



Negotiating the Use of Biodiversity in Marine Areas beyond National Jurisdiction

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A relatively small group of states is disproportionately active in marine areas beyond national jurisdiction (ABNJ), raising questions of equity, while a myriad of sectoral regulations and guidelines spread across multiple international bodies has led to uneven conservation and use of biological diversity and resources in these areas. Within this context, the UN General Assembly resolved in 2015 to begin negotiations on an international legally-binding instrument to conserve and protect biodiversity in ABNJ, with the negotiations framed by four issues: (1) marine genetic resources, including questions on the sharing of benefits; (2) measures such as area-based management tools, including marine protected areas; (3) environmental impact assessments; (4) capacity building and the transfer of marine technology. Yet our analysis demonstrates that least developed countries (LDCs) and small island developing states (SIDS) are significantly under-represented in regional and international meetings on such issues, while the authorship of academic literature on these topics is dominated to an unusual extent by Organization for Economic Cooperation and Development (OECD) member states (97%). Statistical analysis of delegation statements delivered during the first round of negotiations following the UN General Assembly resolution also illustrates that the interests of OECD member states differ substantially from LDCs and SIDS, suggesting that imbalanced representation has the potential to result in skewed negotiations. Moreover, the restriction on negotiating parties not to undermine the mandate of existing organizations limits their maneuverability, and may hamper progress toward achieving ambitious time-bound commitments to promote sustainable resource use and reduce inequality (e.g., under the Sustainable Development Goals and Aichi Targets). With ABNJ covering half the world's surface, self-interested compliance with new regulations is the most promising pathway to conservation and sustainable use, yet remains unlikely unless states feel their views, concerns and best interests have been reflected in the negotiated agreement.

Keywords: ABNJ, BBNJ, governance, high seas, least developed countries, marine biodiversity, network analysis, small island developing states

INTRODUCTION

Marine areas beyond national jurisdiction (ABNJ) cover nearly half the Earth's surface, representing the largest habitat for life on the planet (Druel and Gjerde, 2014; St. John et al., 2016). Historically, anthropogenic impacts on ABNJ were limited due to their inaccessibility (generally beginning 200 nautical miles from coastlines), but recent decades and technological innovations have brought a paradigm shift as States rapidly expand their activities in ABNJ (Merrie et al., 2014). Coupled with the well-documented lack of an overarching framework for conservation and management of biological diversity in beyond areas of national jurisdiction (BBNJ), this trend has drawn increasingly urgent calls for a new implementing agreement on BBNJ under the United Nations Convention on the Law of the Sea (UNCLOS; Dunn et al., 2014; Wright et al., 2016).

Following a decade of working group discussions on BBNJ, the United Nations General Assembly reached consensus in 2015 to enter into negotiations on drafting an international, legally-binding instrument under UNCLOS addressing a “package” of four issues: (1) marine genetic resources, including issues of benefit sharing; (2) area-based management tools, such as marine protected areas (MPAs); (3) environmental impact assessments (EIA); and (4) capacity building and the transfer of marine technology (Wright et al., 2016). States agreed that the new instrument must address all four package issues “together and as a whole” (UNGA, 2015).

The UN General Assembly (UNGA) resolution stipulates that any new agreement must not undermine the mandate of existing organizations (UNGA, 2015). Although such “savings clauses” are common in international law to preserve existing institutions (Burgiel, 2008), this presents a particular challenge within the context of BBNJ, as a patchwork of relevant sectoral regulations and guidelines on conservation and sustainable use is spread across more than a dozen international bodies (Ban et al., 2013). Ideally, however, the development of a BBNJ agreement provides an opportunity to harmonize and enhance existing governance mechanisms (Kim, 2013).

Formal negotiations have provided a context for States to address shared problems and concerns (Kinne, 2013; Lubell, 2013), but discussions around the four package issues have highlighted imbalances in exploitation of resources in ABNJ. For instance, over 70% of patents on genetic sequences of marine provenance are held by three countries (Arnaud-Haond et al., 2011). Likewise, 10 countries generated 70% of the USD 12 billion in landed value from fishing activities in ABNJ from 2000 to 2010 (Sumaila et al., 2015), where some deep-sea fishing has also been causing severe negative environmental impacts (Pusceddu et al., 2014; Clark et al., 2015). Delegation statements delivered in March/April 2016 during the first meeting of the BBNJ Preparatory Committee (BBNJ PrepCom1) demonstrated that many countries see this as an opportunity not only to conserve BBNJ, but to push for more equitable sharing of benefits from human activities in ABNJ. Other delegations, however, consider the management of resources in ABNJ to fall firmly under the purview of existing organizations, and hence beyond the scope of the current negotiations—e.g., fisheries in ABNJ being the

responsibility of regional fishery management organizations and arrangements.

The ongoing negotiations therefore have implications that extend well beyond the realm of biodiversity conservation. For example, a shift in legal interpretations regarding the sharing of benefits derived from ABNJ, or through the introduction of new safeguards or precautionary measures on extractive activities, could carry substantial economic repercussions (Arnaud-Haond et al., 2011). Moreover, the connectivity of marine systems means that changes in the management of ABNJ will almost certainly have spillover effects on the Exclusive Economic Zones of sovereign States. Public health in low-income food-deficit countries could be impacted if changes occur in their access to fish, which constitutes a source of micronutrients crucial for early childhood development and long-term health outcomes (Golden et al., 2016). In the Maldives, for instance, fish are a crucial source of the population's micronutrients, particularly highly-migratory tuna stocks, which are in decline (Blasiak et al., 2016). Furthermore, despite commitments under UNCLOS to build capacity and transfer marine technology to developing states, many still lack the means to access resources in ABNJ or benefit from their exploitation, leaving them *de facto* excluded from a potential source of economic development, and in some cases unable to sustainably and effectively fish within their own jurisdictions (UNCLOS, 1982). Several of the package elements have the potential to influence such dynamics. At the same time, the BBNJ negotiations occupy a seemingly paradoxical space, with a scope that is simultaneously vast (ABNJ cover nearly half the Earth's surface) and highly restricted (four package issues, and no undermining of existing institutions), and coming mere months after the adoption of a set of Sustainable Development Goals (SDGs) calling, among other things, for urgent action to reduce existing inequalities (SDG10) and to “conserve and sustainably use the oceans, seas and marine resources” (SDG 14). Hence, negotiating a substantial agreement accepted by all will require great effort, care, and expertise.

Here we identify imbalances in the capacity of different groups of States to shape the negotiations over the international legally-binding instrument for BBNJ. We were particularly interested in: (1) the extent to which different groups of States are participating in BBNJ negotiations; (2) the scientific capacity available to States and their delegations; (3) the different priorities of States in shaping the BBNJ agreement. The three lines of investigation were designed to potentially tell a larger story, for although a review of past BBNJ negotiations certainly shows that different States and Groups have different priorities (Morgera, 2015), it would point to a fundamental limitation in the ongoing negotiations if the priorities of States that are under-represented and have limited advisory capacity are also substantially different from other groups. First, we use participant lists from regional and international meetings on BBNJ to assess proportionality of representation. This is coupled with an assessment of authorship of peer-reviewed journal articles on BBNJ issues, which reflects the number of BBNJ experts within different countries, and therefore provides a proxy for the advisory capacity available to respective State governments. Using statistical analysis of official statements delivered by delegations at BBNJ PrepCom1, we

furthermore demonstrate that States with participatory under-representation and limited technical advisory support have their own distinct concerns and interests. Our results indicate past and present imbalances in the BBNJ negotiation process, suggesting that a new instrument could formalize an inequitable status quo, with associated risks of unequal buy-in and compliance with any new regulations.

METHODS

Network Analysis of Meeting Participation

We collected all available participant lists from regional and global meetings specifically focused on BBNJ issues. We included regional meetings in addition to global meetings to limit biases associated with only looking at the global-level (e.g., some

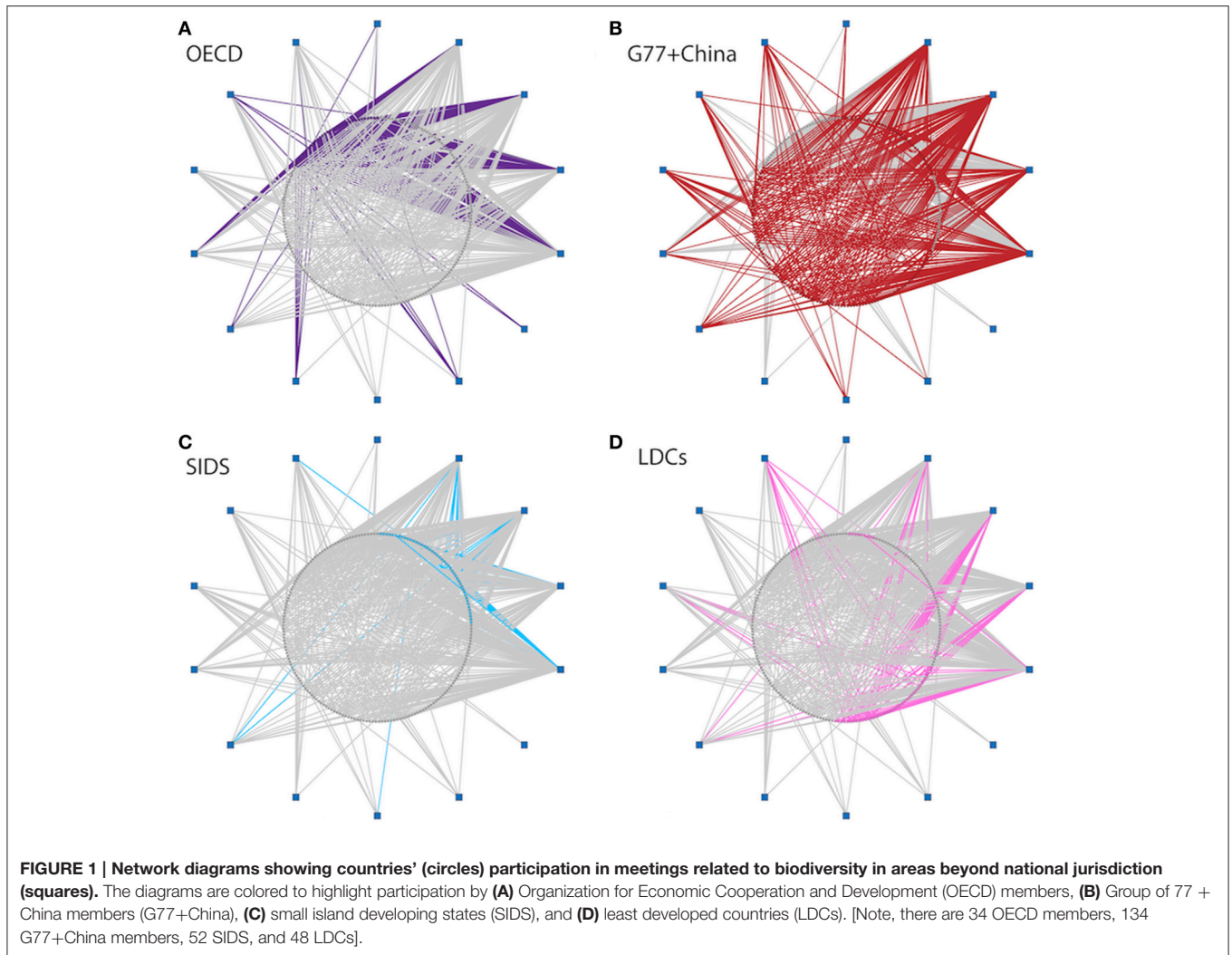
countries more likely to participate in regional meetings). This yielded a set of 14 lists for meetings convened from 2012 to 2016 (Table 1). We used the participant lists to construct two-mode networks (Figure 1) consisting of meetings and the focal countries (Lubell et al., 2014; McAllister et al., 2015). The participation of at least one delegate from a particular country in a particular meeting determined the presence of a tie between that country and meeting (McAllister et al., 2014). The countries were coded according to four categories:

- (1) Organization for Economic Cooperation and Development (OECD) members;
- (2) Members of the Group of 77 + China (G77+China)¹;

¹When established in 1964, the Group of 77 did include 77 countries, but that number has since increased to encompass a highly diverse range of 134 States,

TABLE 1 | Meetings included in the network analysis.

Name	Type	Date	Location	Number of countries participating
Eastern Tropical and Temperate Pacific Regional Workshop to Facilitate the Description of ecologically or biologically significant areas (EBSAs)	EBSA workshop	August 27–31, 2012	Galápagos Islands, Ecuador	13
North Pacific Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	February 25–March 1, 2013	Moscow, Russian Federation	8
South-Eastern Atlantic Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	April 8–12, 2013	Swakopmund, Namibia	17
Mediterranean Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	April 7–11, 2014	Málaga, Spain	20
Governance and Sustainable Use of Ocean Ecosystem Services and BBNJ (Conference of the Parties to the Convention on Biological Diversity)	Side event	October 9, 2014	Pyeongchang, Republic of Korea	4
Arctic Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	March 3–7, 2014	Helsinki, Finland	7
North-West Atlantic Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	March 24–28, 2016	Montreal, Canada	2
Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction	Working group meeting	April 1–4, 2014	New York, USA	69
Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction	Working group meeting	June 16–19, 2014	New York, USA	80
Ad Hoc Open-ended Informal Working Group to study issues relating to the conservation and sustainable use of marine biological diversity beyond areas of national jurisdiction	Working group meeting	January 20–23, 2015	New York, USA	105
North East Indian Ocean Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	March 21–26, 2015	Colombo, Sri Lanka	5
North West Indian Ocean Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	April 19–25, 2015	Dubai, United Arab Emirates	14
East Asia Regional Workshop to Facilitate the Description of EBSAs	EBSA workshop	December 14–18, 2015	Xiamen, China	12
Development of an international legally binding instrument under the United Nations Convention on the Law of the Sea on the conservation and sustainable use of marine biological diversity of areas beyond national jurisdiction	Preparatory Committee meeting	March 28–April 8, 2016	New York, USA	99



- (3) Least Developed Countries (LDCs)²;
- (4) Small Island Developing States (SIDS).

We then analyzed the resulting network using Exponential Random Graph Modeling (ERGM), which tests the propensity of certain sets of ties in the network against their propensity in a set of random networks (Lusher et al., 2013; Guerrero et al., 2015). The sets of ties are treated as parameters in the model, which also accounts for the potential nestedness of the sets (i.e., sets contained within other sets). Our parameters of interest were chosen to capture the extent to which the different groups of countries were participating in the BBNJ meetings (Table 2). We included two control parameters in the model. First, we control for the fact that some meetings are regionally focused (i.e., not all countries invited) by including a parameter capturing participation by countries of any type in the meetings (density).


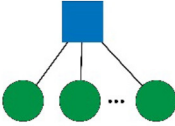




including all SIDS and LDCs, which are also considered as sub-categories within this analysis.

²All States meeting the three criteria defined by the UN Economic and Social Council (ECOSOC) Committee for Development Policy (ECOSOC, 2015).

Second, we control for the likelihood of higher participation in the globally focused meetings by including a parameter that accounts for some meetings being attended by relatively more countries (meeting popularity). These two control parameters help account for differences in the potential scope of attendance at the various meetings.

Parameters significantly driving network formation are those whose estimates are twice their standard error (Lusher et al., 2013). Positive (negative) estimates suggest the parameter is more (less) important in driving the network than expected by chance. We undertook a standard goodness of fit procedure for ERGMs (see Lusher et al., 2013), and our model was able to reproduce reasonably well all sets of ties included in the model and others not included (e.g., 2-Star configurations including country-type attributes). We also built a model for comparative purposes that contained all the same sets of ties as parameters, except we fixed the density of country-meeting ties instead of including the density control parameter noted above. We found no significant difference between the output from the two models. We used MPNet software to undertake the modeling (Wang et al., 2009).

TABLE 2 | Focal parameters in the exponential random graph modeling.

Parameter	Visual representation	Description
Density (XEdge)		The general likelihood of countries of any type to participate in meetings.
Meeting popularity (XASA)		The likelihood that some meetings will have higher participation than others.
SIDS participation (SIDS_XEdgeA)		The likelihood that small island developing states (SIDS) participate in meetings.
G77+China participation (G77+China_XEdgeA)		The likelihood that members of the Group of 77 and China (G77+China) participate in meetings.
LDC participation (LDC_XEdgeA)		The likelihood that least developed countries (LDCs) participate in meetings.
OECD participation (OECD_XEdgeA)		The likelihood that Organization for Economic Cooperation and Development (OECD) members participate in meetings.

Assessment of Peer-Reviewed Literature

We created a catalog of peer-reviewed articles dealing with BBNJ issues by searching³ the Thomson Reuters Web of Science database and individual marine science journals, yielding a group of 59 articles authored by 212 individuals based at 106 institutions or organizations. We furthermore found that over 86% of these articles were from just four journals (*Marine Policy*, *The International Journal of Marine and Coastal Law*, *Ocean Yearbook*, and *Ocean and Coastal Management*), and to enable comparative analysis, created a proxy set of marine science articles on all topics, by collecting all articles from the January 2016 issues of these four journals. This yielded a group of 75 articles by 230 authors based at 167 institutions or organizations. We used the two groups of articles to then assess geographical contribution to shaping the literature on BBNJ issues, and relative differences *vis-à-vis* the proxy group of marine science articles on all topics. We further classified authors in both categories by matching their affiliations with the same country groups used in the network analysis.

Data Mining of Delegation Statements

We collected official statements provided to the UN Division for Ocean Affairs and Law of the Sea (UNDOALOS) Secretariat by State Delegations and Groups over the course of BBNJ PrepCom1 (28 March–8 April 2016). To assess these 115 documents, we wrote a text mining script⁴ using the R statistical software to generate heatmaps and dendrograms of the respective frequency with which delegations raised one of the four package elements or other indicative words or phrases selected by the authors. In addition, we considered both overall frequency as well as weighted frequency per 1000 words of text, and assessed

³Search keywords: ABNJ; BBNJ; areas beyond national jurisdiction.

⁴Available in supplementary materials.

States both individually and in aggregate categories (OECD, G77+China, LDCs, SIDS).

Finally, we used the weighted frequencies derived from the text mining to run Pearson product-moment correlations against per capita gross national income (GNI) and indicators of State governance to determine whether a focus on specific package issues is associated with States' economic well-being or regulatory capacity (Kaufmann and Kraay, 2015; UNDP, 2015). To enable the inclusion of statements made by groups, namely the Caribbean Community (CARICOM), G77+China, and Pacific Small Island Developing States (PSIDS), we averaged the per capita GNI and governance capacity of all individual members in each respective group.

RESULTS

Network Processes

The ERGM results indicate that both SIDS and LDCs are participating in the meetings less than expected by chance, while OECD members and G77+China are participating more (**Table 3**). There are many LDCs with considerably less participation than other countries (**Figure 2A**), while the same is true for SIDS (**Figure 2B**). Only 63 and 52% of LDCs and SIDS, respectively, have attended at least one meeting; while 75 and 94% of G77+China and OECD members have done so. However, ~12 and 45% of G77+China and OECD members have attended five or more meetings, compared with only 2% of SIDS, and no LDCs.

In addition, participant lists suggest considerable variation in the continuity of expertise within delegations. Looking at the four most recent UN-level meetings on BBNJ from 2014 to 2016 (see **Table 1**), many OECD countries (42.9%) had at least one delegation member who attended all of the meetings, more than four times the level for the G77+China (10.4%). Even lower rates

TABLE 3 | Exponential random graph modeling (ERGM) results.

Parameter	Estimate (stderr)
Density	-2.7013 (0.197)*
Meeting popularity	0.6861 (0.119)*
SIDS participation	-0.5171 (0.137)*
G77+China participation	0.3718 (0.141)*
LDC participation	-0.5494 (0.123)*
OECD participation	0.6547 (0.158)*

*significant terms (i.e., parameter estimate is more than double the Stderr).

of delegation continuity were evident for SIDS (7.7%) and LDCs (4.2%).

Scientific Discourse

The peer-reviewed literature on marine issues is primarily produced by authors based in OECD member states (79%), but this tendency is far stronger for articles on BBNJ issues (98%). We found that authors from five OECD states accounted for over 70% of the authorship of BBNJ articles, while 163 countries were not represented (Figure 3). A negative correlation ($R = -0.87$, $p < 0.001$) exists between the number of authors from each country in the sample and the percentage of countries with a given number of authors (Figure 3, inset). Within the proxy sample of marine science articles on all subjects, 21% of authors had affiliations in non-OECD states, while this figure was 2% for BBNJ articles, with no authors based in SIDS or LDCs.

Statements and Interests

Delegations to BBNJ PrepCom1 demonstrated divergent levels of interest in individual elements of the BBNJ package. Marine genetic resources were the primary focus of SIDS, a trend that was even more pronounced for LDCs (Figure 4A); while OECD states more frequently mentioned MPAs and EIAs. Capacity building was not the primary focus of any of the groups. A heatmap of individual statements mirrors these findings, and the associated dendrogram reflects the clustering of focus on MPAs and EIAs, as well as the relatively distinct focus on MGRs (Figure 5). The heatmap also identified clusters of States and Groups with high interest in MGRs (Federated States of Micronesia, Jamaica, Papua New Guinea), and those with a heavy focus on MPAs and EIAs (USA, European Union, CARICOM), while capacity building does not emerge as a clear priority for any clusters. Furthermore, state governance capacity as well as per capita GNI are positively correlated with the frequency of references to MPAs ($R = 0.52$, $p < 0.05$; $R = 0.50$, $p < 0.05$ respectively), but not the other package issues.

Several terms or phrases were identified during the text mining as proxies of broader attitudes based on the authors' experiences attending the BBNJ PrepCom1. These included "undermine," due to the General Assembly Resolution that any new agreement not undermine existing agreements, "common heritage of mankind," due to the importance of this legal concept to the management of seabed resources and potentially MGRs, and "opportunity" as a proxy for State attitudes about the potential of these negotiations. A weighted frequency analysis

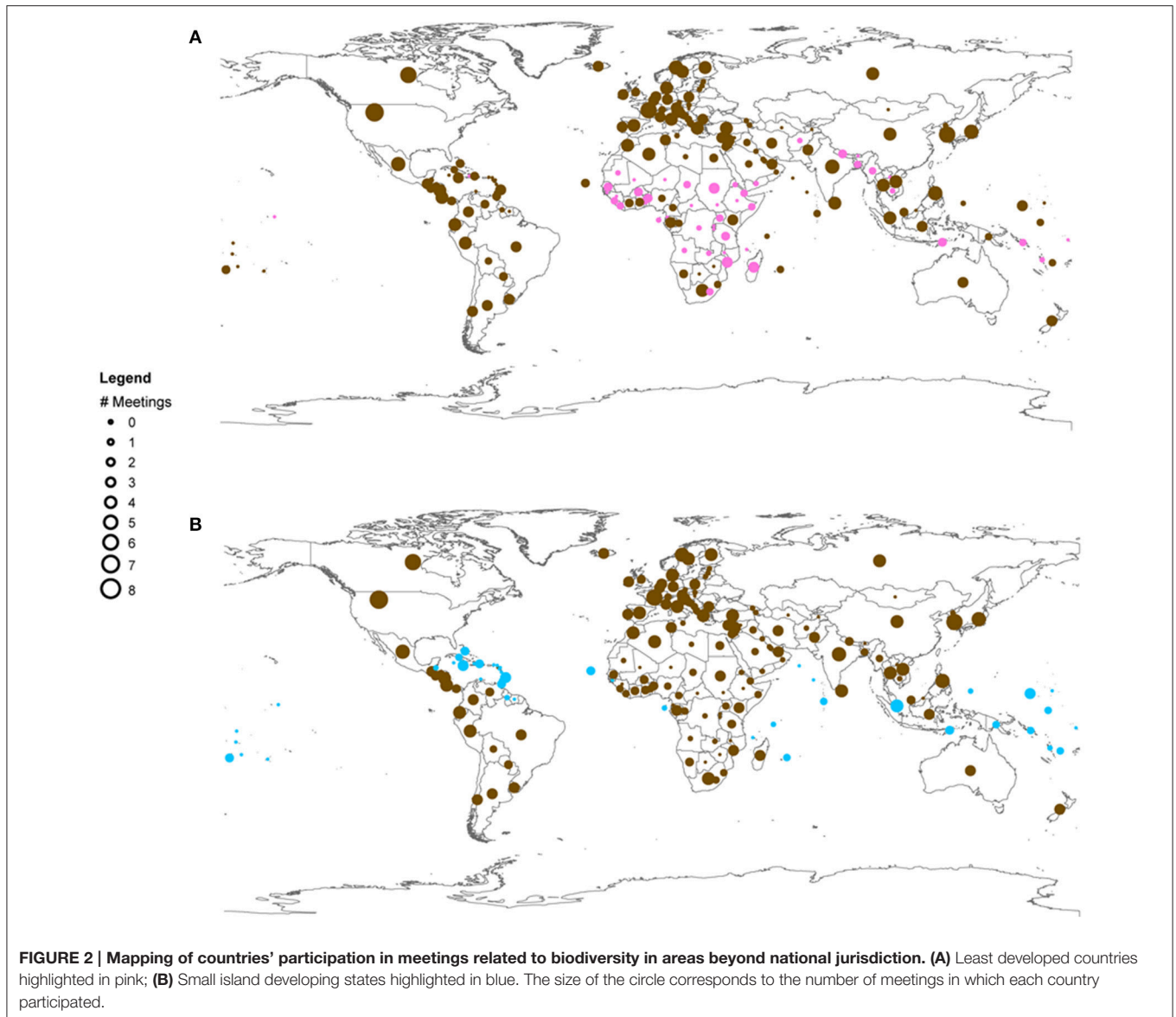
found OECD members nearly twice as likely to mention the danger of undermining existing agreements than their SIDS and LDC counterparts, with several States particularly reluctant to alter existing mandates on straddling and highly migratory fish stocks under the UN Fish Stocks Agreement (Wright et al., 2016). The inverse relationship was found for "opportunity" (Figure 4B). An even starker contrast was identified for the phrase "common heritage of mankind," which was more than five times as likely to be used by LDCs than OECD states.

DISCUSSION

The success of any new BBNJ instrument under UNCLOS will crucially depend on buy-in by all states. Compliance gaps within UNCLOS and UNFSA highlight the challenge of effectively monitoring and enforcing regulations in vast ocean areas, where illicit activities are sometimes simply displaced into areas with weaker governance (Österblom, 2014; Blasiak, 2015; Blasiak and Yagi, 2016). Therefore, although the findings of this study may be most immediately relevant for delegations from SIDS and LDCs, they are also important for the highly industrialized states with their deep pools of legal and scientific expertise. Nowhere is self-interested compliance by states as crucial as in the vast ABNJ, and negotiating a BBNJ instrument accepted by all and fundamentally representative of the interests of all is the most promising pathway to such an outcome.

Self-interested compliance also depends on States having sufficient capacity to conduct their monitoring and regulatory responsibilities effectively. Yet a notable finding of our analysis is that among the four BBNJ package elements, capacity building and the transfer of marine technology seems to be a relatively low priority, a trend evident for both the OECD and G77+China, as well as the sub-categories of SIDS and LDCs. Despite numerous calls for capacity building, and international commitments to engage in such activities, it remains the least implemented part of UNCLOS (UNGA, 2014). One possibility is that the failure of states to meet past commitments to capacity building may have caused SIDS and LDCs to dedicate less energy to negotiating this package element.

In a strategic sense, however, States are certainly considering both the short-term and long-term obligations and benefits associated with each of the package elements. Broadly, the first two package elements—MGRs, and area-based management tools such as MPAs—are associated with subjective ideals of participating States with regard to the value and ethics of conservation, sharing of benefits, and the scope of marine resources considered under the common heritage of mankind. All of these issues are hotly debated and this research takes no specific position on them, yet analysis of delegation statements shows the greatest divergence across the OECD/SIDS/LDCs for these two package elements, suggesting that finding consensus on them will pose the greatest hurdle to realizing the new BBNJ instrument (Wright et al., 2016). Moreover, regardless of how the benefits from the exploitation of MGRs are shared, their economic value is unclear and monetary benefits likely lie far in the future. Any perceived economic loss associated



with the establishment of MPAs, however, would be immediate, suggesting that compensatory tradeoffs between the two package elements to build consensus on an implementing agreement would face a mismatch in timeframes. The latter two package elements—EIAs and capacity building and transfer of marine technology—have a less subjective and more practical character. The likelihood that industry actors will face new obligations with regard to EIAs, however, raises some questions due to their virtual absence during the first BBNJ PrepCom meeting. If the BBNJ process follows a similar pattern to previous environmental negotiations, such as the Cartagena Protocol on Biosafety, it can also be expected that industry representatives will become a larger and stronger presence in future meetings (CBD, 2000; Burgiel, 2008). As previously stated, a lasting and durable new implementing agreement will depend on capacity building, which would be both a long-term obligation for some states,

while only providing tangible benefits over the long term to others. The limited focus on capacity building in the first round of negotiations suggests that delegations may be strategically focusing on those package issues with the potential to generate tangible economic benefits or obligations over the short to medium term.

Our analysis also suggests that LDCs and SIDS are entering into the negotiation of an international, legally-binding instrument on BBNJ at a considerable disadvantage *vis-à-vis* OECD states, many of which are among those most active in ABNJ today. The absence of authors based in LDCs and SIDS in the peer-reviewed literature, for instance, points not only to a lack of domestic scientific capacity to advise delegations or governments, but also suggests that the body of scientific literature on BBNJ could potentially be skewed toward the particular interests of a small group of states. This is compounded

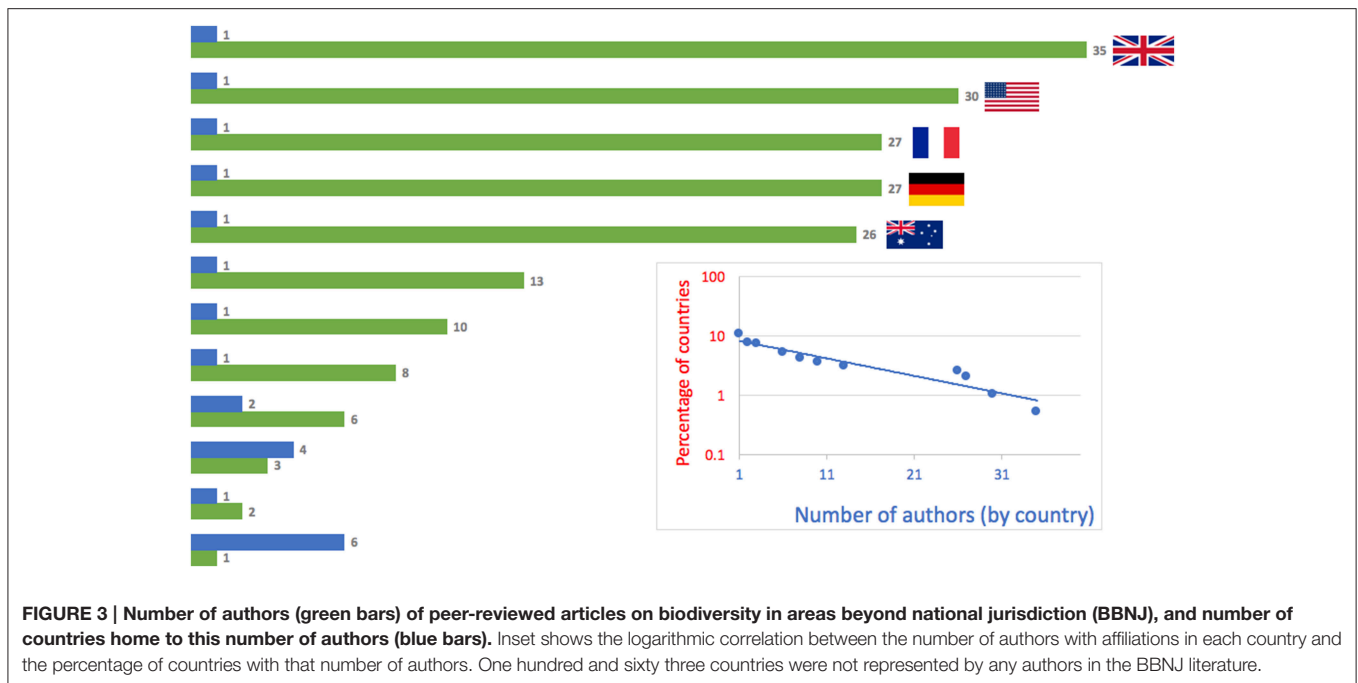


FIGURE 3 | Number of authors (green bars) of peer-reviewed articles on biodiversity in areas beyond national jurisdiction (BBNJ), and number of countries home to this number of authors (blue bars). Inset shows the logarithmic correlation between the number of authors with affiliations in each country and the percentage of countries with that number of authors. One hundred and sixty three countries were not represented by any authors in the BBNJ literature.

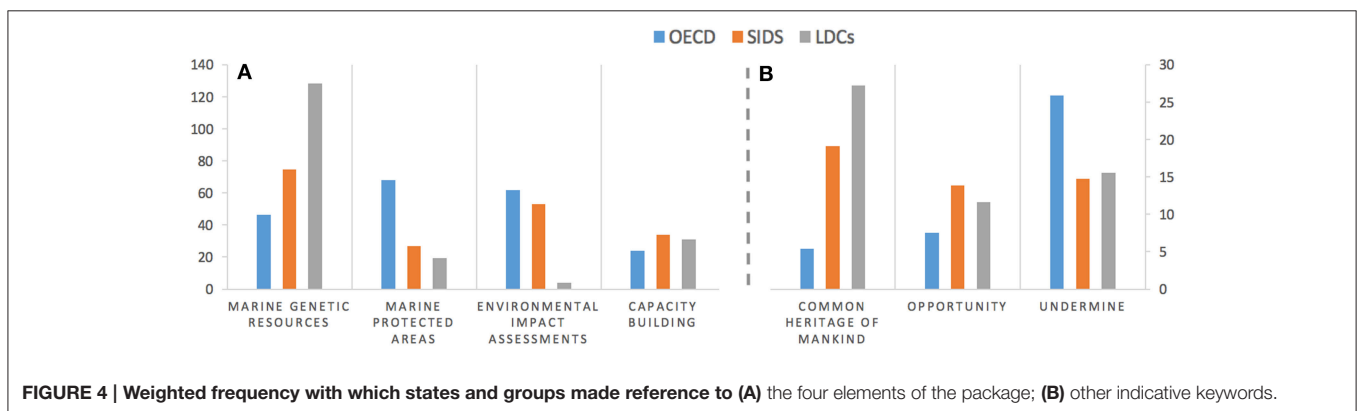


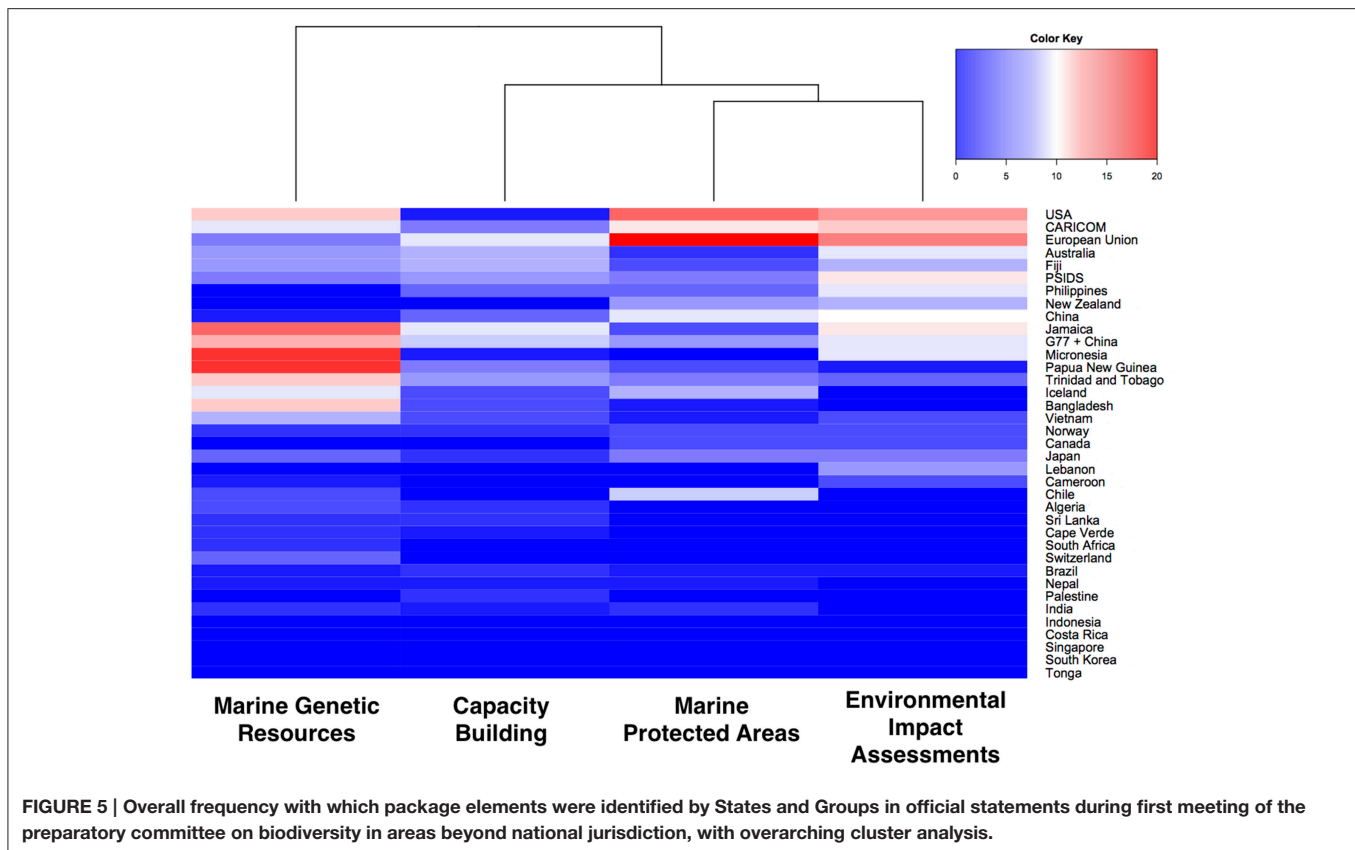
FIGURE 4 | Weighted frequency with which states and groups made reference to (A) the four elements of the package; (B) other indicative keywords.

by demonstrated imbalances in participation by LDCs and SIDS in regional and international meetings, and the comparatively low level of continuity in their delegations.

We acknowledge, however, that participation in meetings does not necessarily correlate with influence, just as having a large body of domestic expertise on BBNJ issues does not mean that governments can or would draw on this expertise (Corell and Betsill, 2008). Moreover, the influence of private sector or civil society actors on different national governments certainly varies among countries, and changes over time. For instance, developing countries have been particularly reliant on advisory support from NGOs in past international negotiations on environmental issues (Burgiel, 2008). Such considerations, however, are beyond the scope of our study, which considers representational imbalances that are frequently stated, yet seldom quantified.

Efforts have been made to promote the participation of SIDS and LDCs in the BBNJ negotiations, including through a

voluntary trust fund to support the attendance of “developing countries, in particular [LDCs], landlocked developing countries and [SIDS]” (UNGA, 2015). Such efforts are in line with global commitments, including SDG 10 to “ensure enhanced representation and voice for developing countries” (UN, 2015). Despite these possibilities, our analysis shows that the governments of both developing and OECD states will need to take further steps to ensure that future meetings and negotiations are founded on conditions of representativeness and equity. Moreover, the insertion of a savings clause into the United Nations General Assembly resolution on the establishment of the BBNJ Preparatory Committee and future steps toward creating a new international legally-binding instrument specifically bars States from undermining the mandate of existing organizations. This simultaneously “saves” the existing framework for the use of natural resources, while eliminating the opportunity for negotiating States to substantially alter the status quo of resource use in ABNJ. The tendency to use such savings clauses in



international law also suggests a considerable barrier to enacting fundamental changes, and perhaps a point of enduring tension with commitments like SDG 10 for a fundamentally more equal world, both in ABNJ and elsewhere.

AUTHOR CONTRIBUTIONS

RB, JP, NY, and HS all contributed to designing and conducting the research. RB led the research and drafted the manuscript. JP conducted network analysis and drafted portions of manuscript. HS created R script for data mining.

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SUPPLEMENTARY MATERIAL

The Supplementary Material for this article can be found online at: <http://journal.frontiersin.org/article/10.3389/fmars.2016.00224/full#supplementary-material>

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