

A RISK EDUCATION NETWORK



Extending Connections

Reinforcing Resilience

Update October 2017



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IRDR ICoE
Integrated Research on Disaster Risk
International Centre of Excellence



Above: BDU Undergraduate students do field research in Ethiopia

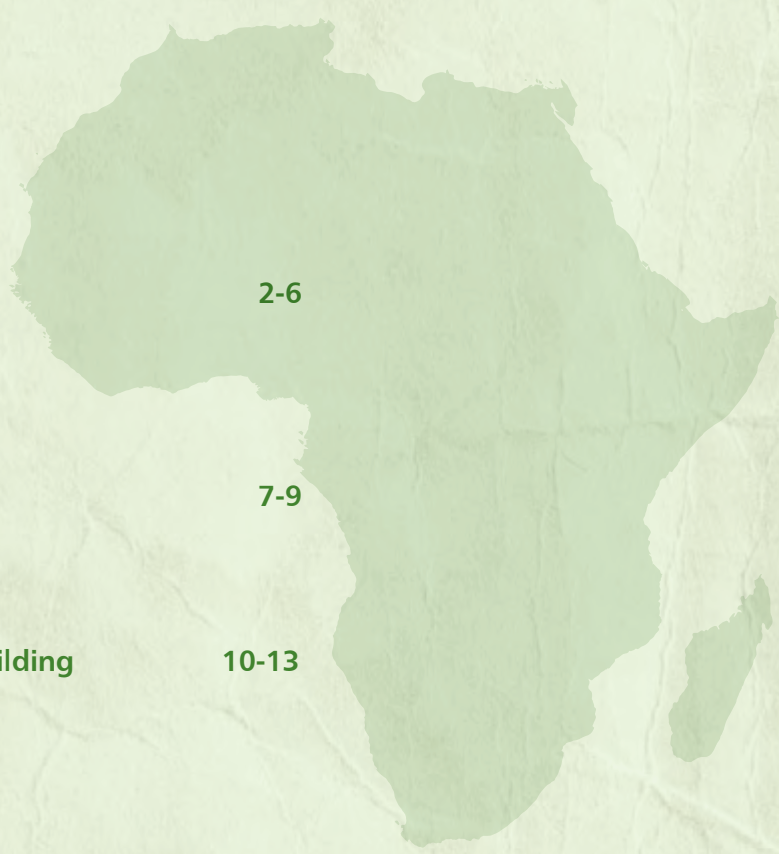
Below: GBU students learn about flood and erosion risks through field-work in St-Louis, Senegal

ABOUT THE FRONT COVER:

The front cover shows a spider web in a rain-storm. Spider silk is known for its strength and elasticity, and spider-webs for their capacity to resist hurricane-force winds and rain. A spider-web is an intricate network of scaffolding and connections that confers protection from multiple threats. In the same way, the Periperi U partnership foregrounds the value of a focused risk education network in advancing and reinforcing resilience – and its contribution to Africa and beyond.



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About Periperi U

Periperi U is an Africa-rooted and -led initiative that began in 2006 in five universities in Algeria, Ethiopia, Ghana, South Africa and Tanzania. It aims to advance risk education in Africa by mobilising university talent across regions, disciplines and language groupings.

During the past ten years, our partnership has both grown and matured, and now includes universities in Cameroon, Kenya, Madagascar, Mozambique, Nigeria, Senegal and Uganda.

Key to Periperi U is the commitment to partnership. This not only applies to university cooperation, but also to our relationships with governmental officials and civil society organisations. It is reflected in community outreach activities that are often linked to student service learning.

Since 2006, Periperi U partners have 'pushed the envelope' on integrated risk scholarship – to unlock local knowledge on African risks that was

previously inaccessible. We have also worked to build graduate capabilities in risk research that will be vital as Africa's risks become more complex and interconnected.

We are privileged to work closely with USAID's Office of Foreign Disaster Assistance as well as UNISDR, the IFRC and NEPAD, and to be active members of the African Working Group on Disaster Risk Reduction. As IRDR's International Centre of Excellence for Risk Education and Learning (ICoE REaL), we see new opportunities for collaboration both within Africa and further afield.

This short publication tells some of Periperi U's story, updating it to 2017. We invite you to contact the Periperi U secretariat or any of our partners to share feedback or suggestions on how we might improve our work.



PERIPERI U

PARTNERS ENHANCING RESILIENCE
OF PEOPLE EXPOSED TO RISKS



Makerere researchers discuss health challenges with refugees and internally displaced people in Uganda

Navigating the Abbreviations

Below we have provided a list of our partner Universities and centres, along with their abbreviations.

ABU	Ahmadu Bello University
Ardhi	Ardhi University
BDU	Bahir Dar University
CERED	Centre d'Etudes et de Recherches Economiques pour le Developpement
Makerere	Makerere University
Moi	Moi University
Periperi U	Partners Enhancing Resilience of People Exposed to Risks
RADAR	Research Alliance for Disaster and Risk Reduction
SU	Stellenbosch University
Tanà	University of Antananarivo
UBuea	University of Buea
UDM	Technical University of Mozambique
UG	University of Ghana
UGB	Université Gaston Berger
USTHB	University of Sciences and Technology – Houari Boumediene

We have also used a limited number of disaster risk and academic abbreviations. These are listed below, along with their full names.

BBB	Build Back Better
BSc	Bachelor of Science
DRC	Democratic Republic of the Congo
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
HEI	Higher Education Institution
ICoE	International Centre of Excellence
ICSU	International Council for Science
IDRR	Integrated Disaster Risk Reduction
IFRC	International Federation of Red Cross and Red Crescent Societies
IRDR	Integrated Research on Disaster Risk
ISSC	International Social Science Council
LIRA	Leading Integrated Research for Agenda 2030 in Africa
MSc	Master of Science
NEPAD	New Partnership for Africa's Development
ORC	Online Research Centre
PhD	Doctor of Philosophy
REaL	Risk Education and Learning
UNISDR	UN Office for Disaster Risk Reduction
WCDRR	World Conference on Disaster Risk Reduction

Building Capacity – Reducing Risk

The imperative that originally prompted Periperi U was a shared awareness that small, medium and large-scale disasters were seriously undermining Africa’s development. This was not only the case for high-profile emergencies. It also applied to the smaller, frequent, ‘hidden’ events that seldom attracted international attention, but that derailed local development and caused widespread hardship.

These included market and informal settlement fires as well as outbreaks of communicable disease, due to weak public health systems and poor water and sanitation services. They were also reflected in the flash floods that led to deaths and displacement as well as crop and property damage, and that resulted in livestock deaths.

Periperi U’s founding partners shared a strong conviction that Africa’s universities should become more involved in advancing disaster risk

reduction efforts. They understood that academic programmes could potentially produce graduates with new skill-sets to tackle local risks – and that new curricula could transform local and national risk management practice across the continent.

This early thinking has guided Periperi efforts for more than a decade, with partners working to ‘build bridges’ between Africa’s institutions of higher learning and the practice fields of disaster risk reduction and humanitarian action.

With courses in French, English and Portuguese, along with languages like Malagasy and Amharic, skilled human capital in the field has surged in many African countries – as has access to local risk knowledge. Both of these are central for advancing resilience in countries facing multiple threats, and for protecting development gains from natural and other shocks.

GBU Students do fieldwork on agricultural risk and food security in the Senegal River valley





Moi University staff and participants at its Nutrition in Emergencies short course for local health practitioners

Transforming Human Capital – Investing in Resilience

Higher education has long played a pivotal role in disaster risk management. This includes the management of specialist databases, establishment of natural hazards research centres and the contribution of thought leaders who have led the field conceptually, methodologically and practically.

However, the increasing complexity of current and future risks calls for an even more assertive engagement by the higher education enterprise – especially in Africa. With urgent demands for skilled risk management professionals across the continent, there are pressing needs to transform human capital in the field.

Since its starting-point in 2006, with only two disaster risk-related academic courses, Periperi U has steadily expanded its capability to meet this need. Between 2011 and 2017, the partnership's course offerings grew to 18 DRM-related programmes and 20 modules, with partner universities collectively reaching more than 3 500 students.

As its graduates increasingly take up positions in government, civil society organisations and some with international agencies, it is clear that Periperi U has enabled a massive investment in continental resilience-building. This is particularly the case in countries with low levels of skilled human capital and that face unrelenting development challenges and shocks.

What is the scale of Periperi U investment in skilled human capital in Africa?

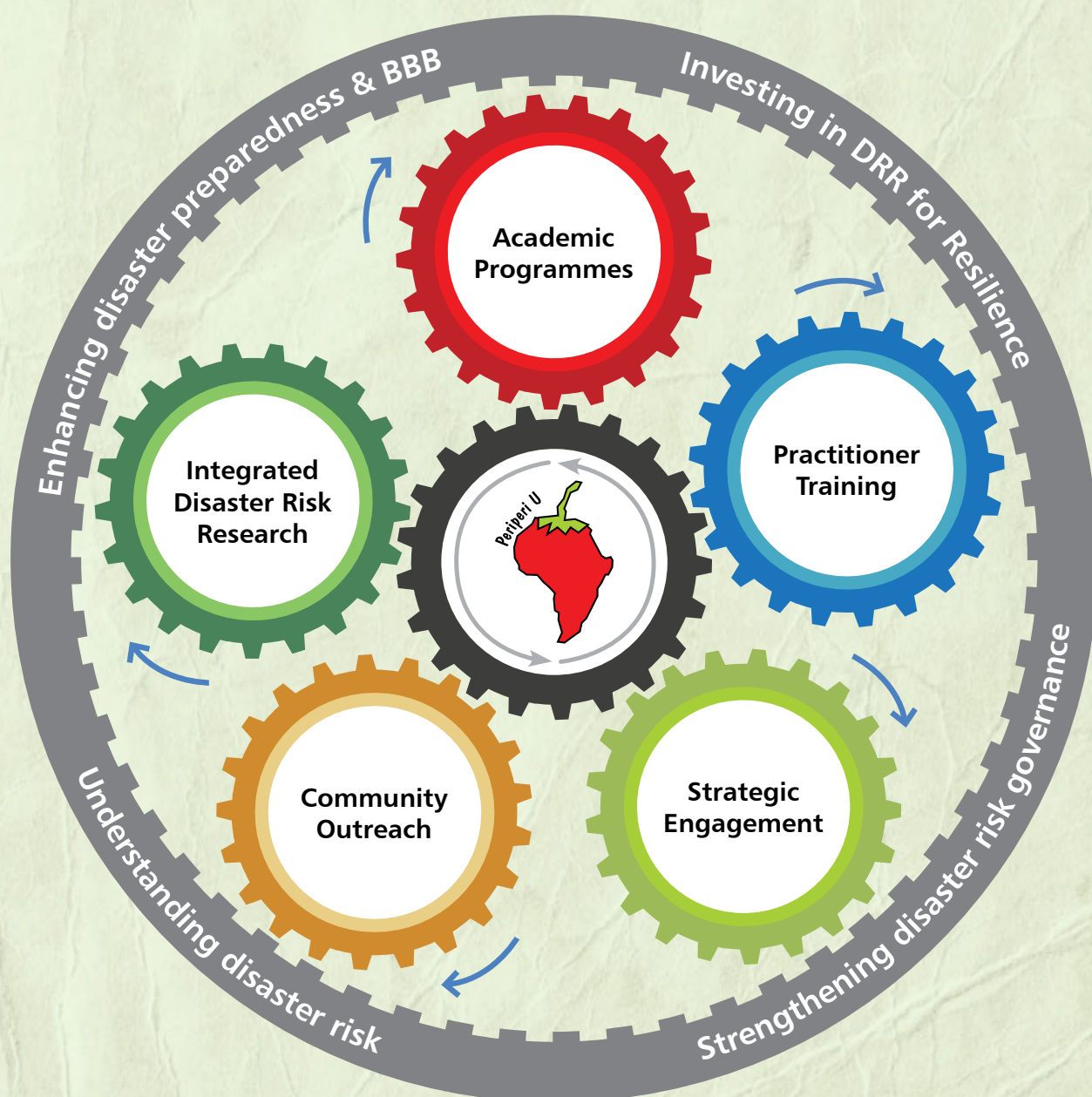
From 2011 to 2017, Periperi U investments in skilled human capital reached more than 6 300 people. This was through:

- 18 DRM-related academic programmes and 20 modules that reached 3 500 students.
- 87 DRM-related short courses that reached nearly 2 800 practitioners.
- 217 staff from the participating universities.

What is the Periperi U Capacity Building Model?

The Periperi U capacity-building model is underpinned by the assumption that HEIs are key to building skilled human capital in disaster risk reduction. It argues that DRR-related human capital can be advanced by driving the five mutually reinforcing interventions (shown as cogs below); academic programmes, practitioner training, strategic engagement, community outreach and integrated, transdisciplinary research. The model purposefully embeds university action

in local and national risk contexts, and ensures grounded connection with a wide range of community, practitioner and policy-making groups. By driving these interventions coherently, Periperi U partners expedite skilled human capital development towards the Sendai Framework's priorities of understanding risk, strengthening risk governance, investing in DRR for resilience and enhancing disaster preparedness.



The Periperi U Model – how does it work in practice?

The maps below show how Tanà markedly improved access to skilled DRM human capital from 2011 – 2017.

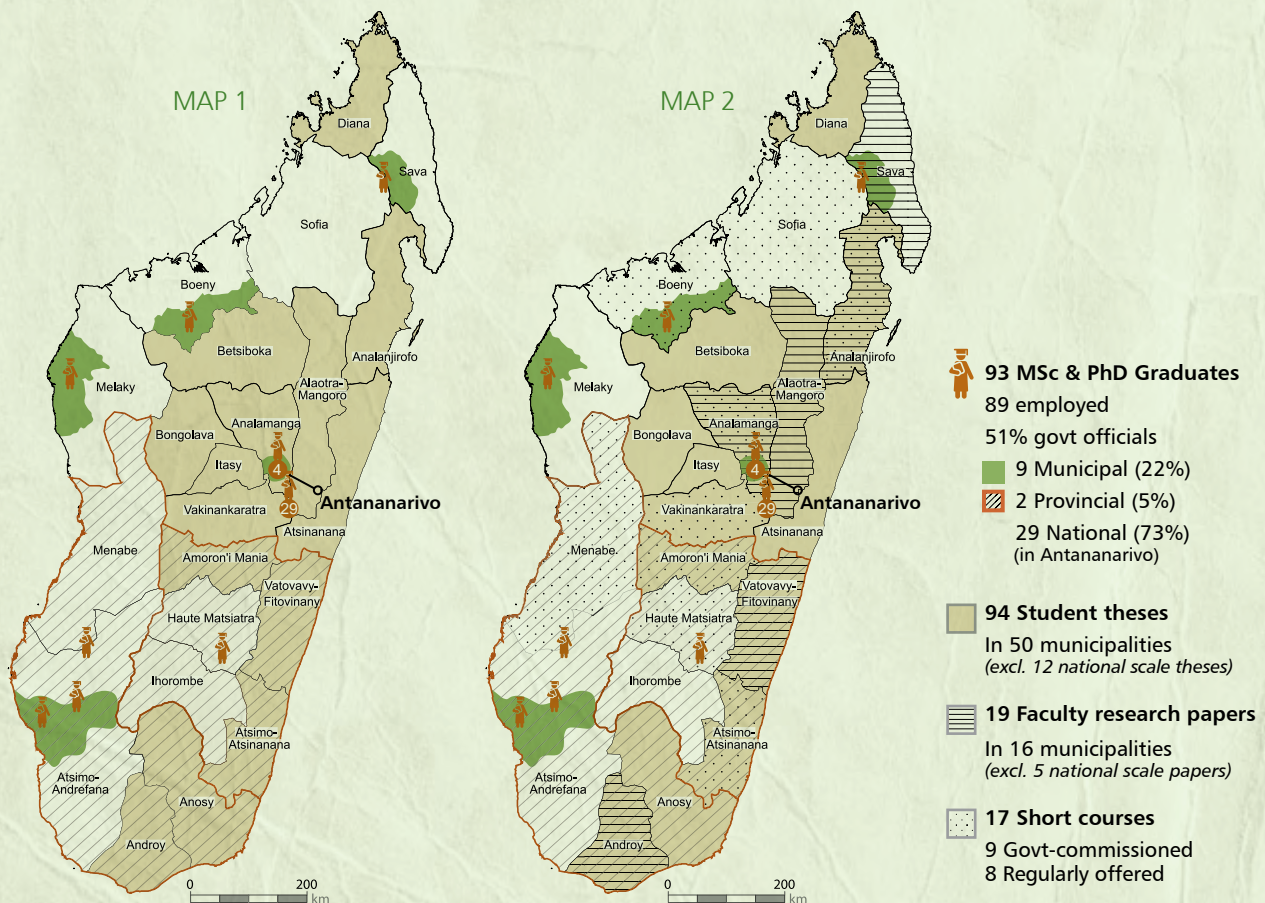
Map 1 represents the reach of Tanà’s academic programme, its MPhil in Multidisciplinary Disaster and Risk Management. The graduate icons, along with areas shaded in green and/or with diagonal lines, show the distribution of Tanà’s government-employed graduates.

The beige-shaded areas also represent sites for 94 student research projects. They show how post-graduate research both strengthens skilled human capital and produces crucial risk knowledge – often at local and community levels.

Map 2 shows how the model enables universities to extend their reach. The horizontally-striped districts represent locations for Tanà’s 19 faculty-led disaster risk research initiatives. The dotted areas show the 58 municipalities covered through Tanà’s 17 short courses that reached 427 people (including 132 women), often in remote areas.

This example shows how the Periperi U model can rapidly bring intensive investments in DRR-related human capital to some areas, as well as extend capacity-building reach through foundation-laying actions (short courses and complementary faculty research) for scaling-up over time.

These maps show how Tanà has intensively invested in skilled human capital (Map 1), then built-on and extended this through short courses and faculty research (Map 2)



Partners' academic programmes...

- 1 University of Sciences & Technology Houari Boumediene, ALGERIA**
Built Environment Research Laboratory
PhD Structural Dynamics and Earthquake Engineering
MSc Structural Dynamics and Earthquake Engineering

- 2 Gaston Berger Université, SENEGAL**
UFR des Sciences Agronomiques, de l'Aquaculture et des Technologies Alimentaires
Masters Prevention & Management of Food Insecurity Risks

- 3 University of Ghana, GHANA**
Dept of Geography & Resource Development
Postgrad Modules
 - Theories and Analytical Methods for IDRR
 - Concepts and Methods in Advanced IDRRUndergrad Modules
 - Policies and Strategies for IDRR
 - Applied IDRR in Urban Ghana

- 4 Ahmadu Bello University, NIGERIA**
Centre for Disaster Risk Management & Development Studies
PhD DRM
MSc DRM
MPhil DRM
Masters DRM
PGDip DRM

- 5 University of Buea, CAMEROON**
Dept of Environmental Science
PhD Modules
 - Current Topics in Climate Change, Resilience and Adaptations
 - Current Trends in Environmental Hazards and Industrial Risk Management
 - Advanced Topics in Surface and Groundwater ManagementMSc Modules
 - Global Commons, Natural Disaster and Environmental Risk Management
 - Groundwater, Pollution and ProtectionUndergrad (BSc) Module
 - Natural Hazards, Disasters and Climate Change

- 6 Bahir Dar University, ETHIOPIA**
Dept of Disaster Risk Management & Sustainable Development
MSc DRM & Sustainable Development
MSc DRM & Sustainable Development (Distance)
MSc Climate Change & Development
BSc DRM & Sustainable Development

- 7 Makerere University, UGANDA**
School of Public Health
Masters Public Health Disaster Management
Masters Modules
 - Nutrition in Emergencies
 - Sexual and Reproductive Health in Emergencies (full time)
 - Sexual and Reproductive Health in Emergencies (part time)Undergrad Module
 - Management of Public Health Emergencies

- 8 Moi University, KENYA**
School of Public Health
Undergrad Modules
 - Public Health – Nutrition in Emergencies
 - Environmental Health – Disaster Preparedness

- 9 Ardhi University, TANZANIA**
School of Environmental Science and Technology
MSc DRM
Masters DRM

- 10 Universidade Técnica de Moçambique, MOÇAMBIQUE**
Unidade de Produção e Gestão de Riscos de Desastres
BSc Environmental Engineering & DM
MSc Technical Education, Development & DM

- 11 Stellenbosch University, SOUTH AFRICA**
Research Alliance for Disaster & Risk Reduction
MPhil Disaster Risk Science & Development
PGDip Disaster Risk Studies & Development
Honours Module
 - Disaster Risk Science & Development

- 12 University of Antananarivo, MADAGASCAR**
Centre d'Etudes et de Recherches Economiques pour le Développement
MPhil Multidisciplinary Disaster and Risk Management
Undergrad Modules
 - Economic Valuation Tools in Macroeconomics and modelling
 - Economic Valuation Tools in Public affairs
 - Economic Valuation Tools in General Economics
 - Economic Valuation Tools in Development Economics

...from Algiers to Antananarivo



Africa 'rewrites the code' on risk curricula...

Responsive disaster risk management is a development priority that requires strong cross-disciplinary thinking and applied problem-solving skills. To build skilled human capital in this field, Africa's universities have needed to be inventive in their new disaster risk courses and programmes.

They have had to develop new DRM curricula that integrate content from the natural and social sciences as well as the health and engineering fields. These have needed to incorporate national disaster risk-related policies and international frameworks, as well as coursework for grounded, 'real-world' learning in the field.

The Periperi U model argues there is 'no one size fits all' curriculum.

In French- and Portuguese-speaking countries, course development has faced extra complexity, due to available published DRM-related knowledge being captured primarily in English-medium materials and resources.

This is why the Periperi U model argues that there is 'no one size that fits all' curriculum. It is also the reason for the consortium's courses being situated in diverse fields, including engineering, urban planning, economics, environmental science, public health and food security, and why they may be:

- closely aligned with sustainable development, or
- nested within applied disciplines, (e.g., engineering, public health, geography, education), or
- firmly anchored in the cross-disciplinary disaster risk domain, or
- taught as modules integrated within an existing academic programme.

By 're-writing the code' on risk curricula, Periperi U has helped to unlock a solution for introducing new and innovative disaster risk academic programmes in resource-constrained universities.

Disaster Management Masters and Post-graduate Diploma students from Ahmadu Bello University, Nigeria





GBU students are introduced to numerous risk related issues, including the impact of flooding on agricultural risk, erosion and food security

...and pushes the envelope on cross-disciplinary risk scholarship

Just as disaster risk management involves multi-sectoral planning and action, disaster risk scholarship is a cross-disciplinary domain. However, introducing these changes is particularly difficult in Africa, where universities are highly resource-constrained, and where new academic programmes must bridge disciplinary silos.

Since 2006, Periperi U has purposively 'pushed the envelope' on cross-disciplinary risk scholarship, with the University of Antananarivo, along with Ahmadu Bello, Ardhi, Bahir Dar and Stellenbosch Universities, all offering interdisciplinary DRM-related post-graduate programmes by 2017. More than 500 students were registered for these courses, including mature practitioners who had resumed their studies to strengthen both skills and career prospects.

At Makerere and Gaston Berger Universities, over 70 students were enrolled in Masters programmes focused respectively on public health disaster management and food insecurity risk management.

With both public health and food insecurity risks representing priority concerns in Africa, courses like these are crucial for building new skill-sets that strategically integrate disaster risk into development practice.

Even at undergraduate level, Periperi U partners have been able to introduce cross-disciplinary disaster risk management programmes. For example, in 2017, 170 students enrolled in the Technical University of Mozambique's BSc in Environmental Engineering and Disaster Management, with women remarkably comprising more than 100 of those enrolled.

Efforts like these have led to new, vibrant, academic programmes that are not only changing DRM skill-sets and knowledge, but also improving risk governance in highly disaster-prone countries.

Seizing student imagination...

High-school leavers as well as adult practitioners have seized the new opportunities to take disaster risk-related courses. After 35 students graduated with new MSc DRM degrees from the University of Antananarivo in 2011, there were 100 applicants for the 2012 intake. Similarly, in 2014, when Gaston Berger University first offered its MSc in Prevention & Risk Management of Food Insecurity Risk, there were only 30 applicants. The following year, more than 90 students applied.

Periperi U partners have also tried to accommodate different student profiles through a range of course options. For instance, Ahmadu Bello University offers both a post-graduate diploma in DRM as well as several different DRM Masters' streams. Bahir Dar University also provides students with a distance learning option to study its MSc in DRM and Sustainable Development.

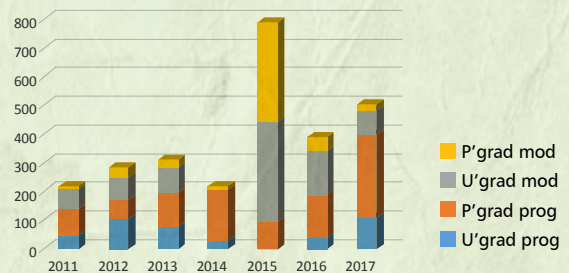
With nearly 1,000 students registered in Periperi U disaster risk-related courses and programmes in 2017, there is a striking increase in the numbers of women students. This change has been most marked in under-graduate courses, in which the proportion of registered women students grew from under 30% in 2014 to 63% three years later.

BDU's 2017 undergraduate students before their field research in Bahir Dar, Ethiopia

The rapid uptake and rising demand for disaster risk-related teaching signals the field's growing recognition in Africa. As local and national authorities step up their efforts to manage risk, they recognise the need for more highly skilled staff.

This has prompted both young people and experienced practitioners to seek out formal qualifications for a field that is now viewed as offering a credible and engaging career path.

New student enrolments in Periperi U programmes 2011 – 2017





Passionate and committed staff have been core to Periperi U, as illustrated by UDM personnel in Mozambique

...as teaching numbers expand and new programmes gain traction

The rising demand for African academic programmes on disasters and risks has brought huge pressure on available teaching resources. It has required expansion both of core teaching staff, and adjunct faculty drawn from government and other HEIs, or nongovernmental organisations and the private sector.

From 2010 to 2017, Periperi U's staff numbers increased from 71 to 217.

In response to growing student numbers, Periperi U staffing numbers grew to 217 in 2017, 49 more than the previous year, and a marked step up from the 71 total teaching staff in 2010.

The increase in human resources not only reflects increasing institutional traction, but also the progression of Periperi U's younger teaching staff through their own Masters and doctoral studies, as partners deliberately 'grow their own timber'.

In 2017, this was reflected in the graduation of staff members with disaster risk-related PhDs from the University of Antananarivo, together with Makerere, Bahir Dar and Ardhi Universities – expanding capacity both for post-graduate supervision as well as institutional succession and continuity.

Periperi U's commitment to the sustainability of the new DRM programmes is also signalled financially. While some activities are partly funded externally, most partners have committed resources directly from their central operating budgets to support the new teaching and learning programmes.

This pattern departs markedly from many other disaster risk-related capacity building initiatives which rely heavily on donor support. It underlines the value of embedding DRM-related courses within committed HEIs to increase prospects of sustainability and expansion.

Community outreach as catalyst for change...

While Periperi U partners offer DRM short courses for professionals and practitioners, they also recognise the need for university outreach to disaster-prone communities. Through their outreach and engagement, many of Periperi U's partners build trust relationships with at-risk communities and households that deepen and extend over time.

Since 2012, RADAR at Stellenbosch University has worked closely with the residents of Klapmuts, a small town 60 km inland from Cape Town. This collaboration began with a community risk assessment in Mandela City, an informal settlement within Klapmuts that RADAR carried out in collaboration with municipal authorities.

As the assessment revealed especially difficult living conditions for children, RADAR initiated an innovative follow-up activity with the Cape Winelands District Disaster Management Centre in 2013. This project, *Danger through the Eyes of a Child*, was aimed at raising awareness of local

hazards and risks for 160 Grade 7 learners so they could recognise potentially dangerous 'everyday' threats.

Periperi U builds trust relationships that deepen over time.

In 2016, RADAR's research support then extended to low-cost formal housing neighbourhoods where there were growing numbers of back-yard dwellings. As a practical service-learning exercise, Disaster Risk Studies Honours students conducted a backyard dwelling survey.

Findings from this study have not only helped the local authorities to better understand Klapmuts' changing risks. They are also informing practical solutions that will benefit backyard residents and their landlords, including the possible installation of smoke detectors to prevent deaths and injuries.

SU students carry out field research in Wallacedene, a settlement about 15 km from Klapmuts, in South Africa's Western Cape





UG's research and capacity building efforts focus on flood-prone settlements in Accra, Ghana

...with local capacity building for front-line practitioners

Disaster risk management involves a wide range of stake-holders that include specialised professionals such as architects and public health workers, as well as emergency responders and community development workers. It also relies on government workers and public officials who work with communities that face daily hardships and multiple risks. Periperi U has not overlooked these groups in its capacity-building work, recognising that these practitioners are on the frontlines of local risk management.

From 2011 – 2017, the partnership reached nearly 2 800 people, through short courses on topics as diverse as Climate Change and DRR, Seismic Design of Structures, Urban Risk, Nutrition in Emergencies, Agricultural Risk Management and Community-Based Disaster Risk Management.

Courses like these are usually developed collaboratively with other colleagues so they are streamlined with national disaster risk

reduction policies and legislation. For instance, the University of Ghana's courses reach out to national organisations like the Ghanaian Red Cross Society, Ghana's National Disaster Management Organisation, Ghana's National Fire and Rescue Service, the Environmental Protection Agency and Local Government's Environmental Health Unit. This is in addition to the University of Ghana's active engagement with many community and civil society groupings.

Similarly, Tanà's short course on *Risk and Governance, Resilience and Sustainable Development in the Regions* has been developed for local authorities in several of Madagascar's high-risk regions.

As in other countries, these training sessions not only update practitioners' own risk understandings, but also give them confidence to transfer new knowledge to their colleagues and co-workers.

Supporting emerging scientists to study Africa's risks

With its emphasis on strengthened research capacity, Periperi U has given priority to supporting and mentoring its young scientists. These efforts have stimulated a wide range of post-graduate studies on local and national disaster risks.

From 2011 – 2017, 415 Periperi U Honours, Masters and PhD students commenced disaster risk-related research projects, with 299 completing their theses by 2017. These included in-depth PhD studies by young Periperi U academic staff.

Examples of PhD-level research topics by Periperi U academic staff:

The Mismatch between Human Settlement Planning in Dar es Salaam and Disaster Risk Reduction (Ardhi University).

Household Resilience to Food Insecurity Shock Exposure, Livelihood Strategies and Risk Response Options: the Case of Tach-Gayint District, Amhara Region, Ethiopia (Bahir Dar University).

Analyse de la Vulnérabilité à la Sécheresse des Familles Paysannes Tandroy (Tanà).

Periperi U's emerging researchers are also pursuing post-doctoral risk research. At the University of Buea, a young scientist secured funding from the *Leading Integrated Research for Agenda (LIRA) 2030 in Africa* initiative for a transdisciplinary and trans-boundary study in the DRC and Cameroon.

Her two-year project aims to better understand volcanic and flood hazards and their health implications in the cities of Goma, Buea and Limbe – with the intent to develop official building codes for earthquake-resistant construction.

In Africa, there is an increasing urgency for this level of interdisciplinary risk research expertise. It is not only essential for the assessment and surveillance of disaster risks. It is also a precondition for informed risk reduction planning and action.

Participants at the LIRA workshop convened by the University of Buea in Goma, Democratic Republic of Congo





PERIPERI U

Online Research Centre

lib.riskreductionafrica.org

Making thousands of articles and documents available through our online library

▲
Since 2016, the ORC has provided students both within and outside of the consortium with free access to thousands of documents, articles and reports

...with innovations that share new risk knowledge

Understanding risk is the first priority of the Sendai Framework, and a cornerstone for effective disaster risk management. In other regions, universities have long been active risk research partners. This has helped to build stocks of locally applicable risk knowledge and to stimulate young talent to pursue active risk research careers.

Although these early risk science investments largely overlooked African researchers, the continent's scientists are now unlocking a wealth of previous unknowns on local risks. They are tackling difficult disaster risk problems through creative research collaborations, post-graduate and commissioned risk studies, and they are publishing in global peer-reviewed literature.

In response to the increasing flow of documented African risk knowledge, the Periperi U secretariat created a dedicated Online Research Centre (ORC). This was prompted when UNISDR agreed to ship 15 000 disaster publications and materials from its

library in Geneva to South Africa, rather than send them for recycling.

Africa's scientists are unlocking a wealth of previous unknowns on local risks.

Stellenbosch University's RADAR staff then sorted and digitised over 320 000 pages, while simultaneously developing a database for the scanned materials. They uploaded documents, some of which dated back to the 1970s and were not accessible elsewhere.

Between 2016, when the 'ORC went live', and August 2017, there were more than 2.3 million searches on Periperi U's ORC and 200 000 PDFs viewed.

This not only foregrounds the rising demand for accessible disaster risk information, but also the expertise, resourcefulness and sheer determination within Africa's research centres.

Unlocking new partnerships on food security...

With food security and sustainable agriculture being crucial development concerns in Africa, many Periperi U partners have prioritised these for teaching, research and outreach. From 2011 – 2017, 19% of nearly 300 completed Periperi U theses focused on drought, food security and livelihoods.

Food security represents a central theme for teaching and researching at Bahir Dar University. In 2015, this was underlined by the establishment of a dedicated Institute for Disaster Risk Management and Food Security Studies. By 2017, the institute had built a staffing complement of 17 people teaching disaster risk reduction, offering food security courses to more than 200 under- and post-graduate students.

Gaston Berger University's introduction of an interdisciplinary MSc in the Prevention and Management of Food Insecurity Risks in 2014 not only provided a much needed academic programme in Francophonic West Africa. It also laid the

foundations for closer collaboration with national authorities on food security and agricultural risk management. Since then, GBU has become a key research and training partner in the *Platform for Agricultural Risk Management*, a collaboration involving the Ministry of Agriculture and other Senegalese universities.

The introduction of grounded academic programmes in food security has provided the institutional impetus and architecture for strengthened engagement with national and sub-national authorities.

It is capabilities like these, along with Periperi U's commitment to improve food security 'on the ground' that are unlocking dynamic, new collaborations, including with NEPAD's Agriculture and Food Insecurity Risk Management Programme.

GBU students learn how soil quality affects agricultural risk in the Senegal River valley





▲
Makerere students discuss health and sanitation issues with the community leader of Avilo refugee settlement, Uganda

... and reshaping public health courses

In Africa, disaster risk reduction efforts are inextricably intertwined with public health. However, while Periperi U's public health teams have worked tenaciously to integrate the two interlinked domains, they have faced many hurdles. These include institutional constraints, disciplinary boundaries and heavy teaching loads.

The Schools of Public Health at Moi and Makerere have found inventive solutions to these challenges. One strategy has been to integrate disaster risk-related modules within existing academic programmes. These include Makerere's post-graduate module on *Mental Health and Psychosocial Issues in Disaster Situations* and Moi's module on *Community Nutrition, Food Science and Technology, Disaster Preparedness and Management and Environmental Impact Assessment*, that constitutes part of an undergraduate Environmental Health degree.

The two universities have also been creative in optimising student service learning opportunities and fieldwork. During a Makerere field trip to South

Sudanese refugee settlements in Uganda's Adjumani District, post-graduate students conducted rapid assessments of the levels of service delivery.

Similarly, through its Community-Based Education and Services (COBES) initiative, Moi University integrated a DRR component into the practical experience of its 200 participating medical, nursing, public health, pharmacy and dentistry students.

Lack of post-graduate funding is a major impediment to prospective students.

While these strategies have overcome some of the tough institutional barriers to cross-disciplinary integration, other significant obstacles still persist. The conspicuous lack of post-graduate funding not only continues to be a major impediment to prospective students, it also deters other African HEIs from developing new courses in this challenging, yet crucial field.

Tackling urban risk...

As Africa rapidly urbanises, its risk profile is changing – raising new and complex risk management challenges for local authorities. Periperi U's researchers and scientists recognise this urgency. Many are studying urban vulnerability and risk, channelling the findings to local authorities and other groups to better inform local risk management.

In 2016, Algeria's University of Sciences and Technology Houari Boumediene published *Revisiter Ghardaia (Algerie) à Travers L'inondation du 01 Octobre 2008*, examining the causes and consequences of the 2008 Ghardaia floods. The research team probed the developmental conditions that had incrementally accumulated over many years, and which, in addition to the intense rainfall, contributed to the floods' destructive impact.

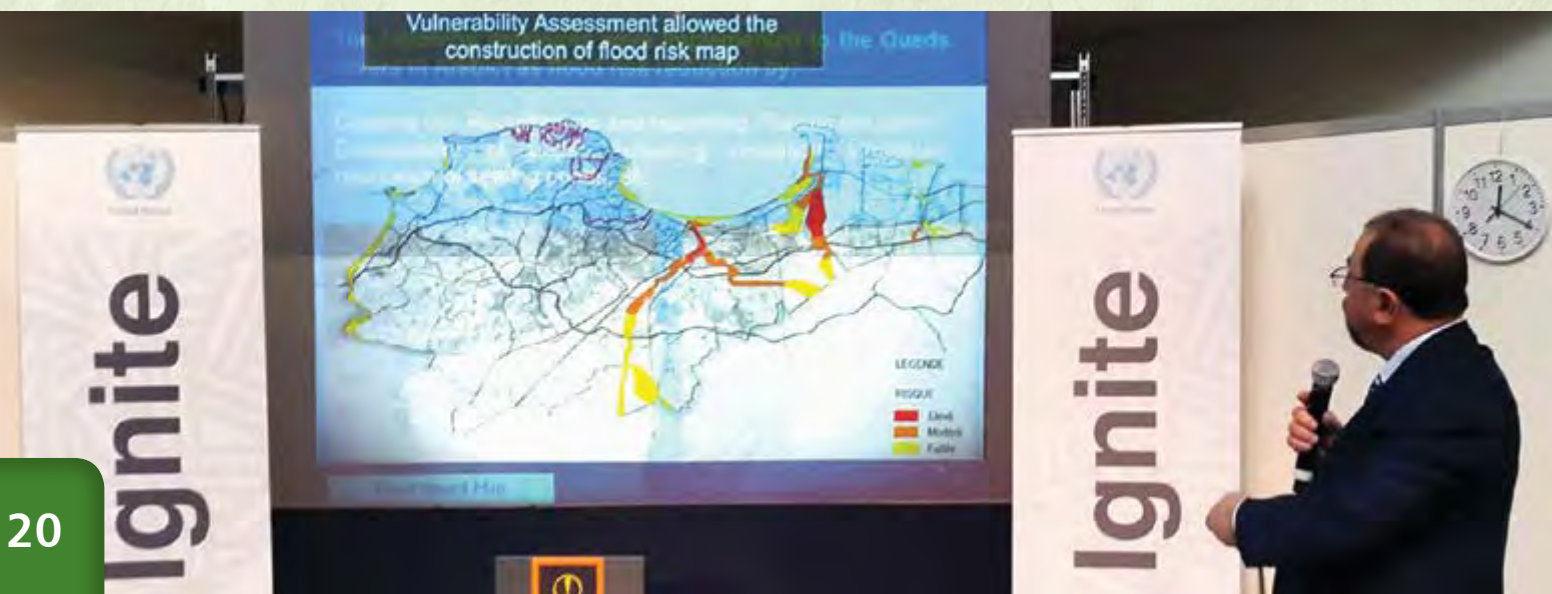
This study took forward USTHB's two decades of research on the seismic vulnerability of buildings, an imperative underlined by an earlier urban disaster, the Boumerdes earthquake of 2003.

This event claimed over 2 000 lives, injured more than 10 000 people and left 200 000 people homeless. However, detailed seismic engineering research following the earthquake revealed a host of pre-existing structural deficiencies in buildings located in Algiers and Boumerdes.

These findings provided important evidence for new building codes. However, they also prompted USTHB to offer courses for non-engineers on how to visually assess earthquake building vulnerability.

Since then, hundreds of participants have attended USTHB's short courses, including building managers, property owners, tenants and emergency services personnel. Although the courses are practical and accessible, the information on seismic vulnerability is underpinned by robust and scientific engineering research.

USTHB shares insights on flood and risk mitigation in Algeria at the Ignite Stage, 3rd WCDRR 2015 in Sendai, Japan





▲
For nearly a decade, Ardhi University has worked closely with government officials in Tanzania to improve national and local risk management

...and improving risk governance

Engaged scholarship is a central aspect of work for all Periperi U members. It anchors partner contributions in a wider social context, simultaneously enabling the co-production of risk knowledge.

Ardhi University has a long history of engaged DRM scholarship with national and local government. In addition to commissioned training and disaster planning exercises, this is reflected in research that (remarkably) informed two Disaster Management Acts.

Ardhi's initial study on *Disaster Risks and Capacity Needs Assessment for Zanzibar*, commissioned by the Revolutionary Government of Zanzibar, was the basis for Zanzibar's Disaster Management Policy of 2011. This study's findings are currently guiding the review process of Zanzibar's Disaster Management Act of 2003.

Similarly, a later study on *Disaster Risks and Capacity Needs Assessment for Mainland Tanzania* also informed the review of Tanzania's national

Disaster Management Policy and subsequent Disaster Management Act, which was enacted on 1 January, 2015.

Collaborative disaster risk research helps strengthen risk governance.

In both instances, Ardhi's disaster risk research results revealed how past disaster management policies, plans and legal instruments as well as operational guidelines had focused disproportionately on disaster response rather than DRR.

The collaborations have not only advanced risk governance. They have also strengthened the risk knowledge base and expanding research portfolio that underpin Ardhi's DRM academic programme and related short courses.

'Getting REaL' globally

HEIs have a long tradition of cross-boundary partnership and knowledge networking. These knowledge partnerships have become even more crucial for navigating today's complex and interconnected development terrain. Periperi U illustrates an effective transnational knowledge consortium that has catalysed risk reduction efforts in Africa.

Periperi U's successes are also due to its capacity to mobilise across the continent and the scope it offers for collegial learning among its members. This has enabled new formal and non-formal disaster risk-related programmes to 'jump-start' quickly. It has also produced a continental architecture for the almost seamless transfer of disaster risk knowledge across languages, disciplines and national borders. This has enhanced capability for transdisciplinary disaster risk research across the continent - especially by young, talented African researchers.

Global recognition of Periperi U's capacity was underlined by its 2014 approval as Africa's first IRDR International Centre of Excellence (ICoE), with

a focus on Risk Education and Learning (REaL). This acknowledged the value of grounded cross-disciplinary disaster risk education in building disaster risk scholarship and research capability, as well as risk management practice and governance.

What is the Integrated Research on Disaster Risk (IRDR) Programme?

Established in 2010 to address the major challenges of natural and human-induced environmental hazards, the IRDR facilitates international, transdisciplinary and cross-hazard approaches to DRR research, and to reduce the impacts as well as losses induced by natural disasters. This initiative is co-sponsored by the International Council for Science (ICSU), International Social Science Council (ISSC), and United Nations International Strategy for Disaster Reduction (UNISDR).

Opening ceremony at the 5th Global Platform on Disaster Risk Reduction in Cancun Mexico, May 2017





Tanà's CERED and Madagascar's National Office for Disaster and Risk Management strengthen cooperation through a formalised Memorandum of Understanding

Extending Connections – Reinforcing Resilience

Since its inception, Periperi U has worked to stretch risk scholarship beyond established borders. This applies to political and geographic limits, as well as language or disciplinary boundaries. It has also consciously extended risk scholarship by connecting with groups across a wide spectrum, embracing sustainable development, climate change and the humanitarian enterprise.

Periperi U's disaster risk curricula have stretched and re-oriented academic programmes by incorporating an explicit risk management perspective. The partners' risk research methodologies have also shifted to increasingly integrate approaches from natural and social sciences, as well as public health and engineering.

For more than a decade, Periperi U has woven a web of curricula, courses, graduates, skillsets, research findings and relationships that have re-framed risk management in many African countries. In the

process, it has incrementally built a cross-disciplinary, multi-lingual architecture for disaster risk education and research that spans the continent.

Periperi U's efforts have created a platform for extending risk education support within Africa. This applies to HEIs that wish to introduce DRM-related programmes as well as other organisations keen to unlock new capacity-building and research collaborations. This same architecture, through its IRDR links, has also opened the prospect of extending connections to risk research centres in the Americas, Asia, Oceania and Europe – and the possibility of innovative cross-continental collaborations.

In this way, just as the spider's web confers protection from the storm, Periperi U underlines the value of a focused risk education network in advancing and reinforcing resilience – and its value to Africa and beyond.

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Above: Since 2000 The RADAR team at SU has run short courses to train disaster risk practitioners

Below: UG researchers and community residents discuss hazards and risks in Sabon Zongo, Accra, Ghana

Periperi U represents an innovative collaboration of African universities committed to strengthening strategic capacity to reduce and manage contextually relevant disaster risks. It gives explicit priority to 'closing the gap' between Africa's institutions of higher learning, and contemporary disaster risk management policy and practice within countries and across the continent. Its members also work closely with many governmental partners as well as with bilateral and multilateral organisations and nongovernmental organisations.

The consortium provides a vehicle for disaster risk knowledge exchange across disciplines, risk profiles, national borders and regional groupings, and taps applied expertise from across Africa. It actively engages academic staff in eleven countries, working across diverse disciplines, including engineering, urban planning, economics, environmental science and public health. This diversity places it in a unique position to help develop the skilled human resources required to drive risk reduction in Africa through cutting-edge research and teaching that is contextually relevant, robust and responsive.

Consortium efforts are enabled through a small secretariat, located at the Research Alliance for Disaster and Risk Reduction (RADAR), Stellenbosch University, Stellenbosch, South Africa
<http://www.radar.org.za/>

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