Incorporating stakeholder insights into SDG keywords through collaborative workshops

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Abstract

The 17 Sustainable Development Goals (SDGs) are key aspects in the development discourse. SDG keywords have been formed/collected by scholars. However, exploring which might be missing is vital. Furthermore, gathering stakeholder views is useful in fostering innovative approaches. Here, 147 stakeholders involved in biology/ environmentalism/ sustainability were brought together in SDG workshops. In a total of 14 workshops, participants received keywords for each SDG and developed new ones. These keywords were then searched in the "Elsevier 2021 SDG mapping" database, and the novel keywords were noted. Three follow-up workshops (40 participants) were then conducted. Participants were tasked with finding overarching themes in the novel keywords. Topics of discussion were also noted. The results brought forth many new keywords, themes, and discussion topics. Regarding biodiversity, some participants potentially favored Intrinsic nature valuation. There were also commonalities with Ecological Economics, particularly their emphasis on biophysical limits. Themes bridging environmentalism and Indigenous needs were also present. Several concrete policies, like Universal Basic Income and paid maternity/paternity leave, were also emphasized. Regarding justice, consent and food justice were deemed important. Ultimately, the workshops brought forth many novel perspectives from stakeholders in fields, like biology, that aren't always considered.

Keywords: Sustainable Development Goals; Facilitated Workshop; SDG Keywords; Thematic Analysis

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1. Introduction

The 17 Sustainable Development Goals (SDGs) have been instrumental in the discourse of global harmony. They are targets to achieve a better world and include goals such as "No poverty" (SDG 1), "Good health and wellness" (SDG 3), and "Gender equality" (SDG 5) (UN General Assembly, 2015). They have also emphasized the natural world, biodiversity, and well-functioning resource use (UN General Assembly, 2015). In fact, in terms of environmental destruction, the SDGs, as discussed by Torma (2021, p. 3), seek to "balance human lifestyle and the planet's resources for the greater good of the people and the planet." Developing an inclusive and fair justice system is also a key goal of the SDGs (UN General Assembly, 2015). Each of the SDGs has a set of targets to guide their eventual achievement (UN General Assembly, 2015).

The SDGs have also been criticized, with alternatives sometimes developed. These include those based on Ecological Economics (Quilley and Kish, 2019). There have also been feminist critiques of the SDGs (Taylor and Mahon, 2020). Others have labelled current SDGs as stuck in the mindset of "extractivism," particularly when it comes to the Global South (Brand et al., 2017). Similarly, others have critiqued the SDG narrative for not looking at structural and historical issues linked to the goals, including colonialism and the exploitation of poorer nations by richer nations (Larsen et al., 2022). Relatedly, in terms of overarching political structures, Marxist critiques of the SDGs have targeted inequality and wealth distribution (Weis and White, 2020). National alternatives to the SDGs, such as a Brazilian version, have also entered the SDG discourse (Scarano, 2024).

More generally, a critique of the SDGs is that current applications are often siloed, with each discipline working separately, often on only a few SDGs (Watanabe, 2020; Kerton, 2023). Furthermore, some have discussed how members of a stakeholder community, such as biologists, often don't interact significantly with policymakers (Watanabe, 2020). Similarly, scholars studying the challenges regarding SDG implementation have argued that economic growth can hurt other efforts to achieve sustainability and that the current conceptual framework for the SDGs can be conceived as a struggle between human society and nature (Saxena et al., 2021). Geographical issues, such as the difference between SDG progress in the Global North and Global South, with the latter having less success, have been discussed (Sumaila Mohammed et al., 2023). Recently, the Covid-19 pandemic has worsened the situation, often causing setbacks in SDG implementation (Sumaila Mohammed et al., 2023).

Several researchers have sought to apply keywords to the SDGs, to identify, track, and categorize them better (Sohn, 2018; Sullivan et al., 2018). A massive effort to develop keywords for the SDGs is the "Elsevier 2021 SDG mapping" initiative which used a mixture of technology and experts to consider keywords in writings and articles that deal with the SDGs (Rivest et al., 2021). One may ask, however, whether there are certain significant keywords missing. As such, this article brought together stakeholders involved in biology and/or environmentalism and/or sustainability to participate in several activities, with some of the exercises meant to develop keywords for each SDG and consider whether they are novel to the "Elsevier 2021 SDG mapping" initiative. Follow up workshops were conducted to see whether novel keywords could be grouped into meaningful themes. "Novel keywords" refers to keywords that the participants came up with but were not found in the SDG database. "Themes" refers to the themes the participants in the follow up workshops developed for the novel keywords, placing them in one or a few thematic groups. Finally, "topics" refers to discussion topics that arose during the follow up workshops, as noted by the notetakers.

2. Materials and methods

Fourteen virtual workshops were conducted, in 2020 and 2021, with 147 participants involved in biology and/or environmentalism and/or sustainability, mostly hailing from North America. These types of stakeholders were included as many of them could add important views tied to both sustainability and biodiversity protection. Notably, some scholars have discussed how the inputs of such groups, including experts in biodiversity, are often not adequately connected with the general SDG community (Watanabe, 2020). Others have discussed how, in some views of the SDGs, there is a clear battle between nature and human thriving (Saxena et al., 2021).

Others have argued that while environmentalism and related sciences, such as sustainability, were fundamental to the current view of sustainable development, some have subsequently also been neglected, leading to several post-development alternatives (Scarano, 2024). These have the possibility of positively contributing to the view of what sustainable development should be (Scarano, 2024). Ultimately, this all demonstrates how the stakeholders considered in this project can play key roles in SDG discourse.

Participants were recruited, generally, through academically-relevant listservs. Potential participants could also point to others who might be interested, in a snowball sampling method (Bahr, 2015). Ethics approval was obtained from McGill University (REB # 20-02-027). The workshops were a portion of larger research on dams, and participants were informed there may be other uses for the data. These specific workshops were referred to as the "Sustainable Development Goals" workshops. At each workshop, lasting around an hour, participants were divided into subgroups (of at least 3 people) and each subgroup was given some SDGs to work with. Each subgroup had at least one notetaker. Each participant received 50 Canadian dollars, with notetakers receiving an additional 50 Canadian dollars. Participants were given keywords for each SDG based on past efforts (Sohn, 2018, Sullivan et al., 2018), and were told to rank terms or add keywords they think are important. The purpose, for this article, was on the keywords that came up, and not the ranks given.

The exercise was framed as: "If this specific SDG is discussed, what discussion topics should be included, and which keywords would fit with those topics?" Each subgroup would have to reach a consensus on which keywords to include. The participants could ask for my guidance on methodology at any point. I then compared the keywords with the "Elsevier 2021 SDG mapping" initiative to determine if any were novel. The "Elsevier 2021 SDG mapping" initiative is a searchable database for keywords associated with each SDG, except for SDG 17 (Rivest et al., 2021). As such, each keyword, along with variants, when applicable, could be searched in this database.

Three follow up workshops, with 40 stakeholders, recruited from the initial 147 participants, were subsequently organized and run. They took place, virtually, in September and October of 2021. In these, the purpose was for participants, once divided into subgroups, to consider the novel keywords, namely those that were not found in the "Elsevier 2021 SDG mapping" initiative and see whether they could develop themes that tie these keywords together. As such, they were undertaking a thematic analysis, seeking a few key overarching themes for the novel keywords. The precise steps in the thematic analysis were largely left up to them and they could group and regroup keywords into themes until they found some that they felt fit well. More than one theme was allowed. Finally, notetakers in each group noted topics that were discussed during these efforts.

3. Results

The results demonstrate there were at least some keywords not found in the database. The follow up workshops also brought forth many potential new overarching themes. This section goes through each SDG, first mentioning a few novel keywords (see Tables 1 to 3 for the full set). Also, for each SDG, this section displays the overarching themes for these keywords that were developed in the follow up workshops. Finally, for each SDG, the topics of discussion, as noted by the notetakers, are also included.

Table 1 displays the keywords that were novel for SDGs 1 to 6, meaning they were not found in the "Elsevier 2021 SDG mapping" database. Follow up workshops for SDG 1 gave a few overarching themes, namely "Management of collective needs," "Equity," and "Economic distribution." Group discussions included the topics of "Gender disparity," "Maternity/paternity leave," "Voter representation," and "Decolonization."

Table 1. Novel keywords for SDG 1 to 6

SDG 1 No poverty	SDG 2 Zero hunger	SDG 3 Good health and wellness	SDG 4 Education	SDG 5 Gender equality	SDG 6 Clean water and sanitation
Fair trade	Access to nutritious food	Wellbeing	Diversity	Genders (spectrum)	Accessible water
Geographic location	Protective agriculture	Mental health	Valuing alternative knowledge/ experience	Religion	Access to water
Government support	Distribution of food	Culturally appropriate	Availability of education	Culture	Life of water
Resource availability	Accessibility	Spirituality	Authenticity	Nonbinary	Water for biodiversity
Resource distribution	Culturally appropriate food	Trust	Adaptation	Marxist feminism	Water for nonhuman
Natural extraction	Imported foods	Economic health	Tertiary education	Identity	Spiritual water
Training	Food waste	Universal healthcare	Affordable	Altering social construction	Green alternatives
Education	Inequality	Affordable healthcare	Safe	Abolition to gender binary	Sustainable ways
Universal Basic Income (UBI)	Income to acquire food	Happiness		Recognition of unpaid domestic work	Affordability

Table 1. *Cont.*

SDG 1 No poverty	SDG 2 Zero hunger	SDG 3 Good health and wellness	SDG 4 Education	SDG 5 Gender equality	SDG 6 Clean water and sanitation
Tax theft	Controlled food prices	Affordability		Right to control your body	Resolving pollution
Wage suppression	Food contaminants	Safety			Resolution Priority (e.g. reserves first)
Race issues		Access to healthcare			Pollution Penalties
Exploitation		Unequal distribution of medical resources			
Public goods		Illness due to pollution			
Equal right to economic resources		Toxicity			
		Lowering mortality (maternal, newborn)			
		Lowering diseases and illnesses from pollutants and contaminants			

As seen in Table 1, there were several novel keywords (e.g. "Food waste") for SDG 2 ("Zero hunger"). Follow up workshops for SDG 2 gave a few overarching themes, namely "Food security," "Food justice," and "Food sovereignty," with the discussions including the topics of "Sustainable agriculture," "Food redistribution," "Food equity," "Local/traditional food knowledge," and "Agricultural infrastructure."

There were also several novel keywords (e.g. "Trust") for SDG 3 ("Good health and wellness") (Table 1). Follow up workshops gave a few overarching themes for SDG 3, namely "Holistic wellbeing," "Addressing injustice in the health system," and "Mental and physical health," with the discussions including the topics of "Environmental racism," "Equitable healthcare," "Traditional practices," and "Mental health destigmatization."

The novel keywords for SDG 4 ("Education") include "Diversity" and "Authenticity" (Table 1). Follow up workshops gave a few overarching themes for SDG 4, namely "Access to education (including diversifying types of education)," "Transforming education," and "Equal opportunity and access inclusion." According to the

notetakers, the discussions included the topics of "Culturally appropriate education," "Non-heteropatriarchical" and "Lifelong education."

The novel keywords for SDG 5 ("Gender equality") include "Nonbinary" and "Marxist feminism" (Table 1). Follow up workshops gave a few overarching themes for SDG 5, namely "Inclusivity," and "Decolonized gender approach," with the discussions including the topics of "Intersectionality," "Freedom of expression," "Equality," and "Reproductive justice."

The novel keywords for SDG 6 ("Clean water and sanitation") include "Water for biodiversity" and "Water for nonhuman" (Table 1). Follow up workshops for SDG 6 gave a few overarching themes, namely "Use of water vs. respecting water," and "Inherent value of fresh water," with the discussions including the topics of "Non-anthropocentrism" and "Decommodifying water."

Table 2 displays the novel keywords for SDGs 7 to 11. The novel keywords for SDG 7 ("Affordable and clean energy") include "Just transitions" and "Jevon's paradox" (Table 2). Follow up workshops for SDG 7 gave a few overarching themes, namely "Infrastructure" and "Localized, equitable, sustainable energy." Discussions included the topics of "Citizen involvement," "Just energy," and "Equity."

The novel keywords for SDG 8 ("Decent work and economic growth") include "Safety net" and "Welfare" (Table 2). The follow up workshops brought out several themes for SDG 8, namely "Supportive communities," "Sustainable and resilient growth," and "Employment." The notetakers noted several topics, including "Stimulus for innovations," "Access to safe childcare," "Paid maternity and paternity leave," and "Paid sick leave."

Table 2. Novel keywords for SDG 7 to 11

SDG 7 Affordable and clean energy	SDG 8 Decent work and economic growth	SDG 9 Industry, innovation, and infrastructure	SDG 10 Reduced inequalities	SDG 11 Sustainable cities
Modern infrastructure	Community resilience	Universal access	Displaced people	Renewable energy
Affordable energy	Human wellbeing and development	Restoration	Involuntary resettlement	Universal right to suitable housing
Reducing energy demand/consumption	Decoupling consumption from damage	Community management	Marginalized communities	Inclusive/cultural heritage
Non extractive	Safety net		Indigenous peoples	Minimum accepted standard housing
Community resilience	Welfare		Intersectionality	Environmental importance

Table 2. *Cont.*

SDG 7 Affordable and clean energy	SDG 8 Decent work and economic growth	SDG 9 Industry, innovation, and infrastructure	SDG 10 Reduced inequalities	SDG 11 Sustainable cities
Just transitions	Family assistance		Impacts of colonialism	Diverse land use
How to make energy greener and cheaper			Participation	Resiliency through cyclical systems and reciprocity
Jevon's paradox			Demarginalization of vulnerable groups	Safety
Sustainable infrastructure			Ethnicity	
Industry policy and incentive			Houseless people	
Consumer energy			Empowered	
Consumer choice				

The novel keywords for SDG 9 ("Industry, innovation and infrastructure") include "Universal access" and "Restoration" (Table 2). The overarching themes for SDG 9 that came out of the follow up workshops were, "Serving people locally and globally," "Improvement," "Uplifting communities," and "Reshaping." According to the notetakers, the discussions included the topics of "Global responsibility," "Equitability," and "Fairness."

The novel keywords for SDG 10 ("Reduced inequalities") include "Displaced people" and "Involuntary resettlement" (Table 2). Follow up workshops gave a few overarching themes for SDG 10, namely "Inclusivity," "Vulnerability," "Systemic racism/discrimination," "Social hierarchy," and "Classist systems." According to notetakers, the discussions included the topics of "Inequality awareness," "Social invisibility," and "Socioeconomic disparity."

The novel keywords for SDG 11 ("Sustainable cities") include "Inclusive/cultural heritage" and "Environmental importance" (Table 2). Follow up workshops gave a few overarching themes for SDG 11, namely "Environmental stewardship/consciousness," "Diversity/diversification," "Continuity," "Sustainable planning," and "Being mindful." According to notetakers, the discussions included the topics of "Accessibility," "Retrofitting," and "Practicality."

Table 3 displays the novel keywords for SDGs 12 to 16. The keywords for SDG 12 ("Responsible production and consumption") include "Accountability of companies" and "Scarcity" (Table 3). Follow up workshops for SDG 12 gave a few overarching themes, namely "Corporate social responsibility," "Ownership over actions,"

and "Green economy/rebirth." Discussions included the topics of "Universal rights protection," "Carbon footprint," "Transparency," and "Consumer knowledge of the market."

Table 3. Novel keywords for SDG 12 to 16

SDG 12 Responsible production and consumption	SDG 13 Climate Action	SDG 14 Life below water	SDG 15 Life on Land	SDG 16 Peace, justice, and strong institutions
Ethically sourced sustainable resources	Centralized government policy creation/regulation of GHG emissions	Definitions of various habitats	Land sovereignty	Dependability
Repurposed packaging	Expansion of community feedback mechanisms	Learn from sustainable blue economies	Treat land as renewable resources from generational viewpoint	Complaints
Divestment	Divestment	Harmonious exploration	Sustainable Development Models	Grievance
Biophysical limits	Community engagement		Relationships	Consent
Planetary boundaries	Accountability to climate impacts		Harmonious exploration	Reconciliation
Exclusion list	Responsible and collective actions			Enforcement
Accountability of companies	Causes of the problem			Free consent
List of reform instead of exclusion lists	Positive and negative outcomes			Prior consent
Responsible, ethical and sustainable forms/levels of consumption	Climate goal			Complete consent
Scarcity				Informed consent
Equitable protections				Ethical practices

Table 3. *Cont.*

SDG 12 Responsible production and consumption	SDG 13 Climate Action	SDG 14 Life below water	SDG 15 Life on Land	SDG 16 Peace, justice, and strong institutions
				Reparation
				Definitions of peace, justice, and strong institutions based on local context
				Agreement
				Harmony

The novel keywords for SDG 13 ("Climate action") include "Divestment" and "Community engagement" (Table 3). In the follow up workshops, the overarching themes for SDG 13 were "Community led climate action/activism," "Collective awareness," and "Society and Responsibility." According to the notetakers, topics of discussion included "Grassroots climate action," "Activism," "Respect for traditional practices," and the "Need to change mindsets on consumerism."

The novel keywords for SDG 14 ("Life below water") include "Harmonious exploration" and "Learn from sustainable blue economies" (Table 3). The overarching themes for SDG 14 are "Marine habitats," "Aqua health," "Protection and sustainability," "Education," and "Understand and learn from nature." According to the notetakers, topics of discussion included "Internationally recognized protected zones and habitats," as well as a need to learn to protect endangered and newly discovered species.

The novel keywords for SDG 15 ("Life on land") include "Land sovereignty" and "Harmonious exploration" (Table 3). From the follow up workshops, the overarching themes for SDG 15 are "International development," "Cultural impacts," "Protection, sustainability, and replenishment," and "Sovereignty and reorganization." According to the notetakers, topics of discussion included "Traditional practices," "Tenure systems," "Culture," "Religion," and "Power."

The novel keywords for SDG 16 ("Peace, justice and strong institutions") include "Harmony" and "Dependability" (Table 3). The follow up workshops gave a few overarching themes for SDG 16, namely "Government/political outlook for responsible governance," "Diligence," "Equity for all beings," and "Consent and communication (transparency)." According to notetakers, the discussions included the topics of "Culture," "Religion," "Power," and "Intersectionality."

4. Discussion

Generally, the participants discussed and reported several topics that were not found in the database. As the participants fit a specific slice of stakeholders, namely participants who are involved in environmentalism,

biology, and sustainability, they have much nuance to add to the discourse of the Sustainable Development Goals and their general policies. Certainly, their links to biodiversity conservation and environmentalism can offer an interesting viewpoint. One can look at the keywords, the themes, and the topics discussed to understand what can be included in the area of the SDGs. In many cases, the topics are probably not always absent from the entirety of the SDG literature, but participants may have applied them more explicitly to the SDG they were tackling.

4.1. Nature and biodiversity

As the stakeholders included those involved in biology and environmentalism, it is understandable that topics related to biodiversity and conservation came up. Much was related to water, including "Water for biodiversity," that arose as a novel keyword in SDG 6 ("Clean water and sanitation"). Interestingly, two related concepts prevalent in modern Ecological Economics, namely "Biophysical limits" and "Planetary boundaries," both arose as novel keywords for SDG 12 ("Responsible production and consumption") (Spash and Asara, 2017). "Restoration" also arose as a novel keyword for SDG 9 ("Industry, innovation, and infrastructure"), suggesting some participants may be in favor of restoring natural regions, perhaps to create more green space. Certainly, nature restoration has been argued as a way of achieving multiple Sustainable Development Goals (Sasmito et al., 2023).

A key argument in the field of environmentalism is whether Instrumental or Intrinsic values should be the focus of biodiversity conservation, and interactions with nature more generally (Piccolo, 2017; Yahya Haage, 2023a). In Instrumental values, nature is valued for what it gives humans, such as in Ecosystem Services (Piccolo, 2017; Yahya Haage, 2023a). In Intrinsic valuation, nature has value in and of itself, even if there were no humans to enjoy it (Piccolo, 2017; Yahya Haage, 2023a). Some have argued that Intrinsic valuation should be the basis of conservation, with Instrumental valuation applied when necessary (Piccolo, 2017). Some workshop participants seemed to fall closer to the Intrinsic side of the argument. For instance, the topic of "non-anthropocentrism" certainly fits well with this view. Relatedly, the overarching theme of "Inherent value of fresh water," for SDG 6 ("Clean water and sanitation"), certainly also seems to land on the side of Intrinsic valuation.

The overarching theme of "Equity for all beings," for SDG 16 ("Peace, justice, and strong institutions"), even brings both concepts of Intrinsic values and of justice into the decision-making process. Such views fit well with past scholarly work on "eco-impartiality," which also argues for equity with nonhumans (Hay, 2002, p. 56). The keyword "Water for nonhumans," for SDG 6 ("Clean water and sanitation"), certainly fits here as well. While more pragmatic, the overarching theme of "Environmental stewardship" for SDG 11 ("Sustainable cities"), also ties well with such a view of the natural world.

The results in this section could be seen as a message to the SDG community and the policymakers working in relevant fields. In essence, it argues that nature should not be considered solely instrumentally in SDG implementation.

4.2. Traditional knowledge and decolonization

One recurring theme was the importance of considering traditional knowledge and accepting it as a valid source for policy. For instance, traditional knowledge was included as a topic for both SDG 3 ("Good health and

wellness") and SDG 13 ("Climate action"). Relatedly, the importance of both culturally sensitive and culturally appropriate resources was key. For instance, "Culturally appropriate food" was a novel keyword arising from the activities. Another related novel keyword, for SDG 4 ("Education"), refers to "Valuing alternative knowledge/experience." Decolonization was also something that was discussed by participants. For instance, decolonization was a topic discussed for SDG 1 ("No poverty"). This link, between poverty and decolonization, has been discussed by past scholars (O'Sullivan, 2023). Notably, in the area of reducing inequalities, the keyword of considering the "Impacts of colonialism" was also novel.

Similarly, results show a strong link between biodiversity and Indigenous views. For instance, "Land sovereignty," "Traditional practices," and "Tenure systems" arose in discussions of SDG 15 ("Life on land"). The first was a novel keyword, while the others came up as discussion topics in the follow up workshops. Some Indigenous communities have critiqued the SDGs and sustainable development by arguing that it does not incorporate a key concept, namely that the Indigenous worldview is made up of many human and nonhuman entities, which must exist in harmony (Yap and Watene, 2019). Certainly, "human beings are understood to be only one part of a development story that includes and weaves all things in the world (and universe)" (Yap and Watene, 2019, p. 457). As such, development goals must include "shared origins, shared existences and interdependent futures" (Yap and Watene, 2019, p. 457). This also fits well with the, above discussed (section 4.1), related topics of "Non-anthropocentrism" and "Water for nonhuman," which arose in the workshops.

4.3. Concrete policies

Some of the responses made clear pushes for policies linked to sustainable development. For instance, "Universal Basic Income" is a novel keyword from the activities, and links to a specific policy. Universal Basic Income has certainly been argued as necessary for eradicating poverty (Hrubec et al., 2022). However, as discussed by scholars, Universal Basic Income remains a controversial position among many people (Yeung, 2024). As such, it is interesting that some participants saw this policy as vital.

Another novel keyword that is directly tied to policy is divestment, which was included in SDG 12 ("Responsible production and consumption"). As such, several participants consider that true responsible consumption and production for society requires moving away from investment in certain fields. In the general discourse of divestment, this often refers to stopping investments to fossil fuel companies, for both direct environmental issues and the economic risk of stranded assets (Mangat et al., 2018). A related topic, which ties into environmentalism as well, is the topic of "Decommodifying water." This topic also suggests concrete political actions, as discussed by scholars (Jensen and Yusuf, 2017).

Another topic that links directly to policy is "Maternity/paternity leave," which came up in terms of SDG 1 ("No poverty"). This fits with past work that links such policies to poverty eradication (Nieuwenhuis and Maldonado, 2015). Other concrete policies discussed include "Reparations" and "Reconciliation." Reconciliation is generally a term used in relation to Indigenous communities (Little and Maddison, 2017; Burridge, 2009). As such, this links well with the discussion of respecting other traditions, including in terms of traditional food knowledge, as discussed for SDG 2 ("Zero hunger"). Similarly, reducing the inequalities in relation to Indigenous peoples is a keyword for SDG 10 ("Reducing inequalities").

Reparations can span many different types of approaches (Wolfe, 2014; NAACP Resolutions Committee, 2019). Previously published data, that surveyed several of the same participants as these SDG activities,

showed support for several types of reparations, including payment to Indigenous leaders and investment in infrastructure (Yahya Haage, 2023b). While that involved a specific case of a corporation causing damage, it is still illustrative of the variability of potential reparations (Yahya Haage, 2023b). Regarding sustainable development, past research has discussed how reparations could positively affect sustainable development (Richards, 2019).

By considering concrete policies, the participants are targeting the operative level of the SDGs (Sumaila Mohammed et al., 2023). If a lesson is taken from this set of results to the wider SDG community, it is that there are clear, concrete steps that can, and should, be taken, both to include diverse stakeholder views and to strive towards SDG implementation.

4.4. Justice and the legal sphere

Interestingly, in terms of justice, the participants extended this topic beyond SDG 16 ("Peace, justice, and strong institutions"). For instance, "Food justice" was one of the overarching themes for SDG 2 ("Zero hunger") and "Addressing injustice in the health system" was a theme in SDG 3 ("Good health and wellness").

Inequity and inequality were common themes, present in several SDG discussions, including SDG 1, 2, 3, and 7. An interesting novel inclusion from the participants regards definitions of "Peace, justice, and strong institutions" that are based on the "Local context." This would certainly also fit with the references, by participants, to the importance of "Spirituality" and "Religion." Such perspectives have been discussed by scholars and can include allowing Indigenous or religious courts for certain types of legal cases or including such distinct views in standard courts (Masci and Lawton, 2013; Gagnon, 2013; Holding, 2022). This remains controversial, as discussed by scholars (Masci and Lawton, 2013; Bano, 2023), so it is notable that some participants in the workshops seem to support such approaches. Finally, in terms of "Peace, justice, and strong institutions," there were several related keywords around consent. This certainly demonstrates the importance the participants place on this concept.

Relatedly, the inclusion of religion, spirituality and different worldviews fits well with past critiques of the SDGs. For instance, it has been argued that religions have to be considered more when dealing with the SDGs (Freston, 2020). The influence of religions on development and how development, and its rhetoric, will impact religion seemed to be a key point for some participants.

4.5. Activity results and alternatives to the SDGs

Interestingly, some of the results from these workshops touch on, at least some, of the changes advocated by alternatives to the SDGs, such as the Ecological Economics Goals (EEGs) (Quilley and Kish, 2019). Notably, Ecological Economics has a focus on the biophysical limits of nature and the planet (Spash and Asara, 2017; Williams and Lawn, 2022). As mentioned in section 4.1, "Biophysical limits" was a keyword that arose for SDG 12. In terms of other similarities to participant results, the keywords referring to "Local" and "Traditional" solutions advocated by some workshop participants fit well with the EEG's emphasis on the importance of lower, often family-level, connections, as well as local cultures (see Quilley and Kish, 2019). Interestingly, as discussed by EEG advocates, Jevon's Paradox marks one potential failing of the SDGs (Quilley and Kish, 2019). Jevon's Paradox is the notion that "efficiency gains [tend] to fund renewed investment, technical innovation,

more rapid product cycles, and further expansion in the scale of production and consumption" (Quilley and Kish, 2019, p. 171). For example, a more fuel-efficient car would eventually lead to greater overall production and consumption. The keyword of "Jevon's Paradox" was included by participants for SDG 7 ("Affordable and clean energy") but was missing from the SDG database. This suggests the workshop participants are keenly aware of certain economic issues not widely discussed by research on the SDGs. The fit between participant results and the EEGs is not perfect, of course, as calls, by some participants, for a "Marxist feminist" approach would not fit with the EEGs (see Quilley and Kish, 2019).

Interestingly, for the SDG regarding "Gender equality" (SDG 5), some suggested a "Marxist feminist" outlook and emphasized "Recognition of unpaid domestic work." As seen in the literature, feminist criticisms of the SDGs have emerged (Taylor and Mahon, 2020). A key criticism by such scholars is that, while the SDGs are a step forward for gender equality, it is insufficient in terms of recognizing unpaid work that aids society, which is often done by women (Taylor and Mahon, 2020). As such, the views of some participants certainly fit with criticisms of the SDGs by other scholars.

It is interesting that both Marxism (SDG 5) and considering "Power" (SDG 15 and 16) came out in the workshops, the latter as a part of a novel keyword and the former as a discussion topic. As Marxist critiques of the SDGs point out, it is important to consider power and "material inequality" (Weis and White, 2020, p. 77). As argued, it may be necessary to treat "unequally those who are materially unequal" (Weis and White, 2020, p. 77). In fact, in this view, the notion that the SDGs can help the disadvantaged without "affecting the privileged position of those currently in power," is false (Weis and White, 2020, p. 77). Relatedly, a Marxist critique of the SDGs argues that there must be an emphasis on grassroot movements to achieve benefits for society (Weis and White, 2020). The workshop participants may have been thinking on similar lines, particularly as some also developed the overarching theme of "Community led climate action/activism" for SDG 13, and the need for grassroots efforts was also a topic of discussion for that SDG.

The results of this section show some participants find common ground with SDG alternatives. This sends the message that the SDG community may want to strongly consider or incorporate aspects of these alternatives so as to be in line with some SDG stakeholders.

5. Conclusion

In general, the participants brought up several novel keywords that were not present in the SDG database. As demonstrated in the discussion section, several of these keywords, and related themes, are not unknown in relevant literature, even if not explicitly in terms of the SDGs. As such, the participants could encourage the discussion of new themes. Notably, some keywords were applied to SDGs with which they may not originally have been linked (e.g. "Voter representation" for SDG 1), allowing a more expansive approach to the SDGs. Also, the results came from participants fitting a stakeholder niche, one that may not always be considered explicitly, particularly for those involved in biology. Arguably, this may have led to a bias in results, focusing on aspects of the SDGs that fit with this stakeholder niche. However, understanding how different stakeholders approach the SDGs is a clear benefit as the SDGs are discussed and implemented in society. Future research could run similar activities with other categories of stakeholders, to determine whether similar themes arise.

Acknowledgments

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