

# Master of Integrated Water Management

Graduate Certificate and Graduate Diploma  
Full-time and part-time/distance



INTERNATIONAL  
**WATERCENTRE**

[www.watercentre.org](http://www.watercentre.org)

**Water leadership  
for the future**

IWC GRADUATES RECEIVE A CO-BADGED DEGREE FROM FOUR LEADING AUSTRALIAN UNIVERSITIES:



# About the program

The International WaterCentre (IWC) Master of Integrated Water Management is one of the few courses in the world that take a truly integrated approach to teaching water management.

The program uses problem-based learning, case studies, field trips and industry placements to develop skills for integrated solutions in the real world. IWC students come from all over the world, with professional backgrounds such as engineering, biology, chemistry, geology, public health, hydrology, natural resource management, social sciences and philosophy.

## Problem-based assignments

The team and individual projects that students undertake in Australian and international settings are a unique feature of the program. Students are guided through these projects with lectures and workshops to integrate disciplinary knowledge learnt in the modules.

## Options

- Full-time | part-time/distance
- Graduate Certificate | Graduate Diploma | Masters

The program is delivered at The University of Queensland. It is taught and co-badged by IWC's four member universities.

## Graduates acquire

- communication skills across disciplines and sectors, sciences, technology and policy
- systems thinking skills for whole-of-water-cycle management
- collaboration skills for cross-sectoral teamwork
- problem-solving skills for complex issues requiring difficult tradeoffs
- risk assessment and planning skills for sustainable solutions
- adaptive and reflexive learning skills i.e. an ability to learn by doing and applying context-specific solutions.

## Great incentives to enrol

- Field trips (Western Australia, Stradbroke Island and others) included in the tuition; Thailand field trip subsidised
- Masters and Diploma students receive \$1,000 toward professional development
- Masters students receive up to \$1,000 to support their final semester project
- Eligible students can apply for Fee-Help, an Australian government loan to help with tuition fees



New professionals

Mid-level professionals


Senior-level professionals

Advance career  
Gain new perspectives  
Change career direction

### Master of Integrated Water Management

Integration skills  
Leadership skills  
Managerial skills  
Technical skills

High level management positions  
International development agencies  
National and international consultancy companies  
Policy and planning  
Government and private corporations  
Community and non-government organisations



2011 IWC students use conceptual sand models to discuss water issues on Stradbroke Island.



## Why study the Master of Integrated Water Management

The challenges facing water managers across the world increasingly require leaders able to cross social, environmental and technological boundaries, to combine disciplinary knowledge and to use theory to inform effective practice.

The Master of Integrated Water Management creates water leaders by drawing on international teaching and research from many fields to provide a transdisciplinary, whole-of-water-cycle approach.

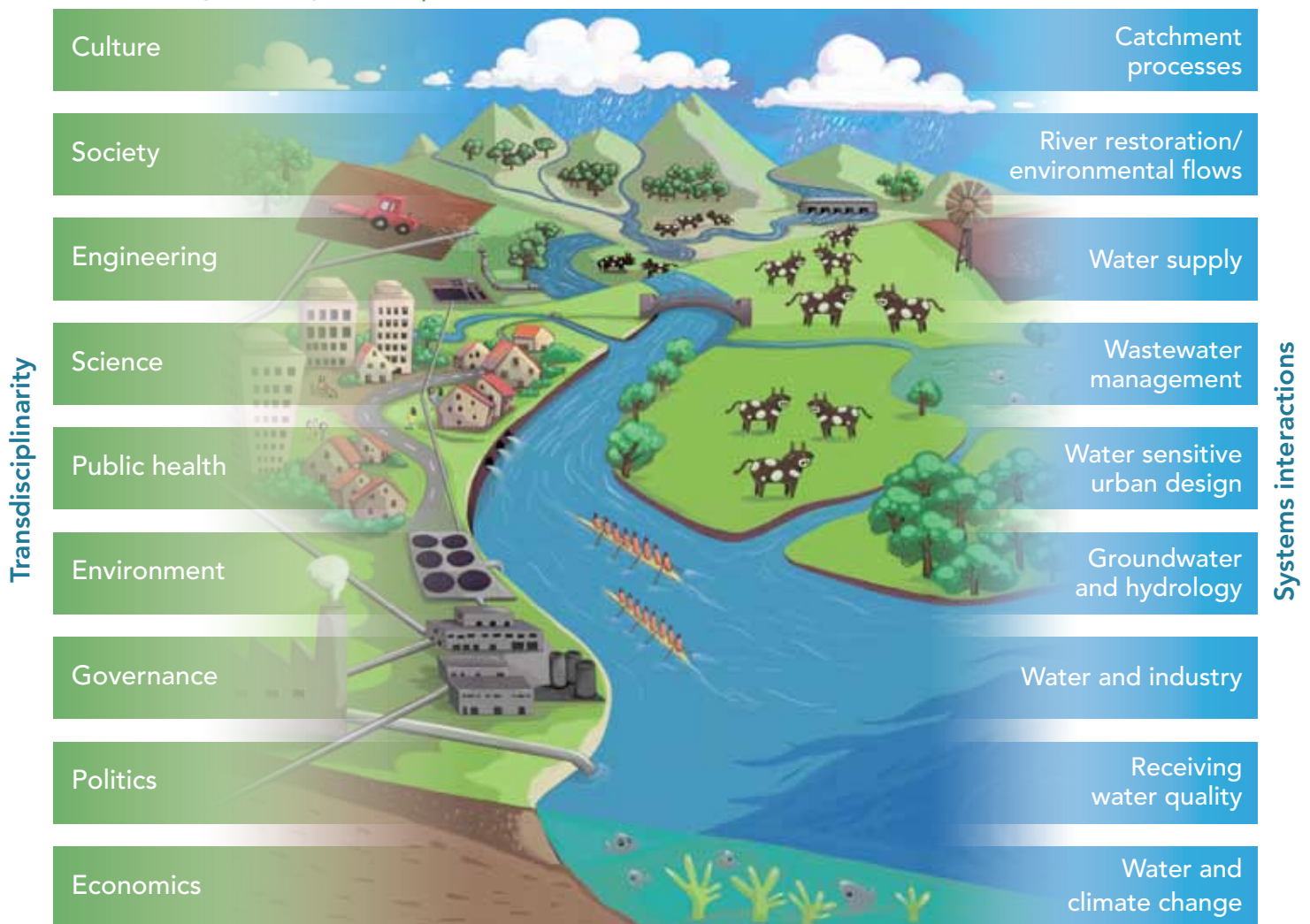
**Laura Powell**  
Mining Engineer, Australia

The importance of properly managing our global water assets will only become greater in years to come and I'm excited to be a part of that.



### Cross-cutting water cycle disciplines

### Water cycle elements and processes



## What is Integrated Water Management

The integrated approach to water management acknowledges the environmental, ecological and human processes that water undergoes from catchment to coast; clarifies and manages the multiple values of water; and considers the impacts of decisions systemically across environment, politics, law, science, culture, engineering, economics, health and society.

## Full-time – Program overview

The full-time Masters program comprises three semesters to be completed in either 12 or 18 months. The first two semesters are module-based, and the final semester is devoted to an individual research project or industry placement in a specialised field of water management, undertaken in Australia or another approved location.

### Program options

#### Semester 1 **Foundation** **Graduate Certificate**

WATR7000	Project management	Problem-based learning projects
WATR7001	Science of water	
WATR7002	Water, sustainability & development	
WATR7003	Water governance & policy	

#### Semester 2 **Integration** **Graduate Diploma**

WATR7100	Catchment & aquatic ecosystem health	Problem-based learning projects
WATR7300	Water planning & economics	
	First module of chosen stream	
	Second module of chosen stream	

Choose one stream (two modules per stream)

International development
Land and water
Urban water

#### Semester 3 **Final project** **Masters**

WATR7500	Integrated water management project
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The program starts in February/March each year

**Graduate Certificate** – 1 semester

**Graduate Diploma** – 2 semesters

**Masters** – 3 semesters (completed in 12 or 18 months)

### Field trips

#### Semester 1

- Three-day field trip to North Stradbroke Island (Cost of trip from Brisbane covered in course fees)

#### Semester 2

- 14-day field trip to Western Australia, covering most of one Semester 2 module (Cost of trip from within Australia covered in course fees)

#### Semester 3

- Students undertake a specialisation project of their choice, guided by two academic supervisors

#### Optional Thailand field trip

- Ten-day field trip to Thailand for elective module Capacity building and community development

### Thailand village experience

A remote village in Northeast Thailand near the Mekong River will be home to IWC Masters and Diploma students for ten days during the elective module Capacity building and community development for IWM, taught by Monash University's Dr Bruce Missingham.

Students spend time at a village cooperative learning about community organising and environmental campaigning. They learn firsthand about water resources development, environmental change and social conflict, and discuss these issues with community members, NGO workers and government officers.

Students live with local families and participate in everyday activities such as harvesting rice, cooking, fishing or making fish nets. Students experience the realities of water in village life, learning about how it is bound up with culture, livelihoods and health.

Dr Missingham, the program's creator and leader, is an anthropologist with interests in community development and political ecology. He has a long-standing relationship with the communities and village cooperative on the Mun River in Thailand who will host the field studies experience.

The field trip will be partially subsidised by IWC.



### Robert Apunyo, IWC Alumnus

Research Fellow, Public Affairs and Parliamentary Support Trust, Zimbabwe



The IWC Masters training has been very applicable in designing a study of Harare City's water supply situation to highlight current problems and inform policy and institutional review.

## Part-time/distance – Program overview

The programs are also offered to Australian and New Zealand residents as a part-time/distance study option. Students undertake two modules per semester, and the final year is devoted to an individual research project or industry placement where students can specialise in a field of water management of their choice.

At the beginning of each semester students attend a short residential period of field trips and workshops together with other part-time and full-time students. This face-to-face component helps to reduce the overall workload of the course and allows students to meet other students and lecturers. The rest of the course is conducted online.

### Field trips and workshops

#### Semester 1

- Two-day workshop at The University of Queensland, Brisbane
- Three-day field trip to North Stradbroke Island (Cost of field trip from Brisbane covered in course fees)

#### Semester 2

- 14-day field trip to Western Australia, covering most of one Semester 2 module (Cost of field trip from within Australia covered in course fees)

#### Semesters 3 and 4

- Five-day workshop at The University of Queensland, Brisbane
- Five-day workshop at Griffith University, Brisbane

#### Semesters 5 and 6

- Students undertake a specialisation project of their choice, guided by two academic supervisors

#### Optional Thailand field trip

- Ten-day field trip to Thailand staying with village families in the Mekong region for elective module Capacity building and community development (See previous page for more details)

### Program options

Graduate Certificate		
WATR7000	Project management	Problem-based learning project Sem 1
WATR7001	Science of water	
	Intensive workshop (1 week) Brisbane	
WATR7100	Catchment & aquatic ecosystem health	Problem-based learning project Sem 2
	First module of chosen stream	
	Intensive workshop (2 weeks) Albany	
Graduate Diploma		
WATR7002	Water, sustainability & development	Problem-based learning project Sem 3
WATR7003	Water governance & policy	
	Intensive workshop (1 week) Brisbane	
WATR7300	Water, planning & economics	Problem-based learning project Sem 4
	Second module of chosen stream	
	Intensive workshop (1 week) Brisbane	
Masters		
WATR7501	Integrated water management project	Sem 5 Sem 6
Choose one stream (two modules per stream)		
	International development	
	Land and water	
	Urban water	

The program starts in February/March each year

**Graduate Certificate** – 2 semesters

**Graduate Diploma** – 4 semesters

**Masters** – 6 semesters



IWC Senior Lecturer Brian McIntosh discusses groundwater storage with IWC students



# Foundation modules

A multidisciplinary team of lecturers and water practitioners teaches students the foundation skills of integrated water management, emphasising project management and effective communication for cross-sectoral project teamwork.

## Karen Franz Delfau

IWC Water Leader Scholarship recipient, USA

Where else could I learn from the perspectives of 33 people from 20 countries?



## Modules

### Project management

Principles of project management for each stage of a project, emphasising participatory project management and frameworks for cross-sectoral collaboration

### Science of water

Principles of water science, aquatic ecology and the hydrological cycle, with understanding of the dynamic relationship between human and natural systems

### Water, sustainability and development

Broad theories underpinning global sustainable development initiatives and their application to water access and use, particularly in regard to poverty alleviation, public health, livelihood security and gender equity

### Water governance and policy

International governance, legislative and regulatory frameworks, and the principles and practice of catchment-level water policy

## Problem-based learning projects

- Group project: Situation analysis and critique of an existing water management project or program
- Individual project: Design of a project proposal to address a real-world water management issue from an Integrated Water Management perspective

## Island classroom

One of the world's largest sand islands becomes a classroom to IWC students for three days in the first week of the programs.

On North Stradbroke Island, off the east coast of Australia, students work in small multidisciplinary groups to identify significant water issues on the island.

Using pieces of driftwood and other jetsam, they create three-dimensional conceptual models in the sand to explore these issues and their biophysical, social and political consequences.

Concepts of engineering, groundwater hydrology, aquatic ecology, planning, anthropology, law and economics are woven through discussions of integrated, sustainable water management.

In this beautiful island setting water industry professionals from all over the world embark together on the exciting and challenging journey of integrated water management for the future.



2010 IWC students at Stradbroke Island field trip

# Integration modules

Integration modules strengthen the broad integrated water management framework introduced in the foundation modules by giving students a deeper understanding of key content areas.

## Compulsory modules

### Catchment and aquatic ecosystem health

Challenges in sustainable management of aquatic ecosystems, using methodology of hydrological regimes and environmental flows, and principles and practical tools for implementing riparian restoration projects

### Water planning and economics

Roles and responsibilities of various water management stakeholder groups, using practical tools for effective water planning, and principles and frameworks governing water economics and finance

## Elective streams

Students choose one of three specialised streams:

- International development
- Water, land and people
- Urban water

Each stream comprises two specialist modules. All students integrate and apply knowledge gained in modules through the same problem-based learning assignments (PBLs), two of which are individual and two of which are undertaken in multidisciplinary teams.

### International development modules

- Capacity building and community development (summer semester, conducted in Thailand)\*
- Water and sanitation

### Water, land and people modules

- Water and agricultural landscapes
- Collaborative planning

### Urban water modules

- Designing urban futures - climate, water and sustainability
- Urban metabolism - resource and energy recovery systems

\* Additional costs involved

Please note modules might slightly change. Please check our website [www.watercentre.org/education](http://www.watercentre.org/education) for latest information.

## Problem-based learning projects

- Group project: Development of a city climate change adaptation water strategy
- Individual project: Critical assessment of Australian integrated water management learnings and application in a developing country context

### Western Australia field trip

IWC flies students to Western Australia for a two-week program to study water issues with the University of Western Australia.

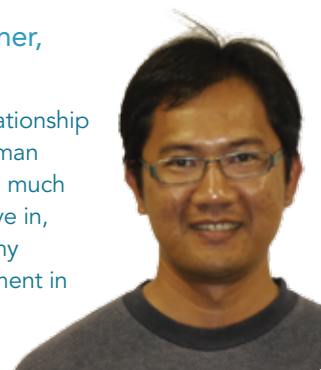
Students explore aquatic ecosystem health and social, environmental and economic consequences of water planning through field work, lectures, and group and individual work.

“The field work opportunities and the ability to work with world-class staff from the University of Western Australia and other local experts, the hospitality of the people and the beauty of the region make this trip an enjoyable and very worthwhile educational experience,” said Dr Peter Oliver, IWC Senior Lecturer.



### Phearak Svay Development Practitioner, Cambodia

Understanding the close relationship between ecosystem and human health makes me appreciate much more the environment we live in, which in turn will influence my approach to water management in the future.



## Specialisation project

Students undertake self-directed project work to consolidate and apply the concepts, principles and methodologies they have learned in the course.

Students select a specialisation area or industry placement that is interesting and valuable to their professional development. They work closely with supervisors and conduct their projects in Australia or overseas. The following case studies are examples of student research projects.

### Wastewater management feasibility study for Nauru

Kasenga Hara – Civil Engineer, Zambia

Kasenga's research project focused on reduction of groundwater contamination through cost-effective sanitation on the tiny island of Nauru in the Pacific Ocean, where chronic diarrhoea is up to twice as prevalent as in surrounding countries.

Kasenga considered technical and non-technical options and their effects on environmental and social conditions in Nauru.

His study recommended household level double compartment septic tanks in the region 0-24m above mean sea level, composting toilets in the regions over 24m above Mean Sea Level as there was limited unsaturated sandy soils to support safe disposal of wastewater, institutional and policy frameworks which promote sound wastewater management, and information programs to overcome restrictive social barriers and myths, which prevail on the island.



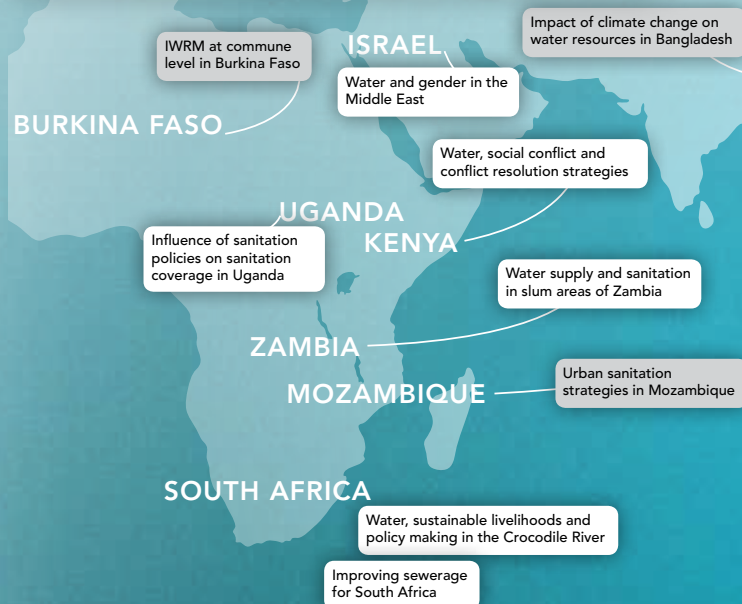
### The challenge of sustainable rural water supply in East Timor

Janina Murta – Environmental Engineer, Portugal

In East Timor, only half the rural population has access to improved water supply, and the sustainability of rural water supply schemes is still a major challenge.

Janina conducted field research in East Timor with the AusAID-funded Rural Water Supply and Sanitation Program (RWSSP), investigating sustainability issues in a case study of a water supply system.

Using a framework which considers five dimensions of sustainability – social, institutional, financial, technical, and environmental – to analyse the system, the research highlights a number of sustainability aspects relevant for the development of the country's rural water supply sector.





# IWC Water Leader Scholarships

Every year the International WaterCentre offers full and partial tuition Water Leader Scholarships for full-time and part-time students to study the Master of Integrated Water Management.

IWC Water Leaders manage water in an integrated way. They come from all over the world, but they share a common passion - to make a real difference in the world, for the environment and for people.

IWC Water Leaders work in teams, within the water industry and in the broader context of community. They have a vision which sees the whole picture of water management as well as its separate parts. They conduct international dialogues between nationalities, cultures and professional disciplines. They tackle inequalities and injustices in the world while solving water issues.

## Entry requirements

- A completed undergraduate degree in a related field of study from an internationally recognised institution
- Demonstrated English language proficiency
- Two years practical experience in a related field

## Apply for the scholarship and program

For IWC Water Leader Scholarships and other financial aid options, please check our website:

[www.watercentre.org/education/programs/scholarships](http://www.watercentre.org/education/programs/scholarships)



# Practical information

## Entry requirements

- A four-year undergraduate degree in a related field of study from an internationally recognised institution
- Appropriate academic English language skills (IELTS score 6.5, overall TOEFL 570) as demonstrated by an officially recognised test of English language proficiency (see [www.uq.edu.au/international/language-requirements](http://www.uq.edu.au/international/language-requirements))
- Practical experience in a related field is preferred

## Apply

[www.watercentre.org/education/programs/apply](http://www.watercentre.org/education/programs/apply)

## Program costs

[www.watercentre.org/education/programs/costs](http://www.watercentre.org/education/programs/costs)

Student fees include costs of most field trips and funding for professional development.

## Important dates

The program begins in semester one each year. There is no mid-year intake.

Semester 1: February–June

Semester 2: July–November

Closing dates for international applications

Category 1 and 2 countries: 15 November of the previous year

Category 3 and 4 countries: 15 October of the previous year

## Living in Brisbane

Enjoy the benefits of living in one of Australia's most attractive and cosmopolitan cities. With a population of two million, Brisbane offers a safe, friendly, multicultural environment with a subtropical, outdoor lifestyle.

## CRICOS codes

The University of Queensland: 00025B

Masters 059263A | Diploma 059261C | Certificate 059262B

## Contact us

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### Jeff Goldberg Water Resource Specialist, USA

Brisbane is true to its reputation as Sunshine Capital of Australia. The weather here is gorgeous 9 days out of 10, and everyone is so active and friendly.



Southbank beach, Brisbane



# About IWC

## Integrated approach to water management

In the complex world of climate change and population growth, water professionals can no longer focus on a single aspect of water management. Solving water-related problems requires technical and scientific expertise and greater understanding of environmental, social and political factors.

## The International WaterCentre

The International WaterCentre (IWC) provides education and training, applied research and expert services to promote a whole-of-water-cycle approach to integrated water management around the world.

## Our strength is in collaboration

The IWC is a joint venture of four leading Australian universities with national and international networks, providing a breadth of expertise and experience rarely found in a single organisation.

## What makes us unique

The three areas of IWC business—education and training, applied research and expert services—are intricately linked and draw from each other to promote best practice in integrated water management.



### Huda Almaarofi Microbiologist, Iraq

I really want to learn practical skills, not only theory.



# Benefits of the program

## Qualification from four leading universities

Students enrol at The University of Queensland (Brisbane), which hosts the program. Students are taught by lecturers from all four International WaterCentre member universities and upon graduation receive a co-badged qualification.

Two of our member universities are ranked in the top 200 Times Higher Education World University Rankings 2010-2011.



## Professional development

IWC offers Graduate Diploma and Masters students up to \$1,000 towards conferences, workshops and professional development courses, to give students opportunities to network with water professionals and learn about latest practice in integrated water management.

In past years students have participated in:

- Riversymposium
- Landcare Conference
- Meeting the Challenge in East Asia and the Pacific
- Most Significant Change
- Creating Water Sensitive Cities

## Networking

Students have access to IWC's international and national water sector contacts through networking opportunities such as dinners, symposiums and conferences, industry and academic visits and other formal and informal events.

These contacts can be used to find suitable third semester projects and employment opportunities.



IWC students study seagrass in Moreton Bay, Queensland



## Cameron Davidson, USA

IWC Master of Integrated Water Management  
Research project - Water and gender in the Middle East



As a non-Jewish and non-Palestinian Californian, I grew up thinking the Israeli-Palestinian conflict was incomprehensible. However, for the research component of my Master of Integrated Water Management, I had the opportunity to be a research intern at the Arava Institute for Environmental Studies (AIES) in Israel.

I worked with four Bedouin communities on water scarcity and gender issues. By examining water management as a common denominator, I was able to understand the integration of gender, development, and modernisation in Bedouin communities.

But the experience expanded far beyond my research objectives – living and working with Israelis, Palestinians, Jordanians and other internationals exposed me to many different perspectives and made me aware of issues I once thought of as inconceivable.

Being part of AIES' diverse community, I learned to listen, speak and hope for change. Although I now live and work in Australia, I will forever feel a connection to the Middle East.

Through the International WaterCentre's Master of Integrated Water Management program, I gained an exciting opportunity to learn about water management, the Israeli-Palestinian conflict, and I must admit ... myself.

Front cover: Janina Murta,  
IWC Alumnus from Portugal



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This brochure was compiled in 2011. Information in this brochure was accurate at the time of printing. Please note that details are subject to change without notice.

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