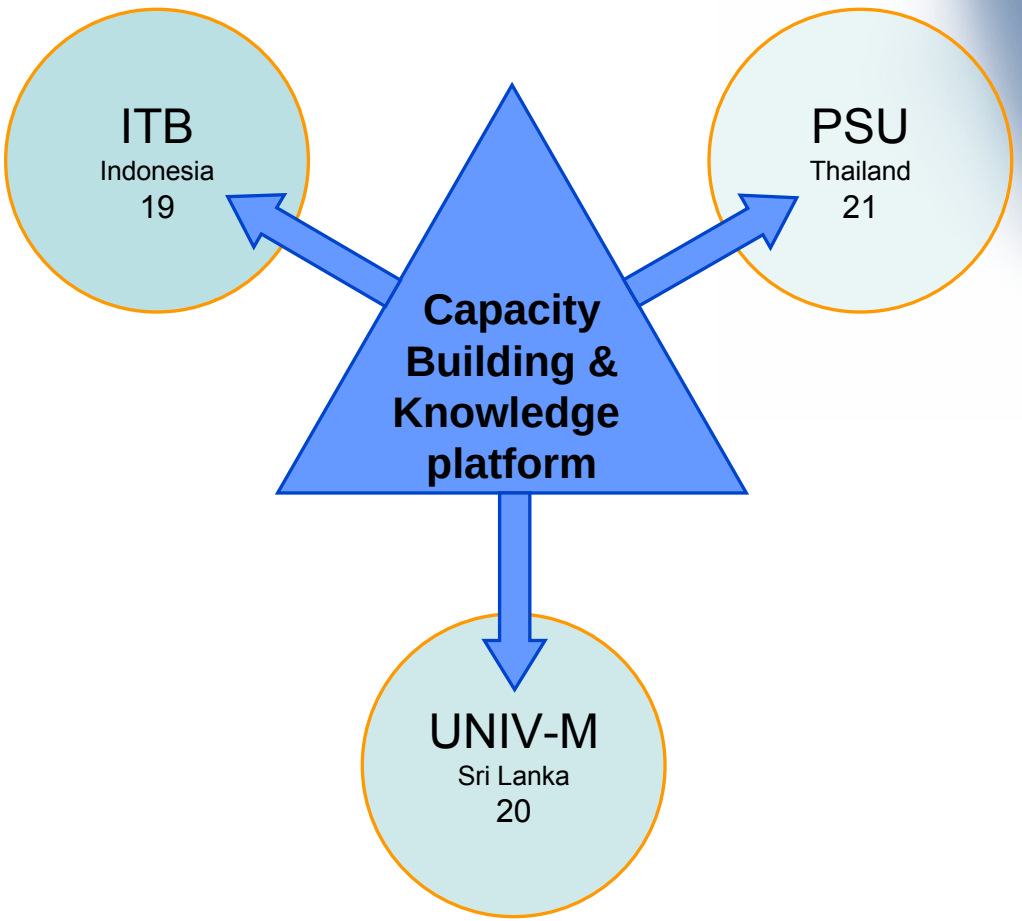
ITB
Indonesia
19
PSU
Thailand
21
Capacity Building & Knowledge platform
UNIV-M
Sri Lanka
20

ENGG

# A Good Starting Point…

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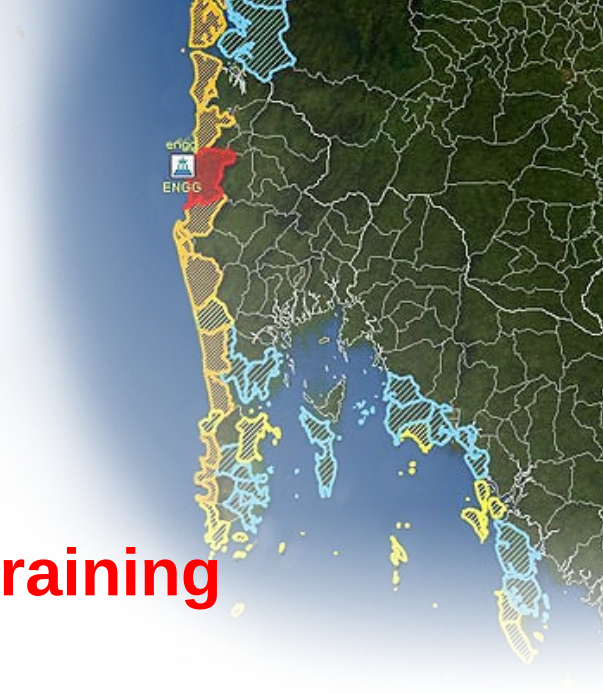
# DEWS Knowledge Platform




- **Development of harmonised Training Course materials**
- **Inclusion of e-Learning and Distance Learning towards BL**
- **Transposition to all relevant languages**
- **UN and ISO certification along international standards**

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# DEWS Knowledge Platform

## e-Learning

## My courses

Introduction to Natural Disasters and Disaster Mitigation
Teacher: Dr. Mario Wipki

Chapter Objectives: After reading all chapters, you should be able to explain the terms disaster, hazard, vulnerability, and risk. You will be informed about prediction of earthquakes, warnings, prevention, mitigation and preparedness. With special focus on tsunami you learn something about hazard potential in distinct regions, propagation of major historical events and the casualties due to natural disasters. Based on International Training Courses 1999 to 2007: Seismology Seismic Hazard Assessment and Risk Mitigation

Sensor systems for Tsunami Early Warning Systems
Teacher: Dr. Mario Wipki

Objectives: After reading Worksheet 2, you should be able to name the instrumentation of a tsunami early warning system and to explain the functionality.

**CAP – Common Alerting Protocol**
Teacher: Dr. Mario Wipki

Chapter Objectives: After reading this learning module,



| | | | | | | |
|---|---|---|---|---|---|---|
| | | | | | | 1 |
| 2 | 3 | 4 | 5 | 6 | 7 | 8 |
| 9 | 10 | 11 | 12 | 13 | 14 | 15 |
| 16 | 17 | 18 | 19 | 20 | 21 | 22 |
| 23 | 24 | 25 | 26 | 27 | 28 | 29 |
| 30 | | | | | | |

# Knowledge vs. Training

The Essential Modular Approach:

## Knowledge Packets

Module 1: Introduction to Natural Disasters and Mitigation

Module 2: Sensor Systems for Tsunami Early Warning Systems

Module 3: CAP – Common Alerting Protocol

Module 4: Modelling of Software Intensive Systems

Module 5: DEWS Decision Support Systems (DSS) for Tsunami Early Warning

Module 6: Learning Management System for DEWS

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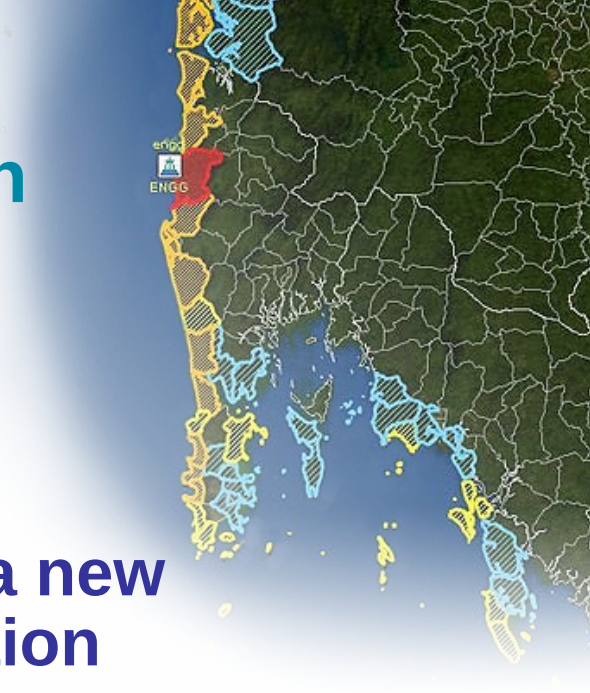
# Training vs. Professional Education




**DEWS Long Term Outreach Measures**

- **Early Warning Engineering - a new integrated professional education scheme**
- **Preparation of harmonised curriculum baseline standards at involved universitites**
- **Funding Application for curricula development for EU, UN system, etc.**

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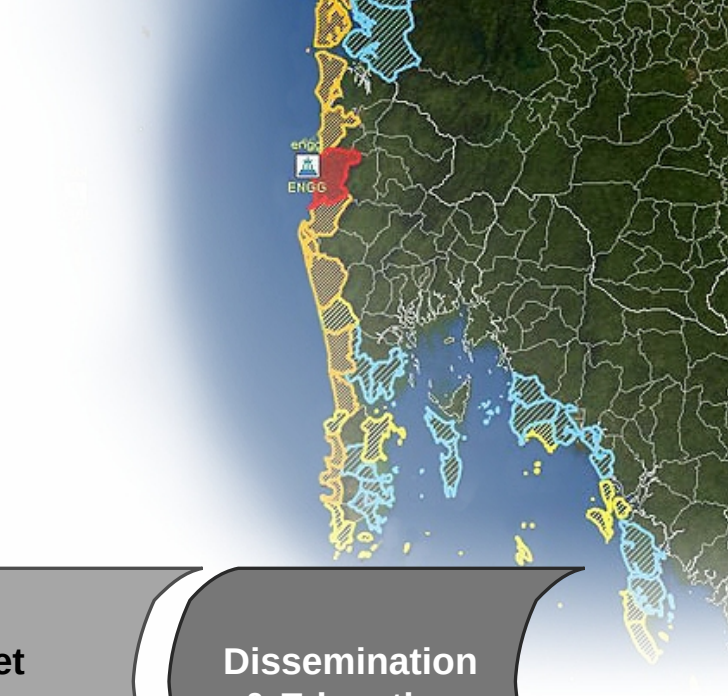
# Roles of Universities in DEWS




**Sensor integration**

**Software development**

**Market studies**

**Dissemination & Education**

Universities

| | | | |
|---|---|---|---|
| Institute of Technology Bandung<br>ITB<br>Indonesia | Moratuwa University, Dept. of Engineering<br>UNIV-M<br>Sri Lanka | Prince of Songkla University<br>PSU<br>Thailand | Chiang Mai University<br>CMU<br>Thailand |

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# University Partners around DEWS

ITB – Bandung

Moratuwa University – Colombo

Prince of Songkhla Univ. Hat Yai

Chiang Mai University

University of Bologna

TKK Helsinki

Bauhaus Univ. Weimar

IISEE & NIED Tsukuba

GNS/Waikato NZ

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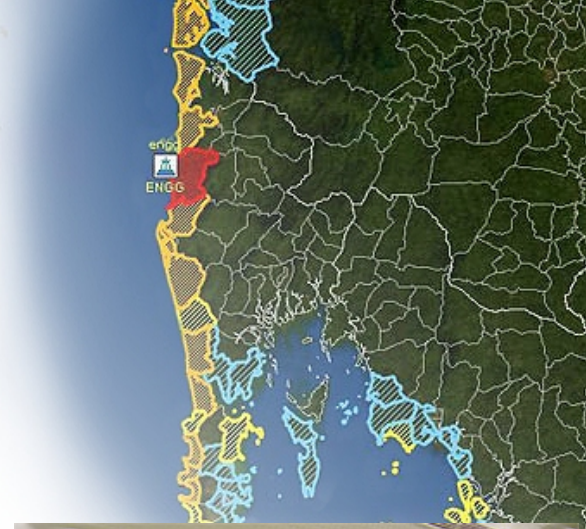
# Curricular Elements



**Natural Sciences**

- Mathematics
- Physics, Geophysics
- Seismology

- Geology, Plate tectonics, Remote Sensing
- Oceanography

**Informatics**

- Informatics / Geoinformatics

**Technic**

- Sensor Systems for Early Warning Systems
- Civil Engineering – Statics
- Integrated Coastal Zone Management

**Social Sciences / Management**

- Natural Hazard and Disaster Management
- Organisation – Authorities and public law
- Sociology / Psychology of emergency events

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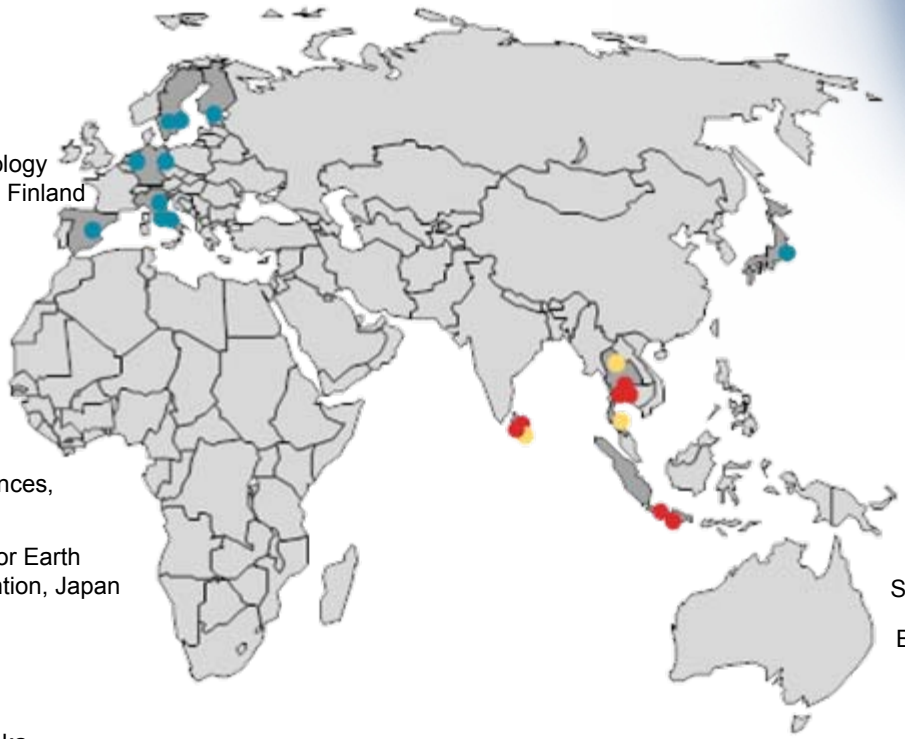

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