



Certificate of Advanced Studies in

India – Switzerland

Disaster Risk Reduction

**Vulnerabilities and capacities
in the context of climate change**

6 – 17 September 2010

→ EPFL, Lausanne, Switzerland

8 – 19 November 2010

→ IISc, Bangalore, India



GENERAL INFORMATION

Introduction

For around three decades, the world has had to face a drastic increase of "natural" (or so-called natural) disasters. There has been growing awareness and mobilisation over recent years regarding this problem on the part of many of the actors concerned: scientists, IOs, NGOs, and states.

Climate change, one of the biggest challenges for the 21st century is now acknowledged as a key factor in the increase of extreme events in hydro-meteorological disasters. Although no region of the world is completely spared by this type of disaster, the poorest countries are by far the most vulnerable, due to their lack of appropriate resources. The North-South scientific partnership and strengthening of the capabilities of scientists and other stakeholders are therefore crucial in the struggle to improve disaster risk reduction. Furthermore, training needs, at all levels, remain very considerable and must be looked upon as a primary objective in disaster reduction strategies.

Objectives

The objective of the second edition of the Certificate of Advanced Studies in Disaster Risk Reduction (CDRR 2010) is to propose a continuing education course to professionals and specialists from both Southern and Northern countries who already have significant experience in disaster risk reduction or a connected field such as climate change adaptation or development.

The CDRR aims to strengthen the capabilities of participants in the field of natural disaster prevention, especially hydrometeorological disasters and/or those related to climate change.

To achieve this, the course favours an integrated and interdisciplinary approach to the issue, focussing on the reduction of vulnerabilities and the strengthening of the capacities of populations at risk. The course does not have a technical vocation but concentrates on a practical and field-oriented approach in order to consolidate the theoretical part. Indeed, some time will be devoted to field visits, interactive workshops and methodological tools.

Upon completion of the course programme, participants should be familiar with natural disaster risk management, especially with regards to hydro-meteorological disasters. They will be in a position to:

- Compare and analyse the main risk management approaches;
- Interpret the current results of scientific research on climate change and challenges related to natural hazards, and identify appropriate measures in a specific situation;
- Apply methodological tools to assess vulnerabilities and strengthen adaptation.

Target Public

The course is primarily intended for professionals, researchers or managers specialising in natural risks or called upon by their profession to make decisions concerning risk situations. Participants



are required to have a university degree or equivalent. Their background could be in environmental sciences, civil engineering, architecture, physics, or mathematics, but also human sciences, such as sociology, geography, and international relations. This list is not exhaustive.

In order to make this training programme as attractive as possible, and taking into account the keen interest on the part of participants to benefit from shared experience, the group will again be deliberately mixed:

- It will be composed of representatives of NGOs, international organisations, academics, national or local administrations, and the private sector.
- Participants will come from both developing and emerging countries (citizens of India, Bangladesh and other Southern countries) and developed countries (Switzerland and other Northern countries).

Participants of any age will be welcome, but priority will be given to those who already have a few years of work experience. The organisers will try to ensure that gender balance is respected within the group.

ORGANISATION

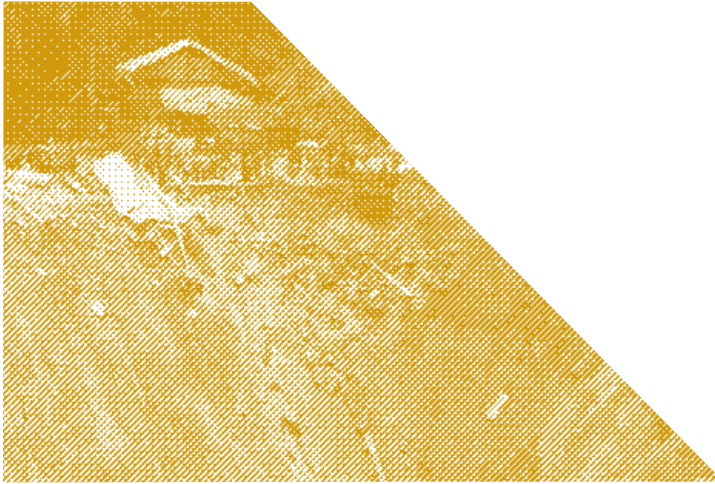
Host Countries ↴

The course will be held in Switzerland and India offering a unique chance for sharing the different standpoints and experiences of Europe and Asia regarding the risk issue.

Switzerland even though a small country is confronted with a considerable number of natural dangers (avalanches, landslides, floods, earthquakes, etc.). As a safeguard, a national strategy has been adopted, based on extensive know-how and expertise with regards to both disaster prevention and crisis management.

Geneva is moreover the home of many international organisations active in these domains. Their visions and practical experience will provide the training with an additional perspective.

India, as a huge Asian subcontinent is one of the countries most affected by natural disasters (floods, drought, cyclones, earthquakes, tsunamis, landslides, etc.) in the world. It is also a country with a vast amount of scientific expertise and local know-how, making it an important partner.



Location, Dates and Organisation ↘

The course will be organised in 2 parts, each consisting of 2 weeks of full-time study:

- The first part will take place at **EPFL, Lausanne, Switzerland, from 6-17 September 2010.**
- The second part will be held in India, at the **Indian Institute of Sciences (IISc) in Bangalore, from 8-19 November 2010.**

Teaching staff are drawn from the organising institution (EPFL), several Indian partner institutions, the host institution in Bangalore (IISc), Swiss, Indian and foreign universities and institutes, international organisations, NGOs and the private sector.

Course Organiser ↘

The CDRR is organised by Cooperation@epfl, which is attached to the EPFL Vice-Presidency for Institutional Affairs. The unit and the CDRR are directed by Prof. Jean-Claude Bolay.

The course organiser is assisted by an **Organising Committee** comprising of representatives from EPFL and the partner institutions involved in the programme.

Members of Organising Committee :

- **Jean-Claude BOLAY**, Prof., EPFL, Cooperation@epfl, CDRR Director
- [in alphabetical order]*
- **Mona Chhabra ANAND**, Knowledge Works, Associate Director, Coordinator in India
 - **Terry CANNON**, International Centre for Climate Change and Development (ICCCAD), Visiting Director of Studies, Bangladesh, Coord. session 12
 - **K. GOPAKUMAR K.**, Prof., Indian Institute of Science (IISc), Chairman CEDT, Bangalore, Coord. session 10
 - **Bruno HAGHEBAERT**, Dr., The Netherlands Red Cross, Coord. session 4
 - **Manish MOHANDAS**, SDC India
 - **Valérie NOVEMBER**, Prof., EPFL, ENAC, Study Group on the Spatiality of Risks (ESpRI Group), Coord. session 2
 - **André PITTET**, Dr., Indian Institute of Science (IISc), Logistic coordination in India, Co-coord. session 10
 - **Martine REBETEZ**, Prof., Swiss Federal Research Institute WSL and EPFL, ENAC, Laboratory of Ecological Systems, Coord. session 3
 - **Magali SCHMID**, EPFL, Cooperation@epfl, CDRR Coordinator

4



COURSE CONTENT

Features

The course is based on the **North-South scientific** partnership. The CDRR gives professionals an opportunity to improve their knowledge in the field of natural risks directly linked to reality and actual experience. The training also offers a chance to share the different standpoints and experiences of Europe and Asia regarding the risk issue.

Links between disaster risk reduction and development: One of the objectives of the course is also to increase the awareness of participants with regards to the links between North-South development and disaster risk reduction, by immersion in two countries with different economic and sociocultural realities such as Switzerland and India. The collaboration with the new ICCCAD (International Centre for Climate Change Adaptation and Development) in Dhaka, Bangladesh, during session 12, will also provide a regional **South Asian dimension** to the CDRR course.

Disaster risk reduction, especially natural disaster reduction, is strongly connected to the

climate change issue and adaptation. The course creates strong links between these two different approaches which are, without question, highly relevant in today's world.

Interdisciplinarity is also a very important component of the course, with a dialogue between the exact and human sciences being encouraged for a truly integrated and global approach.

The role of **science and technology** in the fight against disaster risks will also be focused on throughout the course. This topic is in line with the objectives of the Cooperation@epfi UNESCO Chair in Technologies for Development.

Teaching Methods

The objective is to link theory and practice, involving the use of a wide range of tools: lectures, case studies, round-table discussions, workshops, 2 in-depth field trips, individual projects, report writing, presentations.

Most of the sessions will cover issues relevant to Switzerland and India, thus providing a different - but complementary - slant.



Structure and Contents

SWITZERLAND		INDIA	
6-10 Sept. 2010	13-17 Sept. 2010	8-12 Nov. 2010	14-19 Nov. 2010
<p>Disaster Risk Management (DRM) Introduction to DRM concepts and approaches - Main challenges - Communication - Risk/Crisis management - case studies and lessons learned</p>			
<p>Climate Change and Hydrometeorological Risks State of knowledge in climate change and assessment - Impact of climate change on human beings - Mitigation - Political and technical challenges - The underlying risk drivers of climate change (urbanisation, declining ecosystems) - Monsoon and hydrometeorological risks in India</p>		<p>3-days field visit in a natural disaster prone area (Indian East Coast)</p>	
<p>Vulnerabilities and capacities Identification of vulnerabilities among populations at risk and study of strengthening of their capabilities - Multi-risk approach - Implementation of methodological tools through case studies - Preparation of field visits</p>			
<p>Science and Technology for Disaster Risk Reduction Research projects - Role of technology and its innovations in prevention and preparedness - Early warning systems - Risk mapping - Environmental Remote Sensing and GIS - Practical tools</p>			
<p>Visit of International Organisations - Geneva DRR at international level</p>	<p>Field visit in Canton of Valais Presentation of various prevention aspects in a risk area</p>	<p>Climate Change Adaptation in Bangladesh Regional perspective and South-South exchange of experience</p>	<p>Participants' work Presentation</p> <p>Final course assessment</p>
<p>General approach, theoretical and conceptual approach, IO practice, Swiss experience</p>		<p>In-depth study, practical approach, Indian experience, South-South knowledge sharing</p>	



FIRST PART IN SWITZERLAND

Session 1: Opening Day ▾

Welcome Day - Official Opening - Key Speaker
- Introduction to the course.

Session 2: Disaster Risk management I ▾

This session focuses on the notion of risk. One day will be devoted to an introduction of the concepts of Disaster Risk Management. Different approaches will be presented and analysed, offering participants a critical and complementary vision of the state of the art.

A second day will be dedicated to the new challenges and issues involved in DRM, in the context of globalisation.

Lecturers will be drawn from the scientific and academic environments as well as international organisations.

Session 3: Climate Change ▾

After an introduction in climatology, this session proposes an assessment of the current knowledge available in climate change. Scientists (climatologists, hydrologists, engineers) will discuss changes in precipitations,

impacts on ecosystems and at the hydrological level.

The impacts of climate change on human beings (migration, health care, food security for example) will be analysed, as well as the underlying risk drivers.

A second day will be dedicated to the mitigation and the political and technical challenges.

Session 4: Vulnerabilities and Capacities I ▾

The theme for this session will be the link between disaster and development and its impact on Southern countries. After studying the hazards and environmental factors, attention will be focused on the concept of vulnerability. Social vulnerability is a key component in every disaster risk assessment carried out at the local level. The module advocates a global and multi-risk approach to the issue.

Various methodological tools for assessing and strengthening capabilities will be presented and analysed (community-based DRM in particular). As backup to the theoretical part, seminars will be organised to allow participants to use these methods in a proactive role during real case simulations.



The second part of the session will concentrate on climate change adaptation (key concepts, framework for actions, etc.) and its linkages with DRR.

Session 5: Visit of International Organisations ▾

Participants will have an opportunity to visit some international organisations in Geneva active in the DRR domain, in order to become familiar with their actions and to exchange with their key members.

Session 6: Hydrometeorological Risks in Switzerland ▾

Following the international vision, reflection will then centre on the DRR framework in Switzerland, in particular in the field of hydrometeorological risks (floods, drought, landslides, etc.) and disaster reduction.

From the presentation of some scientific research projects conducted in Switzerland, the role of science and technology in DRR will be questioned. A field outing to the Valais will enable participants to visit diverse research and project sites, to observe various prevention aspects in a risk area, to meet key local figures as well as to assess impacts of CC on ecosystems.

Session 7: Closing Day of the First Part ▾

Round Table - Synthesis of the First Part - First Part Knowledge Assessment - Final Assessment.

SECOND PART IN INDIA

The objective is to examine the thematic sessions studied in Switzerland in more detail and offer participants a more practical vision, based on knowledge and experience in India. The proposed structure of the second part in India is as follows:

Session 8: Disaster Risk Management II ▾

Building upon session 2, the focus will be on the disaster management framework in India: national strategy, policy, mega disasters management. Case studies and lessons learned from crisis management will be discussed within a panel.

Session 9: Climate Change and Hydrometeorological Risks II ▾

Session 9 will provide more depth to sessions 3 and 6 whilst focusing on the main challenges that India has to face, particularly the monsoon and the climate change.



A half-day will be dedicated to the underlying risk drivers of climate change, particularly urbanisation and declining ecosystems.

Session 10: Science and Technology for Risk Reduction ▾

During this session, the key question will be the role of science and technology for risk reduction. How the innovations can improve the prevention and preparedness and what are the challenges and the constraints? Some applications such as early warning systems, risk mapping, environmental remote sensing or GIS will be analysed.

Session 11: Vulnerabilities and Capacities II ▾

Following session 4, this session will focus on field studies in India with the utilisation of methodological tools (vulnerability study and strengthening of capabilities thanks to Community Risk Assessment tools). The second part of the session will concentrate on the preparation of the 3-days field visit.

Session 12: Climate Change Adaptation in Bangladesh ▾

A special day will be dedicated to the climate change adaptation in Bangladesh. This session will be organised in partnership with ICCCAD (International Climate Change Centre for Adaptation and Development). The current situation and potential threats will be presented, as well as adaptation measures and the actors dealing with these.

The second day will offer the opportunity to enhance the dialogue from a regional perspective, proposing a South-South exchange of experience and best practices between India and Bangladesh. Some key considerations for integrating climate change into development programmes in India and developing countries will be analysed.

Session 13: Three Days-Field Visit ▾

This will be organised on the Indian East Coast, an area particularly affected by natural disasters. Together with field workers, participants will have the opportunity to familiarise themselves with



different participative multi-risk prevention methods. They will be able to form their own observations by visiting some villages and meeting different stakeholders (representatives of the population, field workers from NGOs, local government representatives, etc.).

Session 14: Individual Work and Presentations ▾

Finalisation of participants' individual work, presentation of this work and final course assessment.

Session 15: Closing Day ▾

Final Synthesis - Assessments - Distribution of Certificates - Farewell.

PRACTICAL INFORMATION

Language ▾

A good knowledge of both oral and written English is required, as all courses will be in this language.

Applications ▾

The deadline for receiving applications is **30 May 2010**.

For their applications to be considered, candidates should have a degree from a university or institute of technology. In all cases, two or more years of work experience will be an advantage.

A maximum number of 25 participants will be accepted, with roughly equal numbers from Switzerland, India, Bangladesh and the rest of the world. The following documents are required:

- Completed Application Form
- A detailed Curriculum Vitae
- Motivation Letter (personal and professional objectives and expectations)
- Grant Application Form (if applicable)



- Certified copies of Certificate(s), University Degree(s) and/or equivalent titles (if documents are not in English or French, please provide a certified translation)
- Certified copies of Original Transcripts (if documents are not in English or French, please provide a certified translation)
- Copy of ID Card or Passport
- Two Passport Photos (3.5 x 4.5 with surname, first name and birth date inscribed on the back)

Note that due to frequent forgeries, the EPFL requests accepted participants to bring their original diplomas (on the first day of class or before) for verification.

All applications will be reviewed by the course organiser (EPFL) and are then submitted to the School of Continuing Education and the Registrar's Office for approval.

The course organiser reserves the right to cancel this course if the number of enrolments is insufficient and to modify the present programme at any time.

Qualification ↘

Participants who successfully fulfil all the requirements of the course will obtain a Certificate of Advanced Studies in Disaster Risk Reduction. This represents 16 credits as per the European Credit Transfer System (ECTS), corresponding to 400 hours of work (approximately 180 hours of classes, plus participants' individual work).

Tuition ↘

The total tuition fee is CHF 3,400.- (enrolment fee: CHF 680.- plus course contribution: CHF 2,720.-). Please note that travel, board in Switzerland, and in India during the weekends, as well as lodging expenses are not included.

Enrolments are considered official only after payment of the tuition fee to the institution responsible for the participant's acceptance.

In case of withdrawal after official enrolment on the course but prior to the beginning of the course, an administrative fee of CHF 1,000.- will be charged. No refunds will be made to participants after the course starts.



Living Expenses and Budget ▾

In Switzerland: The cost of living is very high. A minimum amount of CHF 250.- should be anticipated for food for 2 weeks. A full meal costs CHF 8.50 at campus restaurants. As far as accommodation is concerned, rooms are available for approximately CHF 80.- /day, including breakfast. A total budget of between CHF 1,500.- and 1,800.- should be allowed for living expenses.

In India: The cost of food in India during all working days is already included in the tuition fee. Basic accommodation on campus will be available for approximately CHF 10.- per day, i.e. CHF 150.- for the entire stay. A total budget of approximately CHF 500.- should therefore be allowed for living expenses.

The plane ticket from Switzerland to India costs between CHF 1,500.- and 1,700.-.

Financial Support ▾

Full and/or partial grants may be offered to **participants coming from developing or emerging**

countries that are not able to meet the total costs involved. Priority will be given to participants of India and Bangladesh. The grant will cover tuition fees as well accommodation and board in Switzerland and India. Note that grants will **not** cover travelling costs to Switzerland and India.

Applications (and all accompanying documents) must be submitted on the Grant Application Form to the CDRR course organiser.

Passport and Insurance ▾

European participants wishing to obtain a visa for India require a passport that is valid for a period of at least six months.

Requirements for entry to Switzerland
For Indian citizens:
<http://www.eda.admin.ch/newdelhi>

Other nationalities:
<http://information.epfl.ch/page33648.html>

Health and accident insurance is obligatory for all participants.

COOPERATION @ EPFL

EPFL ↘

With more than 250 laboratories and research groups, EPFL (Swiss Federal Institute of Technology Lausanne) is one of Europe's most innovative and productive technology institutes.

The school's structure facilitates transdisciplinary research and encourages partnerships with other institutions in both fundamental research and engineering applications.

About Cooperation@epfl ↘

The Cooperation@epfl unit is attached to the Vice-Presidency for Institutional Affairs.

Cooperation@epfl's mission is to contribute to offering a response to the most pressing world challenges. This is achieved by encouraging scientific partnership, research and education that will help adapt appropriate technologies to developing countries, based on a cooperation approach centered on scientific development and the fostering of North-South collaborations.

In March 2007, Cooperation@epfl was recognised as a UNESCO Chair in Technologies for Development, becoming the 4th UNESCO Chair in Switzerland.

The priority fields of the Chair are:

- Technologies for sustainable habitat and cities
- ICTs for the environment
- Science and technology for disaster risk reduction
- Technology for sustainable energy production

Activities ↘

To achieve its objectives, Cooperation@epfl has 5 types of activities:

- **Research**
 - Interschool projects in four priority fields of the UNESCO Chair
 - Own researches
- **Programme Management**
 - Indo-Swiss Collaboration in Biotechnology (ISCB)
 - EPFL-SDC Fund
 - Seed Money Funding Programme
 - SER Mandate: Chile & Brazil
- **Education**
 - CAS in Disaster Risk Reduction (CDRR)
 - CAS in Sustainable Development and the Role of Technology (CSDRT)
 - Support to the Master Innovations, development et societies (MIDS)
- **Scientific Services & Institutional Partnerships**
 - Consultancies
 - Monitoring
 - Evaluations
 - Institutional collaborations at Swiss and international levels
- **Communication & Information**
 - Publication
 - Organisation of events, raising awareness

For further information ↘

<http://cooperation.epfl.ch>
 Tel: +41 21 - 693 60 12
 E-mail: cooperation@epfl.ch

EPFL

Cooperation@epfl - VPAI

Station 10 • 1015 Lausanne, Switzerland

+41 21 693 6048 • cooperation@epfl.ch • <http://cooperation.epfl.ch>