

## UNESCO CHAIR ON COMMUNITY SUSTAINABILITY: FROM LOCAL TO GLOBAL

Winter 2023



## PARIS AND THE 30TH ANNIVERSARY OF THE UNITWIN/UNESCO CHAIRS PROGRAMME

In November, I travelled to France for the 30th anniversary event, which was held at the UNESCO Headquarters in Paris. Of the 850 UNESCO chairs worldwide, 500 were in attendance for the event. The atmosphere was vibrant and positive in terms of what had been accomplished so far and the future contributions of the chairs to come.

The UNITWIN/UNESCO Chairs Programme was established in 1992 to “mobilize and share the expertise of higher education institutions to address complex interdependent development challenges.” Through international collaboration, the chairs can contribute to the UN Sustainable Development Goals through education, research, and outreach. The interdisciplinary nature of the programme allows for innovations and capacity building at the community level, as well.

The theme of this conference was “Transforming knowledge for just and sustainable futures.” It was appropriate as speakers from different countries presented their perspectives on their work, as well as the challenges that the chairs will have to deal with in the future, such as the multi-crisis that we now face with climate change, pandemics, biodiversity loss and more.

Many presentations were impressive, such as the one by Professor Achille Mbembe of the University of the Witwatersrand, South Africa, entitled: “The Transformation of the Knowledge Commons: Perspectives from the Global South”. I really liked his statement about knowledge: “To whom and for what? Is knowledge a common or private good?” Considering the UNESCO Recommendations on the Definition of Science and Scientists and on Open Science, this is an important reflection to have.

With all the challenges that we are facing, it is important to develop what he labelled as “our planetary conscience.” In my case, I played two roles at the conference: First I delivered the Last Reflections from the afternoon plenary, entitled: “Responding to Multi-dimensional Crises: Implications for research” (see my reflections later in the newsletter) and I then presented in one of the parallel sessions on “Multiple Knowledge Systems for Sustainable and Resilient Societies”. My presentation entitled: “Insights from UNESCO Chairs working on Biospheres” described some of the work done by my chair, as well as a few others in Canada with BR. I especially wanted to underline the importance of working with, and for, the communities. It is a way to ensure that the actions we are doing are going to remain sustainable in the long run.

LIETTE VASSEUR

*Liasseur*



# LIAM FORUM

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In the summer, I was introduced to Raziel Zisman from Whittle Consulting and the idea of organizing an online forum called LIAM. Why? Liam, the son of Raziel, was enrolled in the Earth Science program at Brock University. In the past year, he sadly committed suicide, as he felt he had no future.

Raziel decided to do something to raise awareness and honour his son's memory by showing youth that there are many opportunities to further sustainability efforts through economic extractive activities.



Most people are against mining and fewer students are interested in going into this field. However, at the same time, smartphones, watches, computers, electric cars, etc. require rare metals that need to be extracted through mining. The importance of finding sustainable solutions in any extractive system is critical at this point, and this includes agriculture, fisheries, and forestry.

The forum had two objectives: Make students aware of career possibilities and show that mining needs a new generation of people who can innovate to ensure the environmental sustainability of the industry. The mining industry is increasingly aware of the environmental and social impacts of their processes and activities.

Over 100 speakers were invited to talk about their experiences and their ideas to improve mining conditions and to encourage young people to help find solutions. The week was intense, but demonstrated the importance of opening the dialogue on how communities can be engaged in this process. There is certainly more work to be done and this is only a start.

# EACH SUMMER CAN BE DIFFERENT

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The summer of 2022 started slowly, with low temperatures, but we were able to move forward nicely once the weather improved. The organic vineyard and our climate change adaptation projects continued, but this year we added a new component: The use of native species as cover crops.

Agricultural sustainability will require farmers to turn further towards nature-based solutions. Sustainable agriculture is crucial to adapt to climate change and help improve the health of agroecosystems. These are also important to ensure food security in the long term, while protecting the environment (including soil, biodiversity, water) and thus, rural communities. The project shows the need to find innovative solutions and will work to develop a decision tool that will help guide growers and farmers when adopting different strategies in the field.

# NATURE-BASED SOLUTION OR NATURE CLIMATE SOLUTION?

## APRIL WORKSHOP

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At the end of April 2022, I was invited to a workshop entitled “Nature-based Solutions for Carbon Sequestration,” organized by Net Zero Atlantic in Halifax, Nova Scotia. One of the organizers approached me in March to discuss the concept of Nature-based Solutions.

The organizers then invited me to present the NbS Global Standard, as most were not completely aware of this. The meeting was quite productive with presentations and round table discussions.

It was obvious that, in fact, we were talking about Nature Climate Solutions with the clear goal to increase carbon sequestration through forest planting, wetlands restoration, and agricultural practices. In addition, the issue of inclusion, especially for Indigenous peoples, was brought up. Canada has been using NbS and NCS interchangeably, but in all cases, it mainly focuses on carbon sequestration.

# ADVANCING ECOLOGICAL RESTORATION IN CANADA: SETTING THE AGENDA

## MAY 30-31, 2022

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This second workshop was organized by a group of people motivated by the importance of seeing Canada returning to the forefront regarding ecological restoration, with the support of the IUCN World Commission on Protected Areas, the Canadian Committee of IUCN, and the Canadian Museum of Nature. Canadians used to be very active in restoration. They led the development of the first national-level principles and guidelines for ecological restoration in the world, and had leadership roles in the International Society for Ecological Restoration.

The question was therefore what Canada's contribution will be during the UN Decade on Ecosystem Restoration. The major goal of this meeting was to discuss the priorities to advance the Canadian agenda, including the development of a strategy and action plan. The meeting was quite productive, and participants remained involved throughout the meeting. Now, as a “coalition of willing”, there is also a monthly meeting to advance the agenda. It was felt to be important to ensure that dots between research, practice, and policy were connected.

Among the action items, some of those involved in the meeting will draft briefing notes or develop the research agenda, while others will help with the organization of the RE3 (Reclaim, Restore and Rewild) conference, which is to be held in Quebec City in June 2023.

# CELEBRATION OF NATIONS

## EMPATHY

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The Celebration of Nations is an annual event that returned to a mainly in-person event this year from September 9-11. The gathering aims to celebrate and enhance awareness of Indigenous arts and culture, highlighting the creativity, diversity, and resilience of Indigenous peoples. I truly appreciate this event for several reasons, the most important being the continuous learning about the cultures, traditions, and history of the First Nations. Indigenous peoples in Canada have long-suffered from colonialism but also continually show resilience. Their stewardship of the land will play a crucial role in our sustainable development.

In my case, I was honoured to be part of two events. The first session was entitled: "Indigenous Plant Life Along the Laura Secord Legacy Trail." In 2021, my Chair, my graduate student, Kasia Zgurzynski, and Plenty Canada joined forces in a project that focused on producing an inventory of Indigenous plant species and identify those that would be important for botanical purposes and then (most importantly) Indigenous knowledge. This presentation detailed what we found through the use of beautiful photographs and maps of the trail.



Kasia presented the scientific component of the plants, while Alyssa General, a specialist in Indigenous plant ethnobotany from the Mohawk Nation Turtle Clan of Six Nations of the Grand River Territory, presented the traditional Indigenous uses and knowledge of these plants. As an educator and language revivalist, Alysha demonstrated the importance of language when looking at the plants, their use and ecology.

This project was great demonstration of the "Two-Eyed Seeing" principle, where both scientific and Indigenous knowledge are shared at the same level. This also represents a contribution to the UN Decade on Indigenous Languages. The second session was the presentation of the Niagara Escarpment Biosphere Network (see more below).

## TALKING ABOUT THE NIAGARA ESCARPMENT BIOSPHERE...

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The Niagara Escarpment was designed as a United Nations Educational, Scientific and Cultural Organization (UNESCO) Biosphere Reserve in 1990. The Niagara Escarpment Commission was the nominator of the site and the site administrator.



The most recent review (2012–2014) presented two key recommendations: The need to transition from a governance structure that has the Niagara Escarpment Commission (NEC) as the central convener, to an independent community-led, grassroots organization; and to meaningfully engage with Indigenous leadership as a key component of the new community-led governance.

Following a consultation in 2019, the Niagara Escarpment Commission transferred its role and responsibilities related to the Niagara Escarpment Biosphere to the Niagara Escarpment Biosphere Transition Leadership Committee (TLC) in the fall of that year.

Reengaging with Indigenous peoples was the first step, which was accomplished through discussion and the signing of a memorandum of understanding with Plenty Canada in July 2021.

In March 2022, the Niagara Escarpment Biosphere Network (NEBN) became officially incorporated under provincial regulations. The NEBN is now the official entity that is working on the mandate and designation of the Biosphere Region. What is important to understand is that the network works under a co-governance structure where both Indigenous and non-Indigenous people work together.

At the Celebration of Nations, we were able to officially present the NEBN, and testimonials of various partners who are now engaged with the network, to the public.

Much remains to be done, but I believe that the sustainability of the NEB is in better shape and is now more inclusive, diverse, and representative of the community that lives along this wonderful ecosystem.

## THE UNITED NATIONS DECADE ON ECOSYSTEM RESTORATION

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Over the past two years, through the Commission on Ecosystem Management of IUCN and as a member of the Society on Ecological Restoration, I have been able to contribute to the [Ten Principles](#). This year, I also contributed to the Standards of Practices, which were presented in a beta-version along with the COP15 in Montreal. This is a great international collaboration of several experts and practitioners and it was followed by a global consultation to gather comments on the initial draft. The document will remain a work-in-progress. There is now a need for consultation with Indigenous peoples, and more feedback from developing countries will also be important.

While many experts and practitioners who contributed to the document were from developing countries, having greater inputs from some additional regions would be important.

Developing such documents can be quite demanding and complex as terminology and practices can vary among countries. The document remains a guide, and the proposed practices are voluntary. It was developed looking by at a broad range of restorative activities, from sustainable agriculture and mining to ecological restoration. The document contains five components of the restoration process: assessment, planning and design, implementation, ongoing management, and monitoring and evaluation. In each component, there are several sub-components which include practices that can help an organization, government or community develop its own process. Of course, some subcomponents are cross-cutting such as communication, the importance of equity, diversity and inclusion, stakeholder engagement, etc.

# DEVELOPING A CANADIAN AGENDA FOR THE UN DECADE ON ECOSYSTEM RESTORATION

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At the end of May, a group of people (researchers, government, NGOs, and practitioners) met at the Natural Science Museum in Ottawa to talk about the state of restoration action and agenda in Canada. The aim was to discuss the way forward to ensure that Canada could contribute to the UN Decade on Ecosystem Restoration in a meaningful way.

A small group of us continued the discussion after the meeting and are now engaged in working towards developing an agenda for Canada. This short project is now supported by Environment and Climate Change Canada.

Ecosystem Restoration is an important step in developing sustainable solutions to degraded land and ensuring decent work that relies on healthy environments (SDGs 11, 14, and 15). Canada was a lead for a long-time regarding restoration and can once again contribute to the world in this matter.

In my case, the restoration of agroecosystems remains a focus through sustainable agriculture techniques that can enhance soil health and biodiversity at the farm level. When looking at SDG2, food security will require that agroecosystems are restored to ensure food sustainability as well as the rural communities that rely on food production for living.

## STUDENT REFLECTION

**CASSANDRA CARLSON**

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I have thoroughly enjoyed working with Liette during my undergraduate career. This was the first time I was given support and encouragement to conduct research involving Indigenous science and for that I could not be more grateful. To have someone supervising me that understood I was not using modern science to validate Indigenous science, or to go through any systemic conflicts and be able to primarily focus on the science was invigorating.

If there was any advice that I could provide to future students it would be to take advantage of every chance to learn! There is so much to be seen outside of the classroom and I truly believe doing this work has helped me find my passion moving forward. Working with Dr. Vasseur has brought me so many opportunities, like attending the 2022 UNPFII, COP15 and receiving the NSERC USRA.



The insight Dr. Vasseur has provided me within biology, having a career in the sciences, and the intersections between environmental work and political forums, wasn't something I could get by registering in an undergraduate course. Not only was I allowed to complete my research independently, and receive support whenever necessary, I connected to many webinars and learning opportunities that I never experienced before. It brought me joy learning about the environment simply out of interest and not because it was worth a mark for my grade. It also opened my eyes to how large the field of biology, the variety of work being completed and the wide array of avenues for me to travel down is. I don't know where my next steps will take me but I know my experience working with Liette, has forever shaped where I will go.

# STUDENT REFLECTION

**TASHA GUNASINGHE**

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When I was starting my master's, I knew that I wanted to focus my efforts on learning about ethical and collaborative solutions to climate change and biodiversity loss. In my undergraduate years, I centred my studies on understanding the science behind climate change and biodiversity loss. Western science and the empirical evidence of the Anthropocene taught me how fast our world was rapidly changing, but this field alone was not able to teach me how communities can withstand and stop the loss of biodiversity, and fight against climate change. It became clear to me after my undergraduate that we needed more than just science to develop effective and viable solutions to biodiversity loss and climate change.

Learning from and listening to Indigenous nations is paramount in understanding how we can protect our planet. I wanted to learn more about how ethical and impactful climate solutions can be formed in Canada by the weaving of western science and traditional knowledge.

Working with Liette on my master's gave me the ability to learn from a western science and traditional knowledge perspective. My research examined how Canada currently assesses Other Effective Conservation Measures (OECMs) and suggested areas where ethical collaboration and leadership of Indigenous Nations can better improve our conservation efforts.

My research used the collaborative framework of Two-Eyed Seeing to identify potential criteria indicators that are inclusive of Indigenous traditional knowledge to assess the governance systems, cultural and spiritual outcomes, and conservation outcomes of Indigenous Protected and Conserved Areas. Liette provided me with opportunities to learn from numerous members of both the science and Indigenous' climate community. She always encouraged me to take steps in partaking in meaningful discussions and share my ideas on how ethical collaborative approaches can be implemented in our current conversation action.

With Liette's help, I have been able to present my ideas and research to graduate students and scientists and activists within the field. I am excited to continue to learn more and build on this research.

## MY LAST REFLECTIONS RELATING TO THE "RESPONDING TO MULTI-DIMENSIONAL CRISES: IMPLICATIONS FOR RESEARCH"

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From the reflections at the plenary I gave at the 30th UNITWIN / UNESCO Chairs meeting, I have two major points to make. The first one is that the UNESCO Chairs Network is a unique innovative international program that only UNESCO could have established. It is clear that at the beginning of the next 30 years, the chairs must be aware of the societal and environmental changes leading to this planetary crisis. As Chairs, we have a role to play in initiating the transformative change needed not only in our universities but also in society through our actions in communities.

We urgently need to embrace interdisciplinarity in our work and decolonization of our knowledge by forming an alliance with ALL the citizens of the earth. My second point is to underline that, for the first time this year, on November 3rd, we celebrate the International Day for Biosphere Reserves. Biosphere Reserves are under the Man and Biosphere programme of UNESCO.

They are models, living laboratories and demonstration sites contributing to the UN Sustainable Development Goals, climate action, conservation, and more. Applying research, education and outreach through the new vision that I just mentioned in the previous point, we, as UNESCO Chairs, can all contribute to enhancing what I will call the social contract of Biosphere Reserves.

## CONTINUING MY SUPPORT FOR WOMEN IN STEM

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The issue of Equity, Diversity, and Inclusion, to which we now have added Accessibility (IDEA), remains one of the focuses of my Chair. Especially in the field of science, I know that we still have a lot more to do. I continue to be a member of the selection committees for the L'Oréal for Women in Science with NSERC and the CCUNESCO. As the L'Oréal for Women in Science celebrated its 20th edition, we decided to submit a session to the 2022 conference of the Canadian Coalition of Women in Engineering, Science, Trades and Technology.

This event was held in Halifax, May 12–14. The session aimed to present what the program was all about and then bring the reflections and experience of some of the fellows who are now the great mentors.

In addition, with the CCUNESCO, we organized a second session to present the Tool Kit for IDEA practices in research lab that I co-authored with Jocelyn Baker. Jocelyn has been working with me for the production of a few reflection papers on the subject of women and underrepresented groups in STEM. The idea for the development of this tool kit came from the observation that many researchers had some challenges in applying these principles to real research life. Indeed, research labs often struggle with how to integrate issues of equity, diversity, and inclusion into good practices in the lab.

While Canadian universities have their institutional EDI policies, in practice in the lab, most of these actions are not really feasible. We developed a toolkit intended to assist Canadian research groups, mainly principal investigator and/or professors, achieve an inclusive culture free of racism and discrimination and foster deeper respect and appreciation for different perspectives, merits, and skills. The document was well received and it was even suggested that it could be applied in other countries.



# LEARNING ABOUT COMMUNITIES AND PROTECTED AREAS INCLUDING BIOSPHERE RESERVES

## RWANDA

For me, it was my first time and facilitated a new step in understanding how the 1994 genocide influenced the rebuilding of the country. The reason is that I was a research associate at the Universite de Sherbrooke when the project "Briques cuites" (cooked bricks) was funded by the Institute of Development and Research Institute (IDRC) in March 1994. But we all know what happened that April; everything changed. Visiting the Memorial Site was an important step to continue to learn about the importance of the Truth and reconciliation for all nations.

But the trip itself was not really related to this. It was a meeting of the Steering Committee of the Commission on Ecosystem Management (CEM) of the IUCN, the first one in person since Fall 2019 in Latvia. It was a new committee since a new governance structure was established with the World Conservation Congress in September 2021. Some members of the CEM had finished their mandates and new members were included in the steering committee.



The meeting was an important way to discuss current priorities and activities to implement in the future, such as Nature-based Solutions, the UN Decade for Ecosystem Restoration, Nature Positive, and more. An extra activity that some of us were also able to do was to travel to the border, between Rwanda and Uganda, to understand the interactions between the Volcanoes National Parks (transboundary national parks), Gorilla Tourism, and impact on the local neighbourhood communities.

When discussing community sustainability, the analysis of their interactions shows the fragile balance between conservation, protected areas, and livelihoods of these communities. There was certainly a difference between non-Indigenous and Indigenous peoples in the same region. It was also clear that villages closer to the national parks were benefitting more than those further away. In thinking about this, how can we ensure that benefits can be shared more equally environmentally and socially for all?



# CONNECTING COMMUNITY SUSTAINABILITY TO ONE HEALTH

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Historically, communities across the world have had to deal with environmental change and disaster by modifying infrastructure, landscapes or the institutions that govern their behaviour. Ever increasing population, sedentary lifestyles, globalization, and changes in socioeconomic activities have reduced the flexibility of communities to changing environmental and climatic conditions. This is especially true considering the rapid changes due to anthropogenic pressures on ecosystems. However, it has long been accepted that without healthy ecosystems, humans cannot be healthy.

Last summer, I was invited to present as the first keynote speaker at the 2022 Global Health and Welfare Forum in Taiwan on October 30 (virtually). For the past few decades, I have been working directly and indirectly on the topic of ecosystem health for human health. The main theme of the forum was “One Health—Advancing Health and Well-being for All”; quite appropriate considering the current pandemic situation.

I presented the history of the interdependence of humans and nature and continued with the large global project, called Ignite, that has been initiated by the Human Health and Ecosystem Management thematic group at the Commission on Ecosystem Management at the International Union for Conservation of Nature.

This project, which includes several researchers and practitioners from different countries, aims to survey the entire literature to assess the state of knowledge related to all the possible connections among variables, such as biodiversity, climate change, governance, human activities, ecological integrity, that can influence the emergence and transmission of zoonotic diseases.

From November 22–23, I was at Lake Louise, Alberta, for the G7 Research Summit on One Health. This summit, organized by the Royal Society of Canada, was invitation-only. The first day was divided into two parts. In the morning, three panels introduced various topics related to One Health. The first one examined the use of the One Health approach to mitigate climate change and biodiversity loss, the second discussed learning from Indigenous relationships with the natural world, and the third panel addressed the issues of globalization and polarization and the need for multilateral One Health solutions for a changing world. After a nice walk around and on Lake Louise (of course, frozen at that point), the afternoon continued with round table discussions. In my case, I was co-chairing the one on “How do we integrate the Environment into One Health?” While we were initially talking about ecosystem health with human health, the environment was almost the first starting step. However, with One Health, for a long time, it had been a collaboration of the Food and Agriculture Organization of the United Nations (FAO), the World Organisation for Animal Health (WOAH, founded as OIE), and the World Health Organization (WHO). It was only in 2021 that the United Nations Environment Programme (UNEP) joined the tripartite to underline the importance of the environment.

For me, it seems that it took a long time to realize the necessity of integrating the environment from the start. I am not sure if the COVID-19 pandemic made the difference. The discussion was quite lively, and many interesting points were brought forward. For example, participants suggested looking at the structures and frameworks that are needed to make space for other voices, and at the same time, understanding who stands to benefit from or be disadvantaged by the voices at the table.

This was especially true for Indigenous peoples, stressing the importance of building trust first. In universities, the discussion included the need to address the stigma in the academic community of working on multidisciplinary work to promote joint synergies, such as One Health. It was also suggested that all students, especially in engineering, should take an ethics course where the environment and system thinking are also taught.

I completed the round table discussion by sharing that I start and finish my ecosystem class by stating: “Everything is connected to everything”. This was also the way our reporter would finish her report the next day.

I am looking forward to seeing the next steps of this forum.

## **CONTRIBUTING TO THE KUNMING-MONTREAL GLOBAL DIVERSITY FRAMEWORK IN CANADA**

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In March 2022, the Canadian Biosphere Regions received new funding from Environment and Climate Change Canada to enhance the level of conservation in their buffer zones through the establishment of Key Biodiversity Areas (KBAs) and Other Effective area-based Conservation Measures (OECMs).

Since the NEBN was not officially incorporated, Plenty Canada, as part of the co-governance structure, was able to be the proponent of the project for the NEB. This three-year project aims to enhance awareness around issues related to biodiversity conservation and improve stakeholder engagement along the escarpment.

As the Honourable Steven Guilbeault, Minister of Environment and Climate Change, stated:

- “Biosphere reserves are a model for how communities can connect with nature in healthier and more sustainable ways. They inspire and empower Canadians to work together to address global challenges such as biodiversity loss and climate change. By investing in Canadian biosphere reserves, we are advancing important conservation work in areas rich with cultural and biological diversity.”

My Chair is involved in this project and is trying to gather other researchers from other universities and colleges that have, or are interested in having, projects along the NEB and therefore in contributing to biodiversity research. The establishment of new OECMs and KBAs in the buffer zones will help Canada increase its percentage of protected areas and thus contribute to the newly adopted Kunming-Montreal Global Diversity Framework.

## **GOING TO MONTREAL FOR COP15**

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December was a busy month. First, I had to finish the semester with teaching, assessments, reports, and presentations.

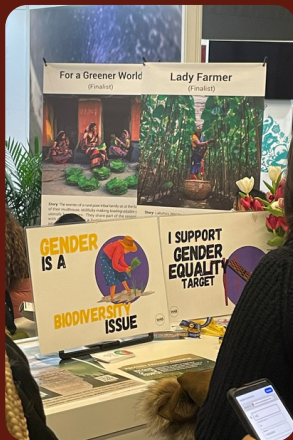
Then, it was up to Montreal for the COP15. I was there as a delegate of the International Union for Conservation of Nature (IUCN). These types of events can be quite complex, but are also rich in discussions, presentations, and reflections on what should be done to stop biodiversity loss and restore ecosystems for a healthier planet and people.

The first one was in the Nature Positive Pavilion of IUCN, entitled “Nature-based Solutions by Design.” This was organized with IUCN, the International Foundation of Landscape Architects, and the American Society of Landscape Architects. The goal was to demonstrate how landscape architects can help advance the principles of Nature-based Solutions (NbS) and enhance the benefits of nature in urban setting. To note, in July 2020 the IUCN published the Global Standard on NbS, and therefore, I was part of the panel to explain what the standard was.

The second side-event that I participated in was with UNESCO and the CEBioS (Capacities for Biodiversity and Sustainable Development) program, funded by the Belgian Development Cooperation and housed at the Royal Belgian Institute of Natural Sciences.

The first part of the event presented the actions happening in various countries in Africa, and the second part was on assessing ecosystem services in Biosphere Reserves (BR). The EVAMAB project implemented by CESBioS had developed a practical manual for testing rapid assessment of ecosystem services in African BR.

I then presented the manual that I produced with Robert Siron from Ouranos for the Canadian Biosphere Regions. This manual was produced under the hospice of the Canadian Commission for UNESCO and UNESCO to support the BR, as most of them struggled to complete this component during their periodic reviews.



## UNESCO CHAIR CORE GROUP

The core group of the UNESCO Chair on Community Sustainability includes Drs. Christine Daigle, Diane Dupont and Christopher Fullerton.

More international colleagues will be added in the coming years, to collaborate and partner on local and global research initiatives.