



Orange-Senqu River Basin

Orange-Senqu River Commission Secretariat
Governments of Botswana, Lesotho, Namibia and South Africa

UNDP-GEF
Orange-Senqu Strategic Action Programme
(Atlas Project ID 71598)

Capacity Development Activities

Technical Report 17
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UNDP-GEF
Orange-Senqu Strategic Action Programme

Capacity Development Activities

This draft report has been compiled by
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with contributions from the ORASECOM Secretariat, the UNDP-GEF Project and utilising
previous work of ORASECOM and its ICP supported projects.

This report has been issued and amended as follows:

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Project executed by:



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1. Background

The UNDP-GEF Project's design called for reviewing of options for improving the technical and managerial capacity of water resources practitioners in the Orange-Senqu Basin, initiating capacity development activities as appropriate, and particularly involving junior and mid-career water professionals in these capacity building activities. This report provides a way forward regarding capacity development for ORASECOM and water resource practitioners in the basin. The objectives guiding this technical report are:

- Improving the knowledge of water resource practitioners through sponsored course participation.
- Encouraging cooperation and initiating science networks among universities in the basin States.
- Providing a platform for ORASECOM science to be presented through courses.

In 2009 the ORASECOM Capacity Building Programme (CBP report) was prepared. The report's authors first identified a set of thematic areas to be covered by capacity building to ensure that the relevant individuals and teams supporting ORASECOM could fulfill their specific mandates. Those thematic areas were:

- Taking measures to determine the long term safe yield of the water resources of the Basin;
- Ensuring the equitable and reasonable utilisation of the Basin's water sources;
- Facilitating investigations and studies related to infrastructure on the Basin's river systems;
- Promoting the objectives of the ORASECOM Programme;
- Raising awareness and promoting improved water quality and aquatic ecosystems;
- Improving contingency planning for emergencies;
- Enhancing the regular exchange of data and information related to water resource management; and
- Improving negotiation and dispute resolution skills.

Next the team constructed a Training Needs Assessment (TNA) process aimed at covering the themes. This TNA included a TNA questionnaire and workshop based sessions. The results obtained from the completed TNA questionnaires' and the work sessions were subsequently used to rank the thematic areas according to priority. Identified priority areas are:

- First priority - critical areas:
 - Promoting the objectives of the ORASECOM Programme;
 - Taking measures to determine the long term safe yield of the water resources of the Basin;
 - Improving negotiation and dispute resolution skills.
- Second priority - important areas:
 - Ensuring the equitable and reasonable utilisation of the Basin's water sources;

- Enhancing the regular exchange of information related to water resource management;
 - Raising awareness and promoting improved water quality and aquatic ecosystems;
 - Facilitating investigations and studies related to infrastructure on the Basin's river systems;
 - Improving contingency planning for emergencies
- Third priority - optional areas:
 - General training needs linked to lobbying/advocacy and good governance.

The CBP report went into detail regarding: (i) the results of the TNA; (ii) specific suggestions related to training components per identified theme; (iii) approaches to training (adapt off-the-shelf training activities versus developing new training activities); (iv) training participants, potential training providers and estimated costs. The following matrix summarises CPB identified themes and the training components, target participants and recommended training approaches associated with them.

Table 1. Thematic areas for capacity development

<i>Themes</i>	<i>Training components</i>	<i>Targeted participants and associated professional level</i>	<i>Recommended training approaches</i>
Objectives of the ORASECOM Programme	ORASECOM Agreement, vision and mission statement, functions, ORASECOM Programme components	Introductions targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals. Introduction for stakeholders (i.e. catchment management agencies)	In-house seminars
Determining Long Term Safe Yield	Data management. Integrated Water Resources Management: IWRM principles, management, development. Surface water hydrology; water quality management. Water conservation and demand management. Catchment management. Groundwater hydrology. Environmental flows. Environmental monitoring and reporting. Basin modelling, decision support systems.	Introductions and specialist courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals. Introduction for stakeholders (i.e. catchment management agencies)	Specialist level courses, provided through universities, consultancies.

<i>Themes</i>	<i>Training components</i>	<i>Targeted participants and associated professional level</i>	<i>Recommended training approaches</i>
Negotiation and dispute resolution	General principles of international water law. Legal processes, instruments and mechanisms. Negotiation skills, assertiveness training. International dispute resolution – legislation and mechanisms.	Specialist courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals (specialist level) Introduction for stakeholders (i.e. catchment management agencies, specialist level).	Specialist level courses, provided through universities, consultancies.
Reasonable and equitable utilisation of water resources to support sustainable development	Principles of sustainable development, ecosystem approach. Climate change impacts and adaptation. International water law. Environmental management principles environmental, water and related legislation in Basin States. Bi- and tri-ateral agreements. SADC protocols.	Introductions and specialist courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals (specialist level) Introduction for stakeholders (i.e. catchment management agencies, specialist level).	Develop intro courses in-house. Specialist level courses, provided through universities, consultancies.
Exchange of data and information, public participation, corporate communication	Presentation skills and public speaking. Facilitation skills. Public participation. Written communication, report writing, science writing. Computer skills, desktop publishing.	Specialist courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals (advanced level) Introduction for stakeholders (i.e. catchment management agencies, intermediate level).	Specialist level courses, provided through HR consultancies.
Prevention of pollution, control of aquatic weeds	Prevention of pollution. Resource based approaches. Resource management strategies. Remediation strategies and tools. Resource monitoring, quality objectives. SEA, EIA	Specialist courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals (intermediate level) Introduction for stakeholders (i.e. catchment management agencies, intermediate level).	Specialist level courses, provided through universities, consultancies.

<i>Themes</i>	<i>Training components</i>	<i>Targeted participants and associated professional level</i>	<i>Recommended training approaches</i>
Contingency planning for emergencies	Emergency preparedness Risk assessment Flood forecasting and management.	Introductory courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals (intermediate level) Introduction for stakeholders (i.e. catchment management agencies, intermediate level).	Introductory level courses, provided through universities, consultancies.
Lobbying, advocacy, good governance	Lobbying and advocacy, associated methods and tactics, ethical aspects. Principles of good governance. Human rights, public administration, effective and responsive provision of Policy development and implementation.	Introductory courses targeting ORASECOM Commissioners Task Team members and staff associated to the Secretariat. Introduction for water resources professionals (intermediate level) Introduction for stakeholders (i.e. catchment management agencies, intermediate level).	Introductory level courses, designed to ORASECOM requirements, provided through universities, consultancies.

Supported by ICP projects under ORASECOM as well as by other organisations some capacity development activities were conducted since 2009. For the most part this has been in the format of workshops concerning ORASECOM's mandate, institutional development, as well as potential scope, development and implementation of the Orange-Senqu IWRM plan. In addition courses concerning international water law, negotiation and dispute resolution, as well as on basin modelling and decision support systems, and water quality management were provided. Thus it can be said that capacity development has been on-going in the last several years, but it would be appropriate to compliment and reinforce those activities, in particular with locally (regionally) provided training resources.

2. Alternatives for Capacity Development

2.1 Training Providers

The CBP report favored a variety of means to develop training to meet the identified needs from designing courses to organising the delivery of “off-the-shelf” courses. There are at least five possible off-the-shelf alternatives and training providers: CapNet, UNESCO – IHE, WaterNet, IW Learn and FETWater (and follow on initiatives).

This report recommends that the ORASECOM with the support of UNDP-GEF Project enter into an arrangement with at least one of these five alternative providers to move forward the capacity development of water resource practitioners of the basin (region).

Cap-Net

Cap-Net is UNDP’s global network to strengthen capacity building at the local level towards sustainable management and development of water resources and improved access to water supply and sanitation. Cap-Net is made up of a partnership of autonomous international, regional and national institutions and networks committed to capacity building in the water sector. They have accumulated 7 years of experience of capacity development. In its newest phase the Cap-Net programme intends to deliver:

- Capacity development to implement the IWRM approach in the context of a changing climate;
- Good quality training materials on water resources management and climate change that brings in local and international knowledge and are scaled out across the world;
- Actions that address livelihoods of the poor by improving social equity in water resources management and developing resilience to climate change;
- Improved impact and coherence of international capacity development activities on water through partnerships with local level networks of capacity builders and strong links with international organisations;

One of Cap-Net’s major partners in Africa is WaterNet which has been active in conducting capacity building courses in water management. Cap-Net’s primary function appears to be that of preparing training materials for courses in water management that will be conducted by their partners. Cap-Net proposes to train 25 trainers from partners during its next phase of activities. These people will carry forward training courses for others most likely using Cap-Net materials. Course materials are available at Cap-Net’s website.

Cap-Net would not be useful in achieving any of the objectives earlier. Cap-Net does not offer courses for water resource practitioners. They support other organisations' projects with limited training and then they might train practitioners.

Contacts: 491, 18th Ave, Rietfontein, Pretoria 0084, South Africa
website: www.cap-net.org

UNESCO-IHE

The UNESCO-IHE Institute for Water Education was established in 2003. It carries out research, education and capacity building activities in the fields of water, environment and infrastructure. The Institute is based in Delft, the Netherlands, and is owned by all UNESCO member states. The Institute is the largest water education facility in the world, and the only institution in the UN system authorized to confer accredited MSc degrees. The mandate given by UNESCO to IHE is to: strengthen and mobilize the global educational and knowledge base for integrated water resources management; and contribute to meeting the water-related capacity building needs of developing countries and countries in transition. Within this mandate, the mission of the Institute is to contribute to the education and training of professionals and to build the capacity of sector organisations, knowledge centres and other institutions active in the fields of water, the environment and infrastructure in developing countries and countries in transition. UNESCO-IHE does not seem to conduct off-campus courses.

The development and implementation of customised training courses on demand is one of UNESCO-IHE's core competencies. Short courses can be arranged to upgrade the knowledge and skills of senior experts, to refresh their knowledge base or to provide exposure to applications of conventional, modern and new technologies. UNESCO-IHE also offers special training courses to groups facing specific problems at regional or national levels, such as transboundary issues involving water, the environment or infrastructure.

UNESCO-IHE would not be of assistance in accomplishing any of the objectives identified in section one. UNESCO-IHE is located in the Netherlands. Their focus is on-campus training for professionals in the water sector who have undergraduate degrees. They do not have regular short courses available in the region. They do offer MSc programmes.

Contacts: UNESCO-IHE, Westvest 7, 2611 AX Delft, The Netherlands
website: www.unesco-ihe.org, email: info@unesco-ihe.org

Water-Net

Founded by 18 African institutions in 2000, WaterNet is a regional network of university departments and research and training institutes specialising in water in southern and eastern Africa. The network aims to build regional institutional and human capacity in Integrated Water Resources Management through training, education, research and outreach by harnessing the

complementary strengths of member institutions in the region and elsewhere. WaterNet member institutions have expertise in various aspects of water resources management and are based in southern and eastern Africa. They offer an MSc in IWRM and special short courses. The last listing for courses was for 2010. There don't seem to have been any courses offered during 2011 or at least they don't list any on their website. The courses presented in 2010 were:

- International Training Programme in Integrated Water Resources Management for the Zambezi Riparian Countries
- Understanding Ecosystem Services in Southern Africa
- Regional Training Course On Gender Mainstreaming and Gender Responsive Budgeting in IWRM

Countries with organisations included among WaterNet Members are: Angola, Botswana, Democratic Republic of Congo, Kenya, Lesotho, Malawi, Mauritius, Mozambique, Namibia, South Africa, Swaziland, Tanzania, Zambia and Zimbabwe. Of the 63 WaterNet Member organisations, 23 are in basin States.

WaterNet, in a very limited fashion could assist with the first and second of the objectives in section one above. However, their focus seems to be academic, students, rather than water resource practitioners. WaterNet offers a few short courses, apparently about three per year. None carry university credits. There is no evidence on their website that they will offer any short courses in the up-coming year. Their major learning initiative is an MSc programme with six participating universities including the University of Botswana and the University of Western Cape.

Contacts: WaterNet Secretariat, PO Box MP 600, Mount Pleasant, Harare, Zimbabwe
website: www.waternetonline.org

IW: Learn

The GEF IW: LEARN is a programme that promotes experience sharing and learning among GEF International Waters projects and the country officials, agencies, and partners working on them. IW: Learn's objective is:

To strengthen global portfolio by experience sharing and learning, dialogue facilitation, targeted knowledge sharing and replication in order to enhance the efficiency and effectiveness of GEF IW projects to deliver tangible results in partnership with other IW initiatives.

Their website serves as the knowledge hub for GEF IW: LEARN and contains an extensive collection of resources and links to other water portals, experiences, and materials for the portfolio.

Among the GEF supported project related services provided by IW: Learn are:

- WWW.IWLEARN.NET. (website) is a content management system supporting knowledge sharing in the GEF IW portfolio. It contains project-related information, contacts, documents (e.g. case studies, Transboundary Diagnostic Analyses, Strategic Action Programmes), events and news syndication feeds. Services like vacancy announcements, blogs, email lists and IW project website archiving are provided. Digital outputs from GEF IW Conferences, guidance materials and products of GEF IW: LEARN or water-related learning are freely available.
- Training and technical support help for projects, create or upgrade websites to improve information management. Services include website development, hosting, establishment, facilitation, use of the GEF IW: LEARN website toolkit, and specialized assistance in developing and deploying tools such as GIS and visual data or graphics.
- Development and delivery of technical workshops to address common capacity building needs for groups of GEF IW projects and their partners, with a focus on transboundary ecosystems (rivers, lakes, groundwater, Large Marine Ecosystems, coral reefs) and priority governance and management topics, including public participation, economic valuation, IWRM, payment for ecosystem services, information management and environmental flows.

IW-Learn would not assist the accomplishment of any of the objectives set out in section one. IW-Learn is limited to supporting GEF projects. They do not provide the kind of junior officer/middle management professional or water resource practitioners that is required in the region. Any training that they do provide would require development.

Contacts: GEF IW: LEARN c/o UNDP Bratislava Regional Centre
Grosslingova 35, 81109 Bratislava, Slovakia
website: <http://www/iwlearn.net/>, email: info@iwlearn.org

FETWater (and follow on initiatives)

The Framework Programme for Research Education and Training in Water (FETWater) was a programme that sought to support training and capacity building networks in integrated water resource management in South Africa. FETWater was established in collaboration between the Department of Water Affairs (DWA) of South Africa, the United Nations Educational Scientific and Cultural Organisation (UNESCO), the Flemish Government, the Water Research Commission (WRC) of South Africa and numerous education and training providers in South Africa. North West University (NWU), University of Johannesburg (UJ) and Nelson Mandela Metro University (NMMU) formed the network of training providers under the aegis of FETWater. The universities set out to design university-based modularized training for the purpose of training middle-level water resources management staff. In the end FETWater was stillborn although its website is remains functioning, it however lead to follow on initiatives. UJ was able to put together a modularized MSc programme in rivers and wetlands that is presented by their Department of

Zoology. At the present NWU is also developing a modularized MSc that focuses on integrated environmental water management.

Students at any of the three universities can participate in the MSc programme of UJ (and in the near future NWU). The intention of the universities is to provide training at a professional scientific level that qualifies candidates on a nationally and internationally recognised expertise level. The objectives of the courses are to:

- Enable in-service training of civil servants at various levels (single module certificates to a Masters degree) in managing riverine and wetland ecosystems.
- Raise awareness of the value of all wetlands types and rivers.
- Ensure an understanding of the complexity of the interaction between increasing capacity to manage the diverse aquatic ecosystem types.
- Ensure that managers have an understanding of impacts and the rehabilitation of wetlands and river ecosystems.

JU modules in rivers and wetlands for 2012 and their tentative dates and sites are as follows:

- **Module 1: Functional freshwater and wetland ecology**
The aim of this course is to provide students with the relevant background information of different wetland and river types found in South Africa and the intricate interactions between the various components of these ecosystems. This will provide them with the necessary skills to engage in research and management in these ecosystems.
13-17 February 2012 (UJ, APK Campus)
- **Module 2: Water quality and pollution**
The aim of this course is to provide students with the relevant background information on water quality and pollution to evaluate the consequences that the various water users have on the environment, to support measures aimed at controlling water-related diseases, and to protect ecosystems.
5-9 March 2012 (UJ island *depending on numbers)
- **Module 3: Monitoring of wetlands and rivers**
This course is aimed at providing the students with the knowledge and skills to plan and conduct monitoring and biomonitoring surveys in rivers and wetlands as well as enabling them to interpret the results of biomonitoring surveys.
14-18 May 2012 (UJ, APK Campus)
- **Module 4: Estuaries and the near-shore marine environment**
The aim of this course is to provide the student the relevant background information on the function and structure of estuaries and the near-shore marine environment and to demonstrate the intricate interactions between the various components of freshwater and

the near shore marine environment with the focus on estuaries.

26-30 March 2012 (Tsitsikamma)

- **Module 5: Legislative aspects related to rivers and wetlands**
The aim of this course is to introduce students to the different environmental laws, which may have an influence on the use and management of rivers and wetlands. This includes international conventions, common law and other important legislative developments that will impact on water resource management.
This is a one-day course only - 14 June 2012 (UJ APK campus)
- **Module 6: Wetland and river management**
The aim of this course is to give the learner the relevant background information on policy, strategy, and management instruments that will facilitate the management of riverine and wetland resources.
9-13 July 2012 (UJ APK campus)
- **Module 7: Wetland and river remediation and rehabilitation**
The aim of this course is to provide students with the necessary information to identify factors affecting river and wetland functioning and the strategies involved in remediating these factors and rehabilitation of the systems.
13-17 August 2012 (Lajuma – Soutpansberg)

The NWU modularized MSc in Resource Directed Measures will come on line in either late 2012 or 2013. Modules currently proposed are:

- **Module 1: Background and context**
Balancing Use and Protection of Water. Designed to provide participants with a basic understanding of the overall functioning and integrated nature of inland and estuarine aquatic ecosystems.
Legal and Regulatory Framework. Intended to provide an overview of the relevant global and national (South Africa) policies and legislation related to the statutory obligation for water resource protection and management to ensure sustainable utilisation of water resources.
Public Participation. The purpose of this module section is to provide an overview of the role and the statutory obligation for public participation in the setting of resource classes.
- **Module 2: Project management and resource economics**
Project Management. The intention is to provide the necessary skills, knowledge and attitude to plan, initiate and coordinate multi-disciplinary projects/studies.
Resource Economics. Designed to provide an understanding of how and where resource economics fits into integrated water resource management.

- **Module 3: Surface and groundwater hydrology**
This module will provide an introduction to the methods and procedures for quantifying the relevant hydrological parameters associated with rivers, lakes, wetlands, estuaries and groundwater.
- **Module 4: Hydraulics, hydrodynamics**
The intent is to introduce participants to the concepts and methods of quantifying the hydraulic and hydrodynamic features associated with rivers, lakes, wetlands, estuaries and groundwater.
- **Module 5: Geomorphology**
This module will provide a working knowledge of fundamental geomorphological processes associated with inland and estuarine aquatic ecosystems.
- **Module 6: Water quality**
Intended to provide an understanding of the physical attributes and chemical constituents of natural and polluted waters and how these features determine water quality for aquatic ecosystems and human uses.
- **Module 7: Aquatic ecology**
The module will provide an understanding of the structure of biological communities and their responses to the biophysical processes of aquatic ecosystems.
- **Module 8: System operations/management options for water supply**
Designed to provide an overview of the range of management options used to provide water to towns, farms and industry.
- **Module 9: Technical integration**
Environmental flows. Intended to provide the skills and tools required to coordinate environmental flow requirements (EFR) for aquatic ecosystem types.
Combining EFRs. This module section will provide the skills and tools required to integrate EFRs for different aquatic ecosystems.
- **Module 10: Resource Directed Measures (RDM)**
The purpose of the module is to provide an overview of the procedures used to carry out an assessment of the RDMs required for a water resource under the South African National Water Act of 1998.
- **Module 11: Implementation**
Intended to provide the ability to establish monitoring and auditing mechanisms and to set operating rules for giving effect to EWRs

Study options within the UJ and proposed NWU programmes are flexible. These include accredited individual modules/short courses, which are credit-bearing towards the MSc. Interestingly, while courses are presented on-campus, arrangements can be made to present them at other venues, for example in other basin States. They require simple facilities to do this, most importantly they need a river. A short course is typically five days of class/field work with an “essay”/research paper that could be completed after the participant has returned to work. Upon completion and acceptance of the paper the participant is provided with a certificate and credits towards an MSc. The entrance requirements for the short course programme is a Bachelor’s degree or diploma in an appropriate field or appropriate work experience in aquatic ecosystems. Registration, tuition and certification cost for individual five-day short course modules will be ZAR 6,600.00 per module in 2012. Module cost excludes accommodation, meals and travel. A maximum of 10 participants will be accepted for each of the short courses presented in 2012.

The FETWater offers an opportunity to accomplish all of the objectives set out in section one. They, UJ and soon NWU, offer a full MSc program based on a set of credit bearing individual modules that degree or non-degree seeking participants may enroll in. There is the opportunity to ask them to conduct a course most anywhere in the basin if enough people enroll. There is the opportunity to bring ORASECOM science into the various models.

Contact: Dr Tahla Ross, Course Coordinator
Department of Zoology, Auckland Park, University of Johannesburg
P.O.Box 524, Auckland Park 2006
Email: fetwater@uj.ac.za; Phone: 083 700 3242

2.2 Recommendation

In determining which of the potential training providers are potentially the best fit there are several criteria that can be provided. The first, obviously, is to select for the provider that will best enable the achievement of the objectives set out at the beginning of section one. Additional criteria would be: the intended purpose or goals of the providers, types of training/education courses on offer and participants that they seek for their programmes.

The following matrix compares the providers.

Table 2. Comparison of Training Providers

<i>Training provider</i>	<i>Achievement of CDP objectives</i>	<i>Purpose of programme</i>	<i>Types of courses on offer</i>	<i>Targeted participants</i>
Cap-Net	No fit	Strengthen capacity building at the local level towards sustainable management and development of water resources.	Training of trainers.	Trainers.
UNESCO-IHE	No fit	To contribute to the education and training of professionals and to build the capacity of sector organisations.	MSc, limited courses.	MSc students and limited practioners who can travel to the Netherlands.
Water-Net	Limited fit	To build regional institutional and human capacity.	MSc, limited short courses.	Primarily students.
IW: Learn	No fit	Experience sharing and learning to enhance GEF IW projects.	Technical workshops.	Limited to GEF project staff and partners.
FETWater	Good fit	To support training and capacity building networks in integrated water resource management.	Modularized MSc programme, non-MSc seeking practioners encouraged to participate.	Students and practitioners given equal weight.

FETWater and its follow on initiatives are an obvious best choice. They offer the greatest potential for providing useful and necessary capacity development activities.

3. Implementation

3.1 Requirements and Selection

The UNDP-GEF Project would support the participation of middle-management/junior officers in the water sector in basin States to participate in module courses. The successful applicant would fulfil the following requirements:

- Live and work in one of the four basin States.
- Have graduated from an accredited university level degree programme.
- Have at least three years working experience in one of the four Orange-Senqu basin States in a water sector or water sector related government or private business position.
- Have written clearance for participation in a course by their workplace.
- Have secured acceptance to the course by the respective university
- Submit motivation letter to the ORASECOM Secretariat.

In general, the rule of “first come, first served” would be applied to the selection process with a maximum of ten slots being made available to applicants. A short interview would be conducted with applicants as part of the selection process.

3.2 Budget

An estimated budget for sponsoring the participation at 10 courses plus bringing ORASECOM related researcher into the process would look like the following.

Table 3. Budget for Capacity Development

<i>No</i>	<i>Description</i>	<i>Unit</i>	<i>Unit Costs in USD</i>	<i>Quantity</i>	<i>Costs in USD</i>
1	<i>Participation in module courses</i>				
	Module tuition fee	Per participant	825.00	10	8,250.00
	Subsistence	Per day	284.00	70	19,880.00
	Travel	Per participant	500.00	10	5,000.00
	<i>Sub-total</i>				<i>33,130.00</i>
2	<i>Researchers to present ORASECOM science in courses</i>				
	Honorarium	Per Day	600.00	10	6,000.00
	Subsistence	Per Day	284.00	20	5,680.00
	Travel	Per Person	500.00	10	5,000.00
	<i>Sub-total</i>				<i>16,680.00</i>
3	<i>Courses presented in other basin State</i>				
	Module Cost	Per participant	825.00	10	8,250.00
	Subsistence	Per participant	284.00	70	19,880.00
	Travel	Per Participant	250.00	10	2,500.00
	Lecturers honorarium	Per day	600.00	10	6,000.00
	Lecturers subsistence	Per day	284.00	14	3,976.00
	Lecturers travel	Per lecturer	500.00	2	1,000.00
	<i>Sub-total</i>				<i>41,606.00</i>
Total					91,416.00

Annex: Information for Applicants

Application and selection

ORASECOM and the UNDP GEF project will support the participation of middle-management or junior officers in the water sector in basin States to participate in up to 10 individual module short courses (10 participants equals 10 individual module courses) in rivers and wetlands presented by the Department of Zoology of the University of Johannesburg in 2012 and 2013 as well as North-West University in Potchefstroom in 2013. These short courses are accredited (SAQA) and credit-bearing towards the MSc (certificates are issued once a short course is successfully completed and assignments passed).

The successful applicant would:

- Live and work in one of the four basin States.
- Have graduated from an accredited university level degree program.
- Have at least three years working experience in one of the four Orange-Senqu basin States in a water sector or water sector related government or private business position.
- Have written clearance for participation in a course by their workplace.
- Have secured acceptance to the course by the respective university
- Submit motivation letter to the ORASECOM Secretariat.

In general, the rule of “first come, first served” would be applied to the selection process with a maximum of ten slots being made available to applicants. An interview would be conducted with applicants as part of the selection process.

Course aim and objectives

Course aim:

To provide training at a professional scientific level that qualifies candidates on a nationally and internationally recognized expertise level in managing riverine and wetland ecosystems.

Course objectives:

- Enable in-service training of practitioners at various levels (single module certificates to a Masters degree) in managing riverine and wetland ecosystems.
- Raise awareness of the value of all wetlands types and rivers.

- Ensure an understanding of the complexity of the interaction between the terrestrial environment and aquatic ecosystems.
- Increase capacity to manage the diverse aquatic ecosystem types.
- Ensure that managers have an understanding of impacts and the rehabilitation of wetlands and river ecosystems.

The FETWater brochure is available at:

<http://www.uj.ac.za/EN/Faculties/science/departments/zoology/research/Documents/FETWater%20Brochure%20Front.pdf>

Course modules

- **Module 1: Functional freshwater and wetland ecology**
The aim of this course is to provide students with the relevant background information of different wetland and river types found in South Africa and the intricate interactions between the various components of these ecosystems. This will provide them with the necessary skills to engage in research and management in these ecosystems.
- **Module 2: Water quality and pollution**
The aim of this course is to provide students with the relevant background information on water quality and pollution to evaluate the consequences that the various water users have on the environment, to support measures aimed at controlling water-related diseases, and to protect ecosystems.
- **Module 3: Monitoring of wetlands and rivers**
This course is aimed at providing the students with the knowledge and skills to plan and conduct monitoring and biomonitoring surveys in rivers and wetlands as well as enabling them to interpret the results of biomonitoring surveys.
- **Module 4: Estuaries and the near-shore marine environment**
The aim of this course is to provide the student the relevant background information on the function and structure of estuaries and the near-shore marine environment and to demonstrate the intricate interactions between the various components of freshwater and the near shore marine environment with the focus on estuaries.
- **Module 5: Legislative aspects related to rivers and wetlands**
The aim of this course is to introduce students to the different environmental laws, which may have an influence on the use and management of rivers and wetlands. This includes international conventions, common law and other important legislative developments that will impact on water resource management.

- **Module 6: Wetland and river management**
The aim of this course is to give the learner the relevant background information on policy, strategy, and management instruments that will facilitate the management of riverine and wetland resources.
- **Module 7: Wetland and river remediation and rehabilitation**
The aim of this course is to provide students with the necessary information to identify factors affecting river and wetland functioning and the strategies involved in remediating these factors and rehabilitation of the systems.

Proposed module dates and venues in 2012

- **First Semester**
Module 1: 13-17 February 2012 (UJ, Auckland Park (APK) Campus)
Module 2: 5-9 March 2012 (UJ island *depending on numbers)
Module 4: 26-30 March 2012 (Tsitsikamma)
Module 3: 14-18 May 2012 (UJ, APK Campus)
Module 5: 14 June 2012 (UJ APK campus)
- **Second Semester**
Module 6: 9-13 July 2012 (UJ APK campus)
Module 7: 13-17 August 2012 (Lajuma – Soutpansberg)

Module 1, 3, 5 and 6 will take place at the University of Johannesburg, APK Campus.

The following modules will not take place at UJ campus but will take place at other venues:

- Module 2 – UJ Vaal Island (depends on number of students)
- Module 4 – Tsitsikamma
- Module 7 – Lajuma in Soutpansberg.

Accommodation and meals related to participation in modules needs to be organised by the participant but will be sponsored by the UNDP-GEF Project.

Requirements

Entrance requirements to short courses are:

- A Bachelor's degree or diploma in an appropriate field or appropriate work experience in aquatic ecosystems.

Note: The successful completion of short courses does not automatically lead to entrance to the Masters Programme.

Registration

Documents needed for registration are:

- Official UJ application form (you can get this on the day of registration). This is if you do not have a UJ student number. For those that have been registered at UJ previously you will not need this.
- ID document
- Academic record (including matriculation exemption certificate and academic records of previous studies)
- Proof of payments for the course.

Dr Tahla Ross is the course coordination and short course registrations or enquiries related to the short courses should be done through her. Following are her contact numbers:

Dr Tahla Ross, Course Coordinator
Department of Zoology, Auckland Park; University of Johannesburg
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