

Contents

- 01 Global Ocean Governance in Action: A Tale of Two Cities - Bruno Costelini
- 02 Conference on Loss and Damage: A Fruitful and Thought-Provoking Conference - Thuli Montana
- 03 Parallels between the 2019 Notre Dame de Paris Fire & the 2015 Gorkha Earthquake – Kai Weise
- 04 Game Changer – Rachel Bickerdike
- 05 Sheep Herding in the Lake District
- 06 Visit from Dr Beth Breeze, director, Global Challenges Doctoral Centre, University of Kent, the first Early Career Academics Forum in Development/Global Challenges and Celebrating Science 2019



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Global Ocean Governance in Action: A Tale of Two Cities

Many are the challenges posed by Sustainable Development Goal 14, to 'conserve and sustainably use the oceans, seas and marine resources for sustainable development'. To tackle those, a number of institutions, mechanisms and negotiations are needed and the sites where they take place are at the very centre of my GCRF sponsored research. The central question is how scientific knowledge informs these processes. So to try and begin to answer that I set out this summer to Kingston (Jamaica) and New York (US), to follow the sessions of two of the largest forums.

In Kingston sits the headquarters of the International Seabed Authority, an intergovernmental body responsible for drawing up the regulations for deep sea mining, that is mining in the seafloor below international waters, which is considered the 'Common Heritage of Mankind'. Mining has not begun yet, although prospecting and exploration has been carried out by various nations in the past few decades. But mounting pressure from the industry (the battery industry, for instance, which depends on minerals) had sped up the process, which depends on the approval of environmental and procedural rules.

The geographical nature of the island of Jamaica means the negotiations used to occur in an isolated environment, with the same national delegates and industry representatives year after year deciding behind closed doors what to make of our commons. But the gradual opening up to observers has brought international attention to the proceedings. Halfway through the session Greenpeace arrives with their ship Esperanza anchored in the middle of Kingston Bay, visible from the corridors of the Authority.

The most current scientific knowledge is presented in side events to those observers and scaled up in the speeches given on the floor of the conference room, with some defending a halt to any future mining plans, until more knowledge about the impacts on the marine environment is known. As the Authority celebrates its 25th anniversary, a series of questions are left open. The balance between exploitation and conservation is still something to be resolved in the next 25 years.

"following international law making in action is quite a thrill ..."





New York, on the other hand, seems the ideal place for media attention and it does not disappoint. I went there to follow the third session of the BBNJ (Biodiversity Beyond National Jurisdiction), an ongoing intergovernmental negotiation to establish a treaty 'on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction', i.e., the living resources above the seabed, also in international waters.

The feel at the United Nations headquarters in Manhattan is exactly the opposite from the Authority in Jamaica. Tourists roam the place all day, following guided tours, watching the conference from small windows, shopping at the gift store downstairs. Greenpeace again, puts up artistic interventions, and later Javier Bardem shows up to lend his support to the preservation efforts. On the final days, Greta Thunberg arrives in a boat and stages a protest at the entrance with her friends from the Youth Climate Movement.

And in the middle of all this, negotiations do go on, with diplomats from dozens of countries trying to figure out how to equate exploration of marine genetic resources with scientific management tools to insure the protection of the environment, such as mandatory impact assessments, marine protected areas and transfer of technology. At the end of the conference it is clear they might need one or two further sessions to finish up an agreeable instrument.

To follow international law making in action is quite a thrill, as you can see. And when the stakes are as high as in the case of ocean governance these days, it only gets more exciting. 2020 is the year when these two negotiation processes are set to come to an end. It is also when countries will meet again, in Lisbon, in a major conference on the oceans to potentialize those efforts. Where the challenges of sustainable development and conservation meet, it is desirable that scientific knowledge works as a broker of acceptable alternatives. So far, it has been, but how it will work out in the end, only time will tell. But I'll be there to let you know. Fair winds!

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Conference on Loss and Damage: A Fruitful and Thought-Provoking Conference

The efforts to deal with climate change have proven to be challenging with numerous countries experiencing severe impacts from floods, droughts and sea-level rise. Loss and Damage (L&D) refers to the failure to adequately mitigate and adapt to climate change. Within the United Nations Framework Convention on Climate Change (UNFCCC), L&D has been a sensitive and contentious agenda item, mainly due to developing states (which are disproportionately affected by climate change) calling for developed states to compensate the negative impacts experienced from climate change.

While some progress has been made in the policy realm on L&D, it still remains inconclusive and challenging to resolve. L&D seeks to answer questions such as, how do we compensate the loss of homes or identity from climate change? What financial mechanisms need to be developed to support L&D? How do we integrate law and good governance when trying to resolve L&D from climate change? As such, researchers play an essential role in defining, measuring and providing quality evidence on understanding the various dimensions of L&D in order to support policy and decision making processes.

From 30 October to 1 November, the Lund University Centre for Sustainability Studies (LUCSUS), hosted a conference on L&D. This conference brought together researchers and policy makers interested in bridging the theory and practice divide on L&D and more holistically driving the work of the Paris Agreement and Sustainable Development Goals forward. Over the three days we engaged in critical and forward-looking discussions on the characterization, measurement and governance of L&D through ecological, economic, gender, sustainability and litigation perspectives.



As part of my Masters research at the University of Leeds, I explored how L&D is understood by youth in informal settlements of Cape Town, South Africa. This study was aimed at testing theoretical perspectives on L&D and providing empirical evidence on how youth experience and articulate L&D. Youth in this context are understudied, vulnerable to climate change and in need of adaptation support. Presenting a poster at the L&D conference and participating in the discussions enabled me to situate my study within the broader research and policy gaps identified. In 2023, countries that are signed up to the Paris Agreement will undertake a Global Stocktake on climate action. This is envisioned to allow parties to review their efforts towards implementing the Paris Agreement and strengthen the global response to climate change. One of the key take-away messages from the conference was focused on the kind of evidence researchers should be developing to inform the 2023 Global Stocktake, focusing on the need to continue reducing global emissions, increasing the adaptive capacity for the most vulnerable and minimizing L&D.

With an interest in climate justice and environmental governance more broadly, I am delighted to have been able to participate in this conference. Networking and conversing with some of the top scholars and policy makers on this topic made my experience valuable and inspiring. The issue of L&D with its cross-cutting political, economic, social and environmental dimensions still requires concerted efforts to solidify its place in the climate change negotiations.

I would like to sincerely thank the Durham University Global Challenges Research Fund –Centre for Doctoral Training (GCRF-CDT) for supporting my attendance, as well as the Lund University Centre for Sustainability Studies for hosting a fruitful and thought-provoking conference.

Phellecitus Thuli Montana

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meeting was held with ICOMOS (International Council on Monuments and Sites) France President Jean Francoise Lagneau and ICOMOS France/ICORP (International Scientific Committee on risk Preparedness) member Samir Abdulac in Paris on 13 August 2019. Discussions were also held between ICOMOS members of ICORP and ISCARSAH (International Scientific Committee on the Analysis and Restoration of Structures of Architectural Heritage) right after the Notre Dame de Paris disaster which was documented and compiled in a report dated 11 May 2019. The below report links these discussions in short to the experience of post-2015 Gorkha Earthquake response and rehabilitation in Kathmandu.

Smoke was seen rising from the roof of the Notre Dame cathedral in Paris and at 6:18 pm the alarm was immediately raised. Though fitted with the most highly sophisticated alarm system with smoke detectors, there was initial confusion about where the fire was located. At 6:45 pm the alarm was raised again while the fire had already spread over the wooden roof structure and by 7:00 pm over six hundred firefighters arrived at the site for the rescue mission. However, within an hour of their arrival at 8:00 pm the spire collapsed and the fire engulfed the entire roof structure.

On-site cleaning and emergency stabilisation work have been going on since the week following the fire. Visibly the Notre Dame fire destroyed the timber structure of the roof and central spire. Most of the restoration work done on the monument within the last few decades were focused on its architectural features. The damage caused by the fire has necessitated major restoration works and this can be seen as an opportunity to carry out research on the condition of the entire masonry structure from the 12th and 13th century.

It is considered that the craftsmanship for the rebuilding of the roof structure similar to the 12th century is still available. The traditional craftsmanship has been continued through the apprenticeship with the masters by the Compagnon du Devoir which is a French organisation of craftsmen and artisans dating from the middle age. However, we must understand that even if timber is used to rebuilt the roofing, it will be slightly different due to the way it is worked, for example the timber is sawed and not cut using traditional tools.

The newest issue that has arisen is that of lead pollution caused by the burning lead roofing. Environmental groups have submitted lawsuits against the government and the site was shut for almost a month. Lead continues to be used but only for conservation works. Safety measures are provided for those working with the material. The fire has however brought out a new threat of the lead dust settling around the entire section of the city. Higher levels of lead were found in nearby schools which has required careful cleaning to be carried out. This raises further interesting discussion in regards to what material should be used when restoring the roofing. Options that arise are to follow the example of Chartres with copper, which though expensive would be most resilient and it is now even possible to get copper that doesn't oxidize. Cheaper options would be tin or galvanized iron sheeting.

During the 19th century restoration carried out in Notre Dame by Viollet-le-Duc a new



Parallels between the 2019 Notre Dame de Paris Fire & the 2015 Gorkha Earthquake

design of the spire was introduced considering that there was no detail documentation of the earlier structure.

With the available details of Viollet-le-Duc design as well as the recent 3-dimensional scanning of the monument, there is enough documentation to reproduce the roof structure and spire if desired. However, President Emmanuel Macron made more definite statements the day after the disaster, stating that the Notre Dame would be rebuilt even more beautifully. He also stated that the construction would be completed within five years in time for the 2024 Summer Olympics that will take place in the city. The following day an international design competition was announced by Prime Minister Edouard Philippe to determine whether Viollet-le-duc's spire would be rebuilt or a new design would be chosen "adapted to the techniques and the challenges of our era". These statements have caused experts and those responsible for Notre Dame a great headache and there are ongoing disagreements over the spire's design as recently reported in the BBC news of 14th November 2019 [BBC News](#)

There is an argument that every period something new was introduced which contributed to the image of Notre Dame de Paris; the 17th century, the 18th century, so why not the 21st century? So, what would be the issues that would determine the final decision? The use of new materials such as reinforced cement concrete was considered to be a wonderful material that would last forever; however, we now know how difficult it is to maintain and restore. So, the solution must consider durability as well as cost and required time to construct. This will be greatly influenced by the various lobbies for wood, steel and concrete as well as possibly insurance policies which require three times the safety factors. The process will continue getting media coverage which will allow for general awareness. We must however also consider that it is possible to profit from this disaster by detailed research on the structure to better understand Gothic architecture.

The monument will need to be made accessible to the people as soon as possible, even if this would take a few years. This will allow people to use the religious structure, view various parts of the monument and reduce political pressure, whereby work can be carried out systematically and without hurry. This will require an overall "umbrella" covering the main roofing area with access to side walls, vaults and buttresses. The possibility of having wooden platforms below the stone vaults is being planned to provide a means of continuing research and restoration works while visitors are protected.

The comparison between the 2019 Notre Dame de Paris fire and the 2015 Gorkha Earthquake and its impact on the monuments of Kathmandu Valley addresses totally different circumstances both in respect to type of hazard and the overall scale of destruction. However, we find that there are many parallels which can be identified, circumstances which might be considered general issues, applicable to a wide range of disasters.

We note the following points:

- there is confusion about who is responsible for the monuments and who owns them;
- there has been a lack of sufficient maintenance to the monuments making them vulnerable;
- immediate response is efficient, be it through trained firefighters or involved community members;
- government policies towards rehabilitation is confused and there is little preparedness;
- initial statements by government assure people that everything will be fixed quickly;
- collection of funds is given priority even before understanding what needs to be done;
- monuments are dealt with as if they are means for political gain;
- there is little understanding for the need to carry out detailed assessments and research;
- stakeholders and communities are initially not consulted;
- there are few engineers who understand traditional structures;
- there are artisans who can carry out the required restoration work but they initially not consulted;
- there is interest for architects to show their creativity by changing historical monuments;
- to fulfil government norms and requisites, the entire procedure becomes highly complex;
- there is political pressure to show that work is progressing;
- there are different stakeholders and lobby groups wrangling for their positions;
- the discussion on building better or strengthening often goes against conservation standards;
- introducing modern technology and materials without understanding the necessity for this.

These are the issues that need to be further discussed to see which can be addressed and by what means. Some of these points are actually being promoted not only at national level but also by international organizations.



Image: Christopher Morin/Bloomberg/Getty



Image: Reuters Navesh Chitrakar

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Over the past couple of weeks, some of the GCRF cohort have been volunteering to help out at the Game Changer sessions run by the Careers & Enterprise Centre. Game Changer is a new, six-week innovation programme, using Design Thinking to generate innovative solutions to some of the problems highlighted by the Sustainable Development Goals. The programme turned out to be very popular, 250 students signed up and the students had to be split over three sessions!

Design Thinking is a process that starts with the people you're designing for and ends with innovative new solutions that are tailor made to suit their needs. By gaining a deeper understanding of the challenges posed by the SDGs, the hope is that by the end of the six weeks, students can develop tangible solutions that could work in the "real world".

In week 1, students developed an understanding of Design Thinking and how it works and were introduced to the Sustainable Development Goals. Some had never heard of this initiative by the United Nations, so it was new territory! In week 2, the topic was empathy and looking at the world through others' eyes. We also started on some top-level research, so that students could understand the key facts behind the goals they were looking at. Thuli Montana and Martin Kendah offered their support for students who were researching Good Health & Wellbeing, Gender Equality, Climate Action and Responsible Consumption & Production. They helped students to see the world from a different point of view, so that they could have empathy with the people at the heart of the problems they want to solve.

In week 3, we encouraged students to focus on a particular area of interest within their chosen goal, so that they could "re-frame" the challenge into something they can find solutions to.

Over the next three weeks, the Game Changers will begin to ideate solutions, and use Lego Serious Play to build prototypes and bring their ideas to life. In the final week, they will be pitching their ideas and exploring how they could make them a reality with the support of the Careers & Enterprise Team.

It's been an exciting ride so far, and we have been truly inspired to see the students become so engaged with the Sustainable Development Goals. They have shown real enthusiasm and passion for trying to find solutions, so we can't wait to see what they come up with! Having the involvement of Thuli and Martin has added real value and has truly enabled the students to think on a more global scale.

Rachel Bickerdike
Enterprise Manager
Careers & Enterprise

"Attending the Game changer session gave me an additional opportunity to critically think about the SDGs from a value free perspective 'without any personal bias', which I think is very beneficial in shaping my thought and actions in approaching my research questions both in my fieldwork and my writing stage" Martin Kandeh

"Participating in Game Changer reminded me of the cross-cutting and complex nature of the SDGs. It was stimulating seeing students from various departments and disciplines thinking through some of the most challenging global problems" Thuli Montana

Game Changer



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he Durham Global Challenges CDT went on a team-building retreat to the Lake District. The event kicked-off with pizzas in the Lumley Fee Bunkhouse accommodation located in the Lakeland hills and fells. The students then completed a questionnaire on Sustainable Development Goals, they found out many facts including that Bangladesh was the first country to ban plastic bags in 2002 and that the largest global employer is family agriculture. Boke Omwega explained that as a child she would visit her grandparents regularly over weekends in the country at their family farm in Kenya.

Agriculture dominates the Kenyan economy, accounting for 70 percent of the workforce and about 25 percent of the annual GDP (Gross domestic products). County Vihiga in Western Kenya is densely populated with an average household farm size of 0.4 hectares, where the land is becoming often un-economical for farming. This has resulted in a decline in food production and increase in poverty. However since the financial support from a United Nations Global Environment Facility-funded project, Scaling up Sustainable Land Management and Agro-Biodiversity Conservation to Reduce Environmental Degradation in Small Scale Agriculture in Western Kenya, which was implemented in 2018, there has been improvement for agronomic practices in eight sub-counties in Western Kenya. The farmers, the majority of which are women, have received training in best practises. The project has greatly improved farmers' incomes, due to yield increases. This project runs until July 2022 and the target is to set small-scale agriculture in the direction of a much greater sustainability, in line with Sustainable Development Goal 15: Life on Land. Click on the link to read more about tackling declining food production in western Kenya:

<https://www.unenvironment.org/news-and-stories/story/tackling-declining-food-production-and-poverty-populous-western-kenya>

The questionnaire also involved some bonus questions on sheep: the students found out that a rustler is a person who tries to steal a sheep that does not belong to him and that a sheep is cast when it has accidentally fallen over on its back and cannot get up again without help. This in preparation for the team-building task the next morning: sheep herding.

Luckily the weather was beautiful, so the students were not left standing in the rainy cold desolate mountains! Sheep herding requires a body of knowledge and skills that shepherds devote decades to learning, so it was not an easy task for the students to lead the sheep from the pen into the meadow. They had to work together, delegate and use the shepherd's crook to manage the sheep.

Sheep Herding in the Lake District



Fortunately they had substantial help from Gilly the 12-year old shepherd dog, when things went a bit astray. Martin Kandeh, whose PhD project is on strategies for managing human-animal contact in Sierra Leone, was fascinated to find out that it was mostly Gilly that trained the new young pups on how to become a shepherd's dog. Soon the pups will also learn to guide large flocks of sheep around fences, gates and fields to graze while preventing them from eating valuable crops and wandering onto roads.



Next task was to build a trebuchet capable of launching an egg in 30 minutes. Based on a medieval counter weight design, the trebuchet is a team building challenge where communication and problem solving skills are needed. This activity encouraged the teams to use a plan and review the model to develop their trebuchet. Team 2 (this team included the physics researchers) explained that the trebuchet depends on the momentum, velocity, kinetic energy and gravitational potential energy. Needless to say their design fired the egg furthest.

The day ended with a GPS – rescue mission, this involved an 8 km hike through the Lakeland Fells. The teams were informed of an accident involving a casualty, their whereabouts unknown. The team's mission was to locate (somewhere in the 300-acre site) the casualty as quickly as possible.

They were given a grid reference to input into their GPS personal navigation unit. On arriving at the grid reference, the team either had a general knowledge question or a challenging mission they needed to complete before receiving the next grid reference. Well done to team 1 for completing the mission and rescuing an SDG-member from a crashed aeroplane.

“I haven't laughed so much in ages...” Diana Misir

“sheep herding is more fun than I thought it would be!” Burag Gurden



To see video's and more photographs of the event, please check out our website:
<https://sites.durham.ac.uk/GCRF-CDT/>



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Three of the Durham Global Challenges Doctoral Centre students participated in the first Early Career Academics Forum in Development/Global Challenges, hosted by Durham University's Geography Department and organised in collaboration with the IHRR (Institute of Hazard Risk and Resilience) Postgraduate Forum. The series aims at fostering collaboration amongst three universities in the Northeast of England (Durham, Northumbria and Newcastle) by bringing together early stage academics working on the subject of Development and/or Global Challenges. The focus of this first event was broadly on (thinking critically about) the UN's Sustainable Development Goals. After the panel presentations, the students received a wide range of perspectives on their topics from discussant Professor Marcus Power (Department of Geography, Durham University) Well done to Thuli Montana, Burag Gurden and Martin Kandeh for their excellent presentations.

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Global Challenges Doctoral Centre director, Dr Beth Breeze, of the University of Kent visited Durham University to build connections, share ideas and experiences around postgraduate research seeking solutions to global challenges. Dr Breeze also provided a seminar for the Durham GCRF-CDT on Philanthropy & the SDGs: what role for private donors?



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Celebrating Science took place on 29th, 30th and 31st of October 2019, thank you to all volunteers of The Energy CDT and Durham Global Challenges CDT stall for helping out and for a great team effort!



If you have any research results, blogs or events related to the GCRF-CDT that would be of interest for the Durham Global Challenges- CDT please contact abir.van-hunen@durham.ac.uk



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Sustainable Development Goals

<https://www.un.org/sustainabledevelopment/>