

***RSE Saltire workshop 11-12 October 2022 -Towards a new European approach to the sea:
stewarding marine resources for equitable ABS and global governance***

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The overarching theme for this third and final (in person) workshop revolved around the following questions: How to ‘redistribute’ scientific knowledge production and its advancements in a way that benefits society at large, and does not overly commodify scientific knowledge for the exclusive commercial benefit of few private companies? What are the scientific-legal challenges and opportunities faced by such a profound rethinking of digital sequence information and scientific knowledge production? How can these be addressed to meet Scotland’s and Europe’s strategic priorities.

Participants

Abbe Brown (Co-organiser) – University of Aberdeen
Marcel Jaspars (Co-organiser) – University of Aberdeen
Michela Massimi (Co-organiser) – University of Edinburgh
Arianna Broggiato (Presenter) – European Commission, DG Mare
Júlia Schutz Veiga (Presenter) – Nova University Lisbon, Brazilian Delegation to UN BBNJ
Prof Peter Hollingsworth (Presenter) – Royal Botanic Garden Edinburgh
Kjersti Gabrielsen (Presenter) – Marbank, Institute of Marine Research, Tromsø, Norway
Catherine Kendig (Presenter) – Michigan State University
Sabina Leonelli (Presenter) – University of Exeter
Elisa Morgera (Presenter) – University of Strathclyde
Michele Stanley (Presenter) – Scottish Association for Marine Science (SAMS)
Magdalena Zabrocka – University of Aberdeen, main rapporteur for the event

Tuesday 11 October

The presentations taking place during the first day, focused on the following subjects:

- Arianna Broggiato from the EU Commission, DG Mare gave a talk entitled “Marine genetic resources in the context of the BBNJ negotiations: the EU approach towards collaborative science within the open science paradigm”.

Arianna introduced the audience to the subject of negotiation process behind the Biodiversity Beyond National Jurisdiction (BBNJ) Agreement from the position of the EU. The presentation covered core issues related to marine genetic resources, including questions on sharing of

benefits, in the context of the current ongoing BBNJ negotiations at the UN and the role of the EU. Challenges were discussed in relation to enhancing collaborative scientific production and dealing with samples and data especially in connection to the EU's approach to open science policy and question connecting to benefit-sharing.

- Júlia Schutz Veiga "Building bridges: from debate to an equitable and effective stewardship of marine genetic resources in the BBNJ negotiations?"

Schutz Veiga presented a paper co-authored with Harriet Harden-Davies, and introduced the participants to the question of varying perspectives and degrees of inclusion between the Global North and Global South. She underlined the need for the diversification of voices actively involved in standard-setting and policymaking, as well as challenging status quo. Schutz Veiga focused on the subjects of science diplomacy, advancing equity in benefit-sharing and co-production, among others, as well as some perspectives on the current ongoing BBNJ negotiations.

Peter Hollingsworth "Biodiversity genomics – technological innovation changing our understanding of the natural world".

Hollingsworth provided helpful insights into the opportunities and challenges for equitable governance flowing from key technological developments in the field such as mass-scale sequencing of biodiversity, including projects building global DNA databases for species identification, sequencing the entire genomes of diverse species assemblages, and characterising biodiversity from traces of DNA in the environment.

- Kjersti Gabrielsen "Collecting and distributing marine genetic resources (MGR) for research and innovation".

Gabrielsen presented the work of Marbank at the University of Trømsø as well as broader practices and attitudes towards open data and knowledge-sharing in Norway, focused on how collecting samples of marine biodiversity is conducted and quality assured for the purpose of distributing MGR samples and data to academia and industry. In addition, she introduced the audience to some of the considerations around traceability and best practices within the scientific community under existing legal regulations.

Catherine Kendig "From canola to crottle: Sharing knowledge and the categories in which it comes".

Kendig examined ways in which categorization and standardization shape scientific knowledge and knowledge sharing. Using different historico-philosophical perspectives, Kendig shed light on the role played by national standards and local knowledge shared through kinship circles. By using case studies from North American agricultural technology (i.e. standard-setting used to develop canola as a food grade oil) and the history of Scottish textile dyeing, (i.e. shared recipes for making coastal lichen 'crottle' dye by the Highlanders), she showed how situated

categorizations shape the epistemic and normative landscape by organizing explanatory goals, specifying standards for research and production, and connecting scientific activities to social goals.

- Sabina Leonelli “Whither transnational knowledge? Moving research data across communities and borders”.

Leonelli provided insights into the topic of transnational knowledge and cross-border data-sharing, as well as perspectives on facilitation of desirable practices. By drawing on lessons learnt from crop science in projects across Africa, Leonelli highlighted the efforts to mobilize and link data collected across locations/borders clashing with concerns around the silencing and/or exploitation of indigenous participants as well as strategies to negotiate intellectual property claims on crop knowledge. She considers the notions of equity, participation and inclusion, as well as the damaging effects on how data are used to understand plant biology and to plan agricultural interventions.

Wednesday 12 October

The presentations taking place during the second day, focused on the following subjects:

- Elisa Morgera “Supporting ocean knowledge co-production for transformative change in the BBNJ Agreement”.

Morgera discussed the subject of ocean knowledge co-production through, among others, recognising its human rights aspects. Facilitation of local and international learning was analysed in relation to the One Ocean Hub initiative (funded by a UKRI Global Challenge Award). It was recognised that in some instances, cultural rights and environmental rights issues may overlap with the objective of preserving and facilitating sustainability in marine biodiversity. Thus, thinking about ocean cultural heritage, human rights and environmental rights, could bring new insights and potential solutions to the debate. The focus, however, should be on co-production and co-creation of knowledge for fair and equitable policymaking.

- Michele Stanley “ SAMS culture collection of algae and protozoa”.

Stanley spoke about the developments, challenges and opportunities connected to culture collection of algae and protozoa. She underlined SAMS’ efforts in facilitating consultancy, education and training, STEM and outreach activities, as well as collaborative research. Stanley provided insights into the open access database as a ‘living’ storage for annotated sequence data.

Common Themes

- **Co-production, co-creation of scientific knowledge and technology transfers**

The first theme common to the presentations and discussions, connects to some of the core issues in the area of use and access of marine genetic resources, including aspects of monetary and non-monetary benefit sharing, among others. Day 1 opened with insights into the EU position towards collaborative science in light of ongoing BBNJ (Biodiversity Beyond National Jurisdictions) Agreement negotiations. While there seemed to be a general agreement regarding the need for conservation and sustainable use of marine biodiversity in areas beyond national jurisdiction, questions arose as to whether the current draft discussed at the UN is fit for purpose to the extent of representing the perspectives and needs of all shareholders accordingly. It has been recognised that theoretical considerations are necessary for the advancement of already developed strategies, however, at the same time, corresponding practical issues may prove to be much more complex and necessitating a critical discussion on possible solutions. It was generally agreed that there should be a strong emphasis on technology transfers and data exchange, but also a more clear understanding of what is involved in the idea of co-production and co-creation. Rather than focusing on the vague term of ‘capacity building’ and imposition of duties on States under a common framework, one should address the question of whether countries have the tools, knowledge and technology to achieve set objectives. Given stark differences between Global North and Global South, technology and knowledge transfers should be facilitated while promoting co-production whereby local communities in the Global South are treated as equal contributors with valuable perspective. The model should move away from the North-centric approaches. The themes were further linked to the considerations of representation, and differences of perspectives on data access, collection, among others, between the countries from the Global South and Global North.

- **Differences of perspectives: accessing vs collecting and the differences to mitigate**

In light of the ongoing UN BBNJ negotiations, a critical need to diversify voices in reaching an equitable outcome was also discussed. One of the discussions concerned the need to bring the Global South, and other underrepresented groups into the debate by challenging the status quo, assumptions and perspectives dominated by the Global North and codified via the language of regulations and applicable practices. For instance, a difference was pointed out between scientific talking about collection, in the North, as opposed to accessing, in the South. It was further argued that the link between science and foreign affairs has been mainly shaped around the global North rather than the global South. This is relevant to identifying the most promising approach, promoting development at global level for the benefit of the humanity as a whole. Thus, the idea of equality and universal approach may have to be revised to promote the notion of equity, fruitful, and sustained cooperation.

Linking to all of the above, various presenters touched upon the considerations of capacity building and how it may be best facilitated. The BBNJ Agreement was mentioned to

discuss whether a more narrow and specific definition would be preferable, or whether a more general one should be chosen instead. Views in this regard seemed to differ among participants who listed varying objectives and arguments supporting each of the approaches, however, all agreed that ‘capacity’ can virtually mean anything and at times, more targeted and specific measures could prove more effective.

A few of the speakers underlined that the matter of trust sometimes proves to be a problematic one as there is not enough of it among the parties involved, especially when coming from different parts of the globe. Broggiato further clarified that it was a conscious and a desirable outcome of the ongoing policy drafting international efforts and processes to leave certain margin of discretion to the scientific community as there could be severe implications resulting from a strict imposition of criteria and standards from the framework if it interferes with the bottom up approach of scientific standardization. Other presenters recognised the benefits of such an approach, however, some mentioned also that in some instances, it may be more beneficial to have provisions of greater clarity and prescription as well as to focus not only on the budgetary support and funding, but also on provisions concerning information and technology transfer. Crucially, some presenters argued that for many States, technology transfers, data access and clear guidance on the utilisation of funding ‘for capacity building’ would be much more beneficial than the funding itself. Lastly, the discussion was linked to policy concerns of ‘track and trace’ and accountability i.e., finding a way to share the profit resulting from marine biotechnologies related to areas beyond national jurisdiction.

- **Inclusion and representation**

A few of the presenters discussed the need to deconstruct contemporary language used in the area of marine and plant biology and in light of BBNJ negotiations. Perspectives should be challenged to show a truly global approach rather than one deriving from and applicable to only selected areas. For instance, certain capacities, tools and resources to do something and achieve a prescribed objective, are simply assuming, coming from the North-centric position, while in the South, certain objectives may not be achievable simply due to the lack of skills and resources. However, this is rarely taken into account when producing measures and BBNJ Agreement provisions. The status quo has to be challenged to better understand varying needs and capacities among States, as well as to facilitate true co-creation. At times the varying perspectives were reflected in the language itself, such as ‘access’ vs ‘collect’, and translated directly onto the question of representation in the Agreement provisions. The theme of inclusion and representation seemed to be a recurring one, underpinning a vast majority of other discussions as it linked closely to the question how to be more effective and efficient together as a whole.

- **Scientists and traditional knowledge holders**

It was argued that the perspectives of local coastal communities, who understand the local resources and have the relevant traditional know-how, is often dismissed and/or misrepresented through the North-focused lenses of both scientists and policy-makers. Part of the discussions linked to data sharing initiatives where efforts to mobilise and link data collected across locations seemed to clash with concerns of silencing and exploiting indigenous participants. Parallels between marine biology and plant/crop biology were drawn while discussing the long-standing inequity among participants, and the lack of inclusion of low-resourced researchers and local experts with detrimental effects on how data are used. Approaches to knowledge sharing, as well as co-production, were linked here to issues of cultural heritage and the importance of fostering social justice. One of the problems mentioned was how to address epistemic injustices i.e., injustices concerning the attribution of knowledge especially to local communities. The critical role of community science was acknowledged alongside the need to address the knowledge-control regime around agricultural development, and related social injustices.

- **Collaborative science, accessibility, and openness of data**

Discussions on the Global South and Global North, issues of accessibility and differences of perspectives were linked to the benefits of accessible digital information as well as technology transfer in order to encourage greater co-creation. It was mentioned that instead of vague phrases linked to the ‘common heritage of mankind’ more practical remedies should be considered. Interestingly, the point started off another debate concerning considerations of the gender equality nature with reference to the legal language and phrases such as ‘mankind’ vs ‘humankind’.

- **Public vs private—the equitable distribution of access and sharing knowledge**

The issues of accessibility, knowledge transfers, as well as benefit sharing were linked to the consideration of commercialisation and privatisation in the field. When discussing major developments, key technology and innovations, questions arose over ethical ownership of some sources of genomic data, among others. Questions arose regarding limiting access to open data and commercialisation of databases and processes, among others, which inherently conflicts with the ideal of open data, equitable distribution, and knowledge transfers. While there seems to be a general consensus among the scientific community regarding the benefits behind and the need for openness and accessibility, private sector aims for credit recognition and limitation of access.

- **Databases, innovations and key developments in marine biology**

Presenters discussed also key innovations and developments in the field. An example was given in terms of mass-scale sequencing of biodiversity, including projects building global DNA databases for species identification, sequencing the entire genomes of diverse species,

and characterising biodiversity from traces of DNA in the environment. The subject was further connected with future opportunities, associated challenges and concerns of equitable governance. Numerous projects, such as International Barcode of Life, The Darwin Tree of Life Project, European Blue Biobank (EBB) Project, Culture Collection of Algae and Protozoa (CCAP) or Earth Biogenome Project were mentioned.

It was recognised that collaboration is key for infra-structure projects, but there are inequalities in accessibility to technology, particularly with respect to scalability that have to be urgently addressed. Giving the example of Marbank – the Norwegian national marine biobank, Gabrielsen for example agreed that there is an inherent need for technology transfer, knowledge exchange and accessibility of data facilitating closer cooperation globally.

Concluding remarks

The aforementioned common themes have a joint thread in questioning matters of inclusion, representation, facilitation of closer cooperation, and more effective global solutions. How can the global community move forward in terms of participatory governance and how to address questions of justice, equity, and inclusion? Among many other fascinating themes and ideas, participants talked about political and economic constraints on how data is accessed, stored, and shared. Furthermore, linking to the issue of trust, participants lively discussed whether tracing the use of resources was an effective mechanism, or whether a different format of delivering benefit-sharing should be considered.

Some of the interconnected perspectives included harmonising science practices; regional BBNJ data to enable environmental management at meaningful ecological scale; contributing to climate change mitigation; participatory governance; and advancing ocean science, among many others. The subject of good standards and common practices was also a common theme underpinning many conversations throughout the workshop, with a focus on setting parameters without limiting options, mitigating the undesirable practices, challenging the unconscious bias and recognising the need for truly global perspectives, but also recognising that in practice, there is the fear of implementing agreements that would ‘overstep’ the scientific communities, and that standards on sampling, collection, sending etc., are generally harder to agree among delegations. While discussing the Song of the Ocean in different languages and translations, art was recognised as a great tool for pushing the boundaries of science. The value of indigenous knowledge and equitable ways of including traditional knowledge holders via art-based research was well illustrated by current ongoing initiatives in One Ocean Hub.