

**Certificate of Advanced Studies CAS  
2011–2012 in Switzerland**

**Integrated Water Resource Management  
(IWRM) in the Context of Developing and  
Transition Countries**

**Bern University of Applied Sciences**  
Architecture, Wood and Civil Engineering

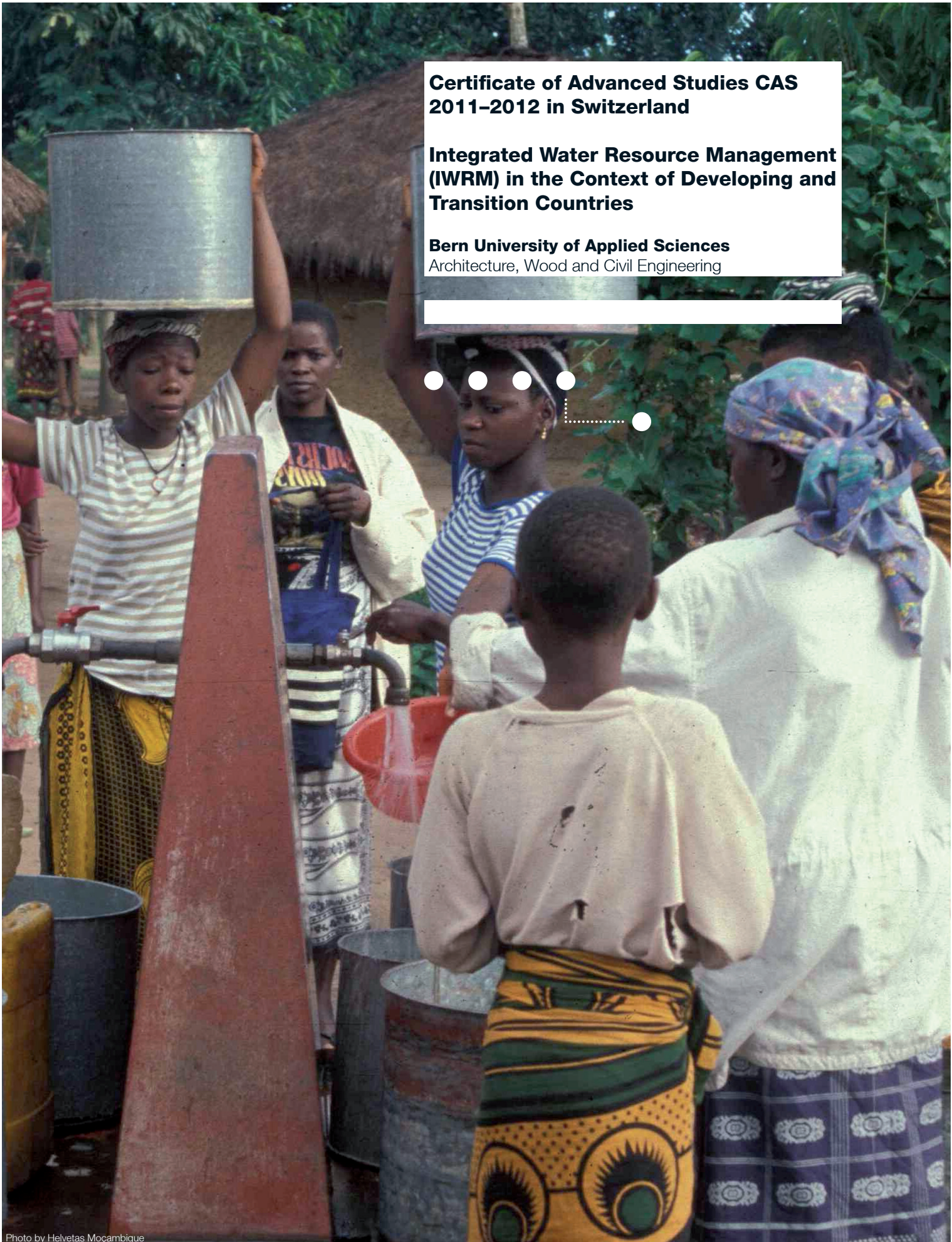


Photo by Helvetas Moçambique



Schweizerische Eidgenossenschaft  
Confédération suisse  
Confederazione Svizzera  
Confederaziun svizra

Swiss Agency for Development  
and Cooperation SDC



University of Applied Sciences Northwestern Switzerland  
School of Life Sciences



Bern University of Applied Sciences  
Swiss College of Agriculture SHL



eawag  
aquatic research



skat

Swiss Resource Centre and  
Consultancies for Development

u<sup>b</sup>

UNIVERSITÄT  
BERN  
DEUTSCHER ZENTRUM  
KLIMAFORSCHUNG

inter  
cooperation

Natural Resource Management  
Rural Economy  
Local Governance and Civil Society

◀ helvetas ▶



### What is IWRM?

IWRM is the abbreviation for “Integrated Water Resource Management”. It is concerned with the process of promoting the coordinated development and management of water, land and related resources in order to maximize the resultant economic and social welfare in an equitable manner without compromising the sustainability of vital ecosystems. It should be noted that the management of water resources is defined as a process; consequently it is also a learning process.

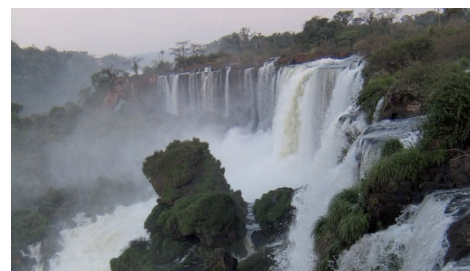


### CAS – Objectives

Participants will be trained to consider water-related problems from an integrated and global point of view, derive and discuss possible solutions and propose potential activities in a local context. They will improve their management and monitoring skills with regard to water projects in Developing and Transition Countries.

### Methodology

Theory inputs help to define commonly used terminology of different water topics and enable participants to gain an overview and understanding of the complex issues. Case studies and group work ensure that the training is practice- and application-oriented. Participants are expected to bring in their personal experience. Specific inputs and exercises present water as an exciting topic from various points of view. Excursions provide an insight into specific Swiss water facilities. Methodological inputs help participants to apply theoretical knowledge in practical situations.



### Language

The official language is English.

### Project Partner / Course Instructors

All course instructors are highly qualified specialists with long-term experience in development cooperation. Course instructors come from the following institutions:

- SDC, Swiss Agency for Development and Cooperation
- HELVETAS, Swiss Association for International Cooperation
- SKAT, Swiss Resource Centre and Consultancies for Development
- INTERCOOPERATION, Swiss Foundation for Development and International Cooperation
- EAWAG, Swiss Federal Institute of Aquatic Science and Technology
- FHNW, University of Applied Sciences Northwestern Switzerland, School of Life Sciences
- SHL, Swiss College of Agriculture
- BFH, Bern University of Applied Sciences
- UBC, University of British Columbia
- CDE, Centre for Development and Education, University of Bern
- OESCHGER CENTRE, Climate Change Research, University of Bern

The complete CAS consists of the following units:

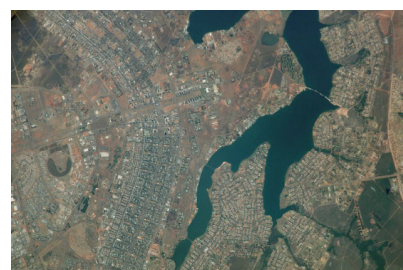
Unit	Gained competence	Hours	ECTS
<b>1. Preparatory homework for Module “Cognition and Assessment”</b>	- Basic knowledge in order to follow the class instruction of the Module	20	3
<b>2. Class instruction Module “Cognition and Assessment” in Switzerland</b>  <b>15.8.2011–26.8.2011</b>	The participant has: - understood the basics of the IWRM approach - perceived scopes, requirements, problems etc. of water projects - derived core problems for the assessment of water projects - assessed water projects according to IWRM principles	70	
<b>3. Preparatory homework for Module “Practical Solutions and Actions”</b>	- Basic knowledge in order to follow the class instruction of the Module	20	3
<b>4. Class instruction Module “Practical Solutions and Actions” in Switzerland</b>  <b>13.8.2012–24.8.2012</b>	The participant has: - understood the basics of the IWRM approach - become acquainted with practical solutions of IWRM projects - transformed assessment results into concrete actions - supervised planning, implementation and monitoring of a water project with regard to IWRM	70	
<b>5. Proof of competence: Written project work after the second Module</b>	- The ability of the candidate to handle a topic related to IWRM independently has been demonstrated.	120	4
<b>Complete CAS</b>		<b>300</b>	<b>10</b>

### CAS Start

- It is possible to start the complete CAS with either the Module in 2011 or 2012.

### Conditions for the granting of the CAS certificate

- Achievement of 10 European Credit Transfer System points (ECTS).
- Active class attendance of Modules (minimum 80% physical presence).
- Minimum grade E (pass) according to the ECTS grades for the written project work.



### Options

- Participation in units 1+2 listed above: Certificate of attendance for Module “Cognition and Assessment” (worth 3 ECTS).
- Participation in units 3+4 listed above: Certificate of attendance for Module “Practical Solutions and Actions” (worth 3 ECTS).

## Preparatory homework for Module “Cognition and Assessment”

After registration, the organizer will provide participants with relevant documents and Internet links to be studied as a preparation for the class instructions of Module “Cognition and Assessment”. The preparatory homework helps participants to acquire the minimum professional knowledge in order to be able to follow the Module.

## Class instruction of Module “Cognition and Assessment” (15.08.2011–26.08.2011)

### Cognition

Why is IWRM so important for Developing and Transition countries? How does IWRM contribute to the achievement of the Millennium Development Goals? What are globally relevant problems related to IWRM?

Participants will be introduced to the IWRM approach with information on the history and development of the water sector in different Developing and Transition Countries. They will be confronted with the fact that water is not only a prerequisite for human life and natural systems but also for socio-economic development and a healthy environment. Specific inputs discuss water from different points of view. In the laboratory the participants will test water properties and become acquainted with methods of water measuring. In a case study from India they will discuss the extensive ground water extractions which led to the green revolution in the agriculture sector on the one hand but also had negative impacts like falling water tables and chemical pollution on the other. A case study from South America highlights the requirements of different stakeholders for multiple water uses which resulted in a Water Service Association tending to the different needs of the clients. In group work the participants will assess water situations as well as identify and discuss key questions with regard to the implementation of the IWRM approach. Participants may also present their own experiences and discuss questions with colleagues and the course instructors.



### Assessment

Is IWRM applicable in the case of Emergency Aid? Why do many Developing and Transition Countries find it difficult to offer adequate water, sanitation, drainage and waste management services? Which are the relevant indicators to assess a water project with regard to IWRM? Within the framework of a theoretic input, participants will be introduced to assessment methods and discuss their applicability for different types of water projects. With the help of an example from Moldova, the Swiss Humanitarian Aid Unit will present the challenges involved in emergency cases when they need to supply the affected population with clean drinking water and to stem epidemics and diseases. Another case study discusses the fact that conventional approaches to environmental sanitation may be unable to improve significantly the service backlog which exists in most developing countries. In this context participants will discuss a new multi-sectoral approach which places the households and neighbourhoods at the core. A one day excursion will be organized for participants to visit specific water objects in Switzerland. At the end of Module “Cognition and Assessment”, a project example from Central Asia will be jointly assessed and a checklist elaborated as guideline for the assessment of water projects.





## Preparatory homework for Module “Practical Solutions and Actions”

After registration, the organizer will provide participants with relevant documents and Internet links to be studied as a preparation for the class instruction of Module “Practical Solutions and Actions”. The preparatory homework will help participants to acquire the minimum necessary professional knowledge to follow the Module.

## Class instruction of Module “Practical Solutions and Actions” (13.08.2012–24.08.2012)

### Practical Solutions

How can the quality of drinking water be improved? Does it make sense to include political, social, technical, financial and cultural requirements into water projects? What are possible solutions for establishing a supranational water management and monitoring system?

It will be recognized that regardless of the national, regional or local level each water project has its own framework conditions and needs. A case study from rural Nepal shows that capacity building and stakeholder coordination are essential in order to establish local structures that jointly manage sustainable drinking water and sanitation facilities. The Nile provides water for millions of people in several African countries. While the adjoining states try to regulate the quantitative utilization of water, the necessary structures for the regulation of water quality, biodiversity etc. have been missing. It will be recognized that the dialogue between states, private sectors and civil societies is essential in order to manage and monitor an international river. In group work the participants will develop practical solutions and actions for specific water situations. Participants will measure the water quality and quantity in the laboratory and in the natural river and discuss solutions to improve water quality. They may present and discuss their own experiences with their colleagues and the course instructors.



### Actions

Can scenarios be designed for a future water sector taking into consideration the demographic increase and global climate changes? How can theoretical IWRM knowledge be transformed to concrete actions?

A theoretical input lays the basis for project planning, in particular for the formulation of concrete actions. An example from Togo shows the development of a water supply system as a joint project of 14 villages managed by a board of local authorities. Participants will study and discuss the example of the Zambezi Basin, where the pressure of the predicted 75M inhabitants in 2025 is expected to intensify water utilization for agriculture, hydropower, wetlands, urban and other uses.

There will be a one-day excursion to visit specific water objects in Switzerland. At the end of Module “Practical Solutions and Actions”, an action plan for an IWRM project in Central Asia will be prepared jointly.



### Target audience

- Civil engineers, geologists, environmental specialists, agricultural engineers and specialists from similar professions interested in IWRM in the context of Developing and Transition Countries.
- Managers/specialists of governmental organizations, NGOs or development projects dealing with water related topics in Developing or Transition Countries.
- Students attending the last year of a related course of studies on the tertiary level.

### Admission requirements

The precondition for the admission to the CAS is a degree at the tertiary level. Requirements for students see above. The admission of persons with an equivalent degree will be decided on an individual basis.



### Costs / Payment conditions

#### Participants from Developed Countries:

Complete CAS including project work (examination): CHF 7'000.–

Attendance of Module “Practical Solutions and Actions” only: CHF 3'500.–

Attendance of Module “Cognition and Assessment” only: CHF 3'500.–

#### Participants from Developing and Transition Countries:

Complete CAS including project work (examination): CHF 5'000.–

Attendance of Module “Practical Solutions and Actions” only: CHF 2'500.–

Attendance of Module “Cognition and Assessment” only: CHF 2'500.–

#### For all participants:

Transport, accommodation and food are at the expense of the participants.

Upon request, the organizers will help the participants to find an appropriate accommodation.

#### Payment conditions

The amount of at least one Module must be paid until 17<sup>th</sup> June 2011.

## Registration

The number of participants is limited to 25. Registrations will be considered according to the entrance date. Applicants for the complete CAS will be granted priority registration. Representatives from Developing and Transition Countries are particularly invited to participate.



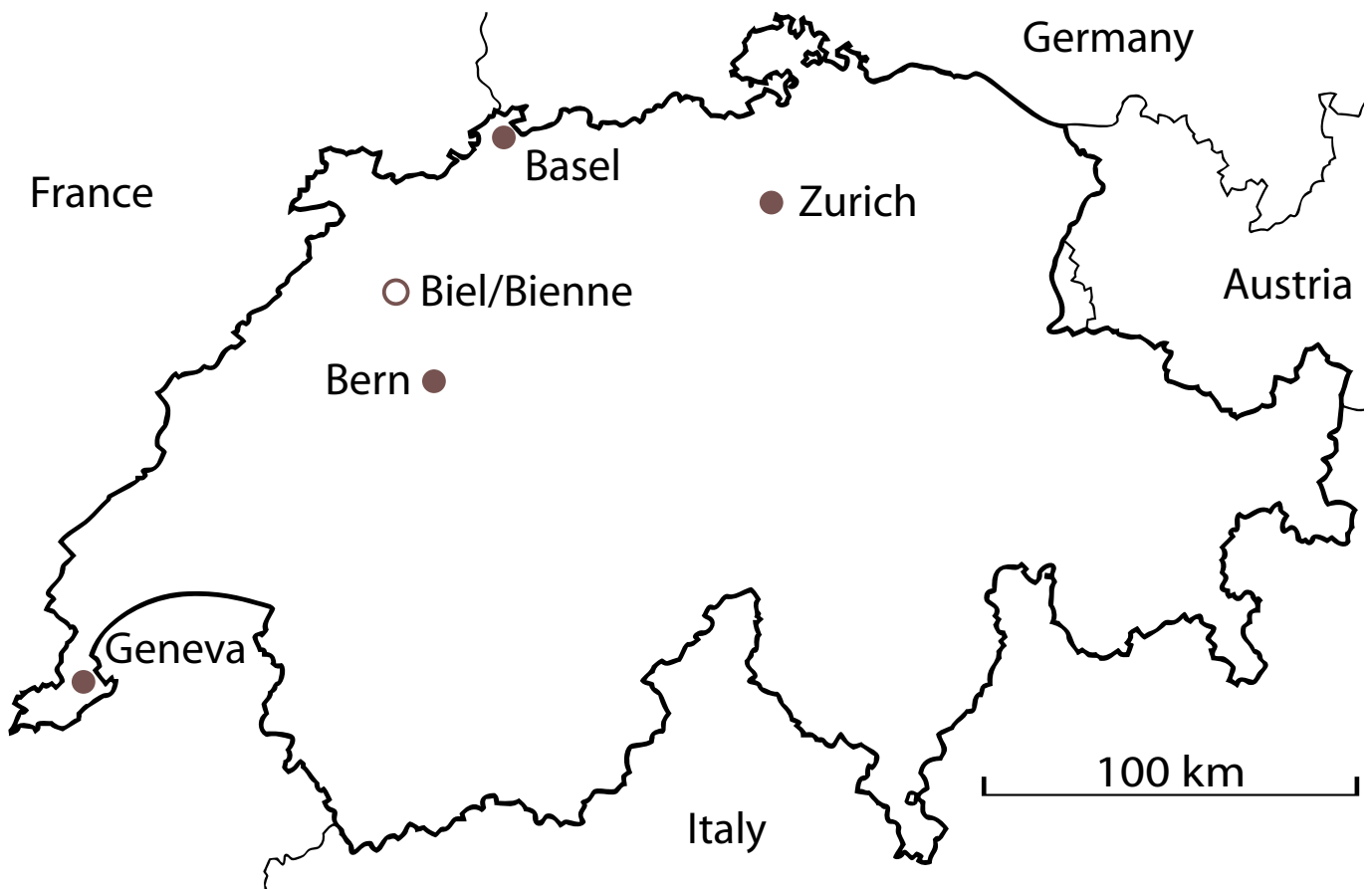
**Registration deadline: 13<sup>th</sup> May 2011**

## Location of class instruction

Bern University of Applied Sciences  
Architecture, Wood and Civil Engineering  
Solothurnstrasse 102

**CH-2504 Biel/Bienne**

Switzerland



**Contact and Registration**

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**[www.ahb.bfh.ch/weiterbildung](http://www.ahb.bfh.ch/weiterbildung)**

Your registration by e-mail or fax should include the following information:

Surname: .....

First name: .....

Profession and academic title: .....

Present place of work or study: .....

Address: .....

Postal code and place: .....

Country: .....

Phone: .....

Fax: .....

E-mail: .....

Funding source available: ☐ Personal ☐ Employer ☐ Donor

Request for: ☐ BFH Scholarship

Place / Date: .....

Signature: .....

Please attach an updated CV and a copy of your diploma/certificate to your registration.

**Registration deadline: 13<sup>th</sup> May 2011**