
PEER REVIEWED ARTICLE

Stakeholders' Perceptions of the Linkage Between Reproductive Rights and Environmental Sustainability

Céline Delacroix¹

University of Ottawa

Abstract

The fulfilment of reproductive health and rights may have a synergistic relationship to environmental sustainability because it leads to lower fertility levels. With this in mind, and with the objective of increasing the legitimacy, funding and acceptance of reproductive health and rights, I conducted a mixed-methods qualitative study consisting of an online survey followed by in-depth interviews. I reached out to two groups of participants: stakeholders of the reproductive health and rights movement, and stakeholders of the environmental sustainability movement. I explored how stakeholders perceived the linkages between family planning, population growth and environmental sustainability. Results indicate that these stakeholders overwhelmingly support the integration of the reproductive health and rights ideological framework in a wider sustainability frame reflecting environmental considerations. I identified three barriers to both addressing and implementing the linkage: responsibility allocation injustice, colonialism and discrimination, and marginalisation. Environmental sustainability and reproductive health and rights stakeholders appear in favour of applying what could be considered 'environmental mainstreaming' to the reproductive

¹ cdela017@uottawa.ca.

health and rights field. Environmental sustainability stakeholders were more likely than reproductive health and rights stakeholders, who were more divided on this issue, to endorse the linkage and related concepts.

Keywords: family planning; reproductive rights; environmental sustainability; population ethics; population growth.

Scholars are increasingly drawing attention to the linkage between global population size, environmental degradation and climate change (Coole, 2016; Newman et al., 2014; The Lancet Planetary Health, 2019). My goal in this article is to analyse whether this linkage should be harnessed to increase the legitimacy, funding and acceptance of reproductive health and rights.

Access to reproductive health care and other programmes that facilitate the exercising of reproductive health and rights are underfunded (Girard, 2017; Pathak and Tariq, 2018) and politically vulnerable (Gilby and Koivusalo, 2020; Kaufman, 2020). Progress is unacceptably slow for reproductive rights, as numerous barriers to family planning continue to exist, particularly for vulnerable groups such as migrants, refugees and adolescents (UNFPA, 2016a, 2016b; United Nations Meetings Coverage and Press Releases, 2015). For these reasons, new pathways to respect, protect and fulfil reproductive rights need to be pursued.

Reproductive rights rest on the recognition of the basic right of all couples and individuals to decide freely and responsibly the number, spacing and timing of their children and to have the information and means to do so, and the right to attain the highest standard of sexual and reproductive health (United Nations Population Fund, 1994). As such, inadequate supplies of safe and effective contraceptives, including the range of methods available, general barriers to contraception and poor-quality services all contribute to reproductive rights violations (Hardee et al., 2014).

Studies of global emission scenarios demonstrate that slowing population growth could lead to substantial emissions reductions and play an important role in avoiding dangerous climate change (Bongaarts and O'Neill, 2018; O'Neill, et al., 2010). Population dynamics can therefore be perceived as a variable in climate change adaptation and mitigation. While much research still needs to be done

to better understand the drivers of human fertility (Sear et al., 2016), we know that access to family planning lowers fertility levels (Engelman, 2009; Engelman et al., 2016; Intergovernmental Panel on Climate Change, 2014). In turn, because the fulfilment of reproductive health and rights lowers fertility levels, these rights can be considered as positively related to environmental sustainability. Fulfilling reproductive health and rights may benefit environmental sustainability in multiple ways, going beyond its impact on fertility. For example, it might facilitate greater women's agency and, through that, improved stewardship of the environment (Bell and Braun, 2010; Lv and Deng, 2019; Morgan and Winkler, 2020).

Conversely, reproductive health and rights may benefit from environmental sustainability. Research demonstrates that climate change and environmental degradation are a direct threat for global health, and an important driver of health inequities (Costello et al., 2009; Patz et al., 2007; Sellers and Ebi, 2018; Watts et al., 2018). Moreover, linking the fulfilment of reproductive health and rights with improved environmental sustainability may change how reproductive health and rights are perceived, as they give rise to a different type of social appeal. Kimport (2016) documented how framing a sensitive issue in a new light (in that case, marriage equality) enabled it to appeal to new audiences, widen the cultural resonance of its claims and diversify its organisational structure. Reframing reproductive health and rights to include beneficial outcomes on environmental sustainability has the potential to strengthen these rights, and could generate new or broader programmatic and funding opportunities (Newman et al., 2014; *The Lancet*, 2009). It is with this in mind that I asked participants if the reproductive health and rights ideological framework should be integrated in a wider sustainability frame reflecting environmental considerations.

Yet the reproductive health and rights and environmental sustainability linkage (hereafter referred to as 'the linkage'), despite the opportunities that it might represent for both fields, remains largely understudied (Engelman, 2009; Murtaugh and Schlax, 2009; *The Lancet*, 2009). Scholars have documented many reasons for this status quo, at the heart of which are ethical dilemmas, the spectre of coercive population control programmes and misconceptions associated with population policy (Bongaarts and O'Neill, 2018; Kopnina and Washington, 2016; Newman et al., 2014). The need for a sustained critical analysis of the questions surrounding the linkage, and for finding ways to frame them in a politically and

ethically acceptable manner is well established (Coole, 2016; Newman et al., 2014). I address this understudied facet of the linkage by exploring how stakeholders of the reproductive rights and environmental sustainability movements perceive these issues.

Methods

A qualitative approach was chosen as the most appropriate methodology for this research project because it allows for exploring people's insights and perceptions of an experience or phenomenon, informing the development of interventions and understanding better barriers and facilitators to their successful implementation (Denny and Weckesser, 2019). I conducted a multi-methods qualitative research with data collection between March and September 2019. The study consisted of an online survey (N=153) followed by in-depth interviews (N=14) with key informants. I chose to perform an online survey to reach out to a large and global audience in a fast and efficient manner (Evans and Mathur, 2005). The in-depth interviews provided an opportunity to gather participants' perceptions and opinions in a more flexible and thorough manner. In both the survey and interviews, I focused on the perspectives and experiences of active stakeholders in the reproductive health and rights and environmental sustainability movements about the linkage and on how they dealt with its controversial nature. Eligibility was based on self-identification as being active in the reproductive health and rights and/or environmental sustainability movements. By 'active' I meant to identify people with a marked interest or concern for one or both of these movements and/or for whom these issues influence their work, activism, and/or engagement.

Data Collection: Online Survey

I recruited participants by contacting researchers, organisations and governmental bodies active in the reproductive health and rights and/or environmental sustainability fields as well as by circulating invitations through listservs, personal and professional networks and word-of-mouth. Conscious efforts were made in recruitment efforts to reach out to a wide variety of experts to reflect different viewpoints and to reach out to participants in various parts of the world for global representation. In total, we sent over 900 invitations. I made the survey available via SurveyMonkey, an online survey software, for a period of 46 days. The survey contained eight introductory background questions followed by sixteen multiple choice (close-ended) questions and thirteen open-ended questions, broadly

ordered by level of sensitivity. I used survey design guidelines to generate rich and clear content. For example, I ended the survey with an invitation to share any additional information that the participant felt was relevant (Braun et al., 2020).

Broadly, the survey consisted of questions on participants' backgrounds, perceptions and framing of the linkage, including on its controversial nature, opinions on the potential scope of related interventions, and perspectives on social norms related to fertility.

I obtained 153 complete responses, a number that is lower than but comparable to another expert survey on population and climate change (van Dalen and Henkens, 2021). I adopted a flexible approach to choose the sample size, one that recognises that an adequate number is relative, and must balance the richness of data with the depth of analysis (Sandelowski, 1995). Determining sample size was thus an iterative process guided by the adaptive approach of thematic saturation (Sim et al., 2018). Broadly speaking, thematic saturation is reached when no new ideas that critically change the overall findings emerge in new data (Mason, 2010).

Data Collection: In-depth Interviews

After completing the survey, participants were directed to a separate webpage and asked whether they wished to participate in a telephone/Skype interview. All participants who expressed an interest in the follow-up interview were contacted, and fourteen telephone/Skype in-depth, semi-structured interviews were conducted with those that responded to the invitation. The number of in-depth interviews conducted depended primarily on the number of online survey participants who agreed to participate in follow-up interview, but after completing the fourteen interviews, thematic saturation was achieved.

After obtaining each participant's consent, I conducted, recorded and transcribed all interviews in English. These lasted approximately 45 minutes. The interview guide consisted of 21 open-ended questions, broadly ordered by level of sensitivity. Each interview began with a review of the participant's background (age group, profession, country of origin/living) and engagement with the linkage. Questions followed on perception, framing, sensitivity, opportunities and governance related to the linkage, as well as on the acceptability of global population policies. These questions were drafted with the preliminary results of the online survey in mind. The in-depth interviews provided opportunities for

participants to steer the conversation towards their concerns and interests and allowed for a rich exchange experience.

Data Analysis

Across all the steps of this project, I engaged in researcher reflexivity by acknowledging and describing my position on this issue, and by bracketing my own biases during the research process (Tufford and Newman, 2012). I situated this project in a framework resting on the following axioms: anthropogenic impact creates environmental degradation and climate change (Whitmee et al., 2015); population size is a variable in anthropogenic impact (Ehrlich and Holdren, 1971); widening the ideological framework of reproductive rights to include environmental sustainability may present opportunities to advance the reproductive rights and health field (Newman et al., 2014). In order to avoid restricting the inquiry of participants' lived experience of the linkage, I refrained from adopting a pre-defined theoretical framework, a method known as 'theoretical agnosticism' (Pidgeon and Henwood, 2004).

Throughout the data collection process, I used memos to capture important themes and reflect on the meaning and significance of individual responses as well as on the data collection process and positionality. Each component of the study was analysed separately and sequentially, starting with the online survey. Excel and Survey Monkey were used to obtain descriptive statistics.

Online survey results were analysed by reviewing each participant response individually and sequentially. I strived to identify underlying themes presented through the data. To do so, I organised responses in a combination of pre-determined and emergent codes and categories (Elo and Kyngäs, 2008). In parallel, I paid special attention to outliers, or responses that did not fit in conceptual categories, and treated them as relevant findings manifestations of important human diversity (Mcpherson and Thorne, 2008). The NVivo software was used to help organise and manage individual responses data.

I developed the in-depth interview questionnaire while analysing the online survey results, and integrated some of the survey findings into the in-depth interview questionnaire. For example, I asked, 'In the survey results, numerous participants indicated that the population factor should be omitted because its relation to environmental impact isn't direct ... How would you react to this?'

I studied in-depth interviews in the light of the preliminary online survey themes. I also produced memos after each interview to reflect on the content and process of the interview (DeJonckheere and Vaughn, 2019). Memos were organised as a running list of thoughts and comments.

In the last phase of the analytic plan, I finalised a list of themes and key points emerging from both the online survey and in-depth interviews to discuss and went back to the raw data for further data investigation and quote extraction. Table 1 presents this list. All the emergent themes were included in the analysis of this paper, with the exception of education and fertility desire, which will be addressed in a separate paper.

Table 1: Emergent themes

Abortion
Capitalism
Climate skepticism
Colonialism
Cultural norms
Discrimination
Earth carrying capacity
Education
Environmental degradation and climate change
Fertility desire
Food security
Gender equality
Ignoring the linkage
Individual v collective rights
Interdisciplinary nature of the linkage
Marginalization
Population control and coercion
Population growth, size and reduction

Population size as a taboo
Poverty
Racism
Religion
Responsibility allocation injustice
Sexuality education
Strong emotional reactions

The themes arising from the in-depth interviews were broadly aligned with those of the online survey. While I start by presenting the results of the close-ended survey questions exclusively below, the rest of the paper presents the survey and in-depth interviews conjointly. Two investigative approaches were thus used: an online survey and in-depth interviews. Using different research methods contributes to enhancing the confidence in the ensuing findings. This process is called methodological triangulation (Mayer, 2015).

Ethics

I received approval to conduct this study from the Social Science and Humanities Research Ethics Board at the University of Ottawa (File #12-17-05). To protect the identity of the participants, all personally identifying data was masked or redacted.

Results

Participants' Characteristics: Online Survey

Table 2 provides an overview of online survey participants' characteristics.

Table 2: Online survey participant characteristics (N=151)

Characteristics		%	Number of participants
Regional group	Africa	21	32
	Asia	5	7
	Europe	25	37
	North America	43	65
	South America	3	4

Characteristics		%	Number of participants
	Global/ International	3	5
	No response	0.7	1
Age group	Under 35	28	43
	Between 35-50	38	57
	Over 50	33	50
	No response	0.7	1
Identified as	Environmental sustainability policymaker, academic or advocate	51	77
	Reproductive health and rights policy maker, academic or advocate	31	47
	Identified as both of the above	14	21
	Other	3	5
	No response	0.6	1
Participant titles	Director/CEO/ President/ Manager	17	25
	Officer/Advisor/ Consultant/ Specialist	38	57
	Engineer/ Scientist	5	8
	PhD/Master Student	22	33
	Teacher/Professor	9	14

Characteristics		%	Number of participants
	Other	5	8
	No response	4	6

Participants' Characteristics: In-depth Interviews

Of the fourteen in-depth interviews participants, ten came from the United States or Canada, and the four others came from Egypt, Holland, Nigeria and South Africa. I asked participants about their age: eleven were between the ages of 25 and 45 and three were over fifty. Their professions focused on reproductive health and/or rights (#6), the natural sciences (#4), law (#1) or both reproductive health and/or rights and environmental sustainability (#3).

Survey Results: Framing Reproductive Health and Rights in a Climate Emergency

In the online survey, I asked a series of close-ended questions to evaluate how participants felt that reproductive health and rights could or should be framed in the context of heightened environmental degradation and climate change. When participants were asked whether they were in favour of widening the ideological framework of the reproductive health and rights movement to reflect environmental sustainability considerations, a large majority from both movements agreed: 93 participants (62 per cent) accepted the proposition that the impact of environmental degradation on global health increased the relevance of population dynamics for reproductive health and rights policy (37 were unsure (24 per cent), and eighteen disagreed (eleven per cent)). Participants who identified as stakeholders of the reproductive health and rights field were more likely to disagree with this proposition.

Of all the participants, 92 (61 per cent) found that family planning could be considered as a pathway to resilience because of its impact on fertility levels (28 were unsure (eighteen per cent), and 28 disagreed (eighteen per cent)); 84 participants (56 per cent) found that the fact that slowing population growth could play an important role to avoid dangerous climate change should influence our understanding of reproductive health and rights (26 were unsure (seventeen per cent), forty disagreed (26 per cent)). Again, participants identifying as stakeholders of the reproductive health and rights movement were more likely to disagree with this proposition.

A large majority of participants (101, or 67 per cent) felt that we needed to strive to reconcile and integrate the linkage's fields to advance them both (21, or fourteen per cent, disagreed and eleven, or seven per cent, were unsure). Participants identifying as stakeholders of the reproductive health and rights movement were twice as likely to reject this premise and were less likely to approve it as well.

I asked whether population size related to environmental sustainability, and 127 participants (86 per cent) agreed with this proposition, indicating overwhelming agreement. Some pointed to the arithmetical role of population size to generate impact, 'YES – size is related to the magnitude of environmental impact', while others indicated that population size influenced land, water, and natural resource use as a whole. Survey participant 24, from the United Kingdom, wrote: 'Bangladesh has now over 160 million population and 85% of all cultivatable lands are already used. If population doubles what will happen?' Table 3 summarises online survey participants' reactions to statements about the connections between family planning, population growth and environmental sustainability.

Table 3: Participants' reactions to statements on the relationship between environmental degradation, family planning, and population growth

Statement/question	Answers	Number of participants	%	Notes
The impact of environmental degradation on global health increased the relevance of population dynamics for reproductive health and rights policy.	Agree	93	62	
	Unsure	37	24	
	Disagree	18	12	
	No response	3	2	
Family planning could be considered as a pathway to resilience because of its impact on fertility levels.	Agree	92	61	Reproductive health and rights field more likely to reject this proposition.
	Unsure	28	19	
	Disagree	28	19	
	No response	3	2	

Statement/question	Answers	Number of participants	%	Notes
Slowing population growth could play an important role to avoid dangerous climate change and should influence our understanding of reproductive health and rights.	Agree	84	56	Reproductive health and rights field more likely to reject this proposition.
	Unsure	26	17	
	Disagree	40	26	
	No response	1	1	
We need to strive to reconcile and integrate the linkage's fields to advance them both.	Agree	101	67	
	Unsure	11	7	
	Disagree	21	14	
	No response	18	12	
Does population size relate to environmental sustainability?	Agree	104	69	
	Unsure	21	14	
	Disagree	24	16	
	No response	2	1	

Whilst a large majority of participants endorsed the linkage, a minority disagreed with the idea that reproductive health and rights and environmental sustainability should be linked. Many others were supportive of the idea of integrating reproductive health and rights and environmental sustainability but expressed concerns as to how to achieve this both at the conceptual and practical levels.

Survey Results: Outliers

A small number of participants' answers stood out from the majority of the data obtained, and these were considered as outliers. Two groups of outliers were identified: those who were sceptical of climate change and/or the depletion and degradation of natural resources, and those who considered that addressing the family planning and environmental sustainability linkage was a disguised way

to promote abortion and coercive reproductive health methods. Both groups consisted of a small number of participants, with nine for the first, and four for the latter. I hereafter present the three emerging themes that summarise the barriers that participants identified to address or implement the linkage: responsibility allocation injustice, colonialism and discrimination, and marginalisation.

Barriers to Addressing the Linkage: Responsibility Allocation Injustice

Many participants felt that there was a fundamental injustice inherent in the linkage, stemming from the contrast between the high consumption patterns/low fertility levels of the Global North, and the low fossil-fuel consumption/high fertility of the Global South. Survey participant 140, from Nigeria, wrote: 'While population size does have a role to play on environmental sustainability, the main culprits of climate change are countries whose populations are either stable or in decline.' Addressing the linkage was therefore contradictory or difficult for some as it was perceived as an unjust displacement of responsibility, targeting the wrong group (the Global South) with the wrong intervention (population size). Many participants stressed that consumption patterns, and a reliance on fossil fuel-based energy, constituted the primary driver of environmental impact. Whilst a large majority of participants agreed that population size was related to environmental sustainability, several were reluctant to address the role of population size because they perceived other factors to be more important in determining environmental impact.

One follow-up interview participant from the United States explained that she had developed a strategy to address the linkage without being perceived to unjustly allocate responsibility to groups with higher fertility levels. She stressed the importance of acknowledging this problematic:

When I started out ... I would make presentations in Sub-Saharan Africa, and the first thing I would get up and say is 'OK, let's just get this out: Climate change is my fault. It is my consumption and my country.' That sort of cleared the air. It wasn't me standing up and saying, 'Oh, you know, you people need to look at how many kids you have.'

A few participants feared that the linkage might exacerbate global injustices by spreading the idea that countries with higher levels of fertility were responsible

for environmental degradation and climate change, thereby freeing the Global North from part of its historical and ongoing responsibility in this matter. Survey participant 49, from the United States, wrote:

In many ways, this focus on family planning and population size as a mitigating factor for climate change gives oil companies, western governments and others a pass when it comes to their culpability for the climate.

While many participants indicated that it tended to be the highest fertility groups that had the lowest environmental footprints, few addressed how changing standards of living might impact this status quo, despite global efforts to eradicate extreme poverty. Survey participant, 153, from the United States, wrote:

You can have a relatively small population and with high living standards and a large environmental impact. Vice versa, you can have a relatively large population with many people living in poverty and a relatively small environmental impact. 'The rubber hits the road' where you want to raise living standards for a large and growing world population.

The relation between poverty, environmental degradation and climate change is a complex one, and participants identified poverty as being both a driver of environmental degradation and a barrier to addressing the linkage. Survey participant 77, from Canada, wrote:

I worked in protected area conservation. Population pressures were often an issue. Some protected areas are the only remaining sources of cheap fuel (wood), food (bushmeat) or wildlife (for the wildlife trade). Poverty, more than population pressure, was the biggest risk factor.

Many participants stressed that achieving environmental sustainability was intimately associated to social justice goals. Survey participant 93, from Canada, wrote:

The world has a carrying capacity for humans and economic activity that has to be determined and respected, otherwise humans and the environment will both suffer. Living within the [earth's] means is possible

but the distribution of wealth needs to be considered so that there is enough for everyone instead of too much for a minority. Here is a new economic growth paradigm to consider pursuing, 'enough is best'.

Barriers to Addressing the Linkage: Colonialism and Discrimination

The next barrier to the linkage expressed by participants is closely related to the first one in that it is also rooted in the injustice stemming from systemic power imbalances between the Global North and Global South, and/or between discriminating and discriminated groups more broadly. The history of population control programmes and proponents' discrimination and human rights abuses contributed to the reluctance of several participants to perceive the linkage as a way to advance reproductive health and rights.

To a large extent, the above-described responsibility allocation injustice was associated to the systemic power imbalances illustrative of colonialism and discrimination towards women and marginalised populations, including indigenous people, racial/ethnic/religious/socio-cultural minority communities and people with disabilities, thereby creating a double injustice. Survey participant 109, from the United States, wrote:

This feels like a tool to instrumentalize already vulnerable populations into serving a priority need identified by the Global North ... It feels like another misguided attack on populations that are already subjected to the throes of Western powers.

Addressing the linkage involves delving deep into sensitive ethical questions related to reproductive health and rights, at the centre of which are access to family planning and fertility preferences. A few participants raised concerns of cultural imperialism. Survey participant 37, from Canada, wrote:

I've heard women such as Nigerian scientist Obianuju Ekeocha argue that Western advocacy for contraception in Africa amounts to a kind of neocolonialism, an imposition of Western views that is contrary to some African views on fertility.

A few participants stressed that indigenous people's voices on the linkage needed to be heard because of their related history of abuse by colonialist powers and because of the wealth of their traditional wisdom on this subject.

Participants referred to the tangible and concrete negative environmental consequences of an increasing population size. While participants from all geographical locations expressed concern for the impact of population growth on land use, deforestation and water pressure, those from the Global South were more likely than those from the Global North to express this view. Survey participant 57, from Nigeria, wrote:

Population size relates very much to environmental sustainability. In the days of our grandparents, farmers were able to practice shifting cultivation and that allows the soil to regenerate naturally. At the present, the population increase has reduced the size of cultivable lands available to individuals, and these lands are put into production yearly which leads to decrease in yield. Unless a conscious effort is put in place to replenish the soil, famine will be the end result in the future.

Participants from Africa referred to ongoing programmes aiming to stabilise or reduce fertility levels in their own countries (Democratic Republic of Congo and Nigeria), or to broader governmental interest on this issue. These participants did not express concern for the compatibility of these programmes with human rights, but pointed to the fact that they contributed to removing barriers to family planning. Survey participant 73, from the Democratic Republic of Congo, wrote:

In my country, we have the department of Sexual and Reproductive Health. More activities are being implemented in this area: we have programs based on family planning, the use of condoms and contraception methods aimed at reducing the numbers of births and increasing births that are desired and birth spacing.

One participant from Sub-Saharan Africa explained that she avoided documenting the benefits of the linkage out of fear of displeasing external, Global North funders. Survey participant 140, from Nigeria, wrote:

In my own context when implementing family planning programs, we tend to avoid references to the demographic and economic benefits of family planning and focus almost entirely on health benefits. This is largely because family planning is funded by external donors and as such viewed as being a means of population control by foreign governments.

Global North participants thus expressed fears of engaging in forms of neo-colonialism and Western imperialism by promoting or acknowledging the linkage. While such fears were echoed by some Global South participants, this group was also more likely to refer to the tangible and concrete negative environmental consequences of an increasing population size.

Barriers to Addressing the Linkage: Marginalisation

Marginalisation processes took place at multiple levels surrounding the linkage. First, because addressing the linkage is sensitive, it is easily and often avoided, ignored or minimised. Survey participant 8, from the United States, wrote:

The environmental movement doesn't want to touch reproductive health and rights because they have become so sensitive. The reproductive rights movement is suspicious of efforts to link population dynamics with climate change – we need each community to be better educated on the topics – but minds are hard things to change.

At least thirteen participants also referred to religion as a related matter, constituting a barrier to recognising and acting upon the linkage. They pointed to the difficulty of addressing this issue with others from a different religion or culture, to the rejection of family planning by some religious traditions/interpretations and to the likely disapproval by some religious leaders and religious traditions of messaging encouraging smaller families.

Secondly, the linkage is marginalised because it is of an interdisciplinary nature, being situated at the crossroads of the fields of reproductive health and rights and environmental sustainability. Participants referred to the interdisciplinary nature of the linkage in several ways. Several pointed to opportunities that might arise for the environmental and reproductive health and rights movements

respectively, should they engage in a more inter- or trans-disciplinary approach. Survey participant 84, from Indonesia, wrote: 'Now more than ever there's a need to break down barriers and work for common, interlinked global goals.' However, many also identified interdisciplinarity as a barrier to addressing the linkage. Participants pointed to segregated funding streams, lack of multidisciplinary skills and training, and different language and interaction spaces as barriers created by the interdisciplinary nature of the linkage.

Compounding this problem were the general marginalisation of reproductive health and rights and environmental sustainability issues and how conceptually unrelated to each other these disciplines stood from each other. Survey participant 142, from the United States, reflected on the barriers to the integration of the reproductive health and rights and environmental sustainability movements:

Perhaps the greatest barrier is that both the reproductive rights and environmental sustainability movements feel that they already have their backs to the wall on their siloed issue, a situation that can only worsen if they take on the other controversial issue.

Finally, at least one participant pointed to the fact that the environmental movement and discourse were more associated with a natural science approach. Survey participant 28, from the United States, wrote:

As climate change has grown more salient within the environmental movement, the actors working within it have become more strongly integrated with the energy field, which is composed of more cautious, STEM-oriented professions than the more activist, liberal arts-oriented population that advocates most strongly for reproductive rights.

In the online survey, I also asked participants about topic sensitivity – that is, 'the level of uneasiness with which they would talk about an issue to others'. I asked participants to rate the linkage's topic sensitivity both in their professional and everyday lives. A large majority identified the linkage as highly or moderately sensitive, as opposed to somewhat or not at all sensitive. Table 4 presents these results.

Table 4: Topic Sensitivity

Setting category	Answers	Number of participants	%
Professional life	Highly sensitive	48	32
	Moderately sensitive	50	33
	Somewhat sensitive	29	19
	Not at all sensitive	20	13
	No response	4	3
Everyday life	Highly sensitive	39	26
	Moderately sensitive	60	40
	Somewhat sensitive	28	19
	Not at all sensitive	22	15
	No response	2	1

Several participants talked about the need to integrate the linkage into policy agendas and found that reducing sensitivity constituted one step towards this. Survey participant 8, from the United States, wrote: 'Thanks for doing this survey – we need to keep talking about this topic – and hopefully desensitize it'. I also asked whether participants felt reluctant to express their opinions in their professional fields on the linkage because of its associated stigma. A majority of those that responded indicated that the linkage was so important that it shouldn't be ignored. Survey participant 80, from Zimbabwe, wrote: 'No (I am not reluctant). Despite the stigma, this concern is to be addressed at all cost. I always find ways to engage the participants'. Those who felt reluctant to address the linkage feared being perceived as promoting a message that was at odds with reproductive autonomy or societal norms; evocative of past population control measures; or sexist or racist. Survey participant 13, from Kyrgyzstan, explained being reluctant to address the linkage because of the existence of strong patriarchal norms and practices. Participants pointed to the need to adopt a careful language when

raising the linkage to avoid being perceived negatively. Many also expressed that their reluctance was situation-dependent, where those who were in government or had to communicate to the public, media or policymakers found it more difficult than those who were in employment at research-based or academic workplaces. When asked about reluctance to address the linkage, survey participant 29, from Germany, wrote: 'Among colleagues, no. But when speaking to the public or policymakers or media, yes'. Participants who were reluctant to express their opinions explained that this was due to their professional environment's limited awareness on this issue, or to the fact that they expected their opinions to be dismissed if they expressed them.

Two categories of factors contributing to the marginalisation of the linkage as a subject matter can be identified. First, results indicate that conceptualising the fulfilment of reproductive health and rights as a tool or opportunity to further goals that reach beyond private and individual rights is a proposition that is highly contentious for some. A few participants perceived that the linkage epitomised the tension between individual and collective rights, and/or was evocative of the coercive practices that took place under population control policies.

The second factor contributing to the marginalisation of the linkage was uncertainty. Some participants had never encountered or reflected upon this issue prior to taking the survey, whilst others reflected on how little they knew of it. Many pointed to the lack of knowledge and unavailability of data surrounding this issue. Survey participant 137, from the United Republic of Tanzania, wrote: 'There is limited data and information on these linkages.' There was also widespread confusion about the positions of the reproductive health and rights and environmental sustainability movements towards the linkage. While a majority perceived it as being ignored or rejected by those working in their fields, a few viewed it as an accepted premise. Survey participant 129, from Canada, wrote: 'There is a common understanding that reproductive rights will result in population reduction which will reduce pressure on limited natural resources and the environment.'

Environmental sustainability stakeholders were much more likely than reproductive health and rights stakeholders to state that those working in their field recognised, or acknowledged, the linkage. Survey participant 147, from

Canada, wrote: 'Realistically, few people in reproductive health probably consider links with environmental sustainability.' Participants from both fields noted that younger persons working in their fields were more likely to endorse the linkage.

Marginalisation processes also took place at the individual level, as the linkage gave rise to strong emotional responses. Participants' responses indicated that they experienced a (sometimes very strong) emotional response when reflecting on the linkage. On one hand, the linkage's absence in the policy sphere caused a sense of disempowerment and anguish for many participants. They felt an urgent and strong need to include the role of population as a variable in generating environmental impact. Others expressed relief and gratitude for being given the opportunity to reflect, and/or for disciplinary inquiry into this field through this research. Survey participant 139, from India, wrote: 'I'm so glad you have created space to discuss this ... And when you have high income country governments encouraging higher fertility it really makes me angry.' On the other hand, some participants expressed anger and frustration at the survey questions, which some felt were leading or offensive. Survey participant 108, from the United States, wrote:

This survey made me really upset. It seems to be geared to finding ways to make neo-Malthusian arguments more palatable and politically correct. However, blaming climate change on Global South women's childbearing habits is insidious and fundamentally misguided.

Discussion

Results indicate that stakeholders of the reproductive health and rights, and environmental, movements find that population size and family planning influence environmental sustainability, and overwhelmingly find that the reproductive health and rights ideological framework should be integrated in a wider sustainability frame reflecting environmental considerations. A majority of participants agreed with a number of propositions related to that central idea, such as: the impact of environmental degradation on global health increases the relevance of population dynamics for reproductive health and rights policy; family planning could be considered as a pathway to resilience because it lowers fertility levels; our understanding of reproductive health and rights should consider the fact that slowing population growth could play an important role to avoid dangerous climate change; the fields of reproductive health and rights and environmental sustainability

ought to be further integrated. Participants also overwhelmingly considered the concept of planetary health as being relevant to the reproductive rights field, with 104 participants (seventy per cent) in favour, 24 (sixteen per cent) in disagreement, and 21 (fourteen per cent) unsure. Based on the idea that human health and the health of the planet are related, planetary health adopts a multidisciplinary, cross-sector and transborder approach. It views population numbers as one of the factors triggering human-induced environmental change and identifies the reduction of population growth as an essential step to move humanity towards a more sustainable trajectory of development (Whitmee et al., 2015).

I deduce from these results that environmental sustainability and reproductive health and rights stakeholders are in favour of applying a planetary health approach, or what could be considered as 'environmental mainstreaming' to the reproductive health and rights field. Environmental mainstreaming is defined as 'the informed inclusion of relevant environmental concerns into the decisions of institutions that drive national, local and sectoral development policy, rules, plans, investment and action' (Dalal-Clayton and Bass, 2009, p.19, as cited in Bizikova et al., 2018) social and environmental dimensions of sustainable development. Existing multilateral environmental agreements (MEAs). Scholars have suggested two mutually supportive approaches for environmental sustainability: mainstreaming, or integration of related objectives, and the dedicated approach, which is developing stand-alone policies and programmes (Runhaar et al., 2018). A majority of participants were in favour of applying environmental mainstreaming to the reproductive health and rights field, an approach already called for by reproductive health and rights researchers (Newman et al., 2014).

A minority of participants favoured a dedicated approach for reproductive health and rights concerns, one that would exclude environmental considerations from its theoretical framework. Dedicated approach supporters perceived a fundamental incompatibility between human rights, perceived as individual, and environmental objectives, perceived as collective. Recent reproductive health and rights research calling for 'a radical reconceptualisation of family planning goals and measurements to focus exclusively on reproductive health, rights and justice' illustrates this position (Senderowicz, 2019, p.1).

We have seen that environmental sustainability stakeholders were more likely than reproductive health and rights stakeholders to endorse the linkage and related

concepts. The conceptual divide between proponents of a more integrated as opposed to a more dedicated approach to the linkage has the potential to create a schism both within the reproductive health and rights movement and with other disciplines, as reproductive health and rights are re-conceptualised in the context of a climate emergency and as sustainability is mainstreamed across sectors (Chakrabarty, 2009; The Lancet Planetary Health, 2019; Urwin and Jordan, 2008). Such a schism risks isolating the reproductive health and rights movement from other disciplines, and might also weaken the base of the reproductive health and rights movement as conflicting discourses emerge. Moreover, endorsing the linkage means that the reproductive health and rights movement could diversify and broaden the moral appeal of its rights, and access a range of new programmatic and funding opportunities associated with environmental sustainability. Rejecting the linkage would thus constitute, at the very least, a missed opportunity for the reproductive health and rights movement. As Newman, Fisher, Mayhew and Stephenson already concluded in 2014, 'if sexual and reproductive health and rights advocates do not participate in the population dynamics discourse, the field will be left free for those for whom respecting and protecting rights may be less of a priority' (2014, p. 53).

The survey and in-depth interview findings highlight that the linkage is shrouded in uncertainty, with many participants indicating that they had no or very little knowledge on this issue. The findings show that the positions of the reproductive health and rights and environmental sustainability movements on the linkage were unclear, with stakeholders expressing contradictory views on what those positions were. Many deplored the lack of discussion and research on this. These findings corroborate the fact that the linkage is generally absent from environmental policy and research, even more so from the reproductive rights field, where a resistance to discussing population is rife (Bongaarts and O'Neill, 2018; Engelman, 2009; McFarlane, 2014; Newman et al., 2014; Speidel et al., 2009). There were inconsistencies in the way in which Global North and Global South participants perceived each other's positions. Several Global North participants felt that, on the grounds that they had shrinking fertility levels, endorsing the linkage risked amounting or amounted to a form of neo-colonialism targeting the Global South, and should therefore not be raised by them. On the other hand, a few Global South participants stressed that they wished to acknowledge the linkage in their work but were limited from doing so because their Global North funders were reluctant to engage with the population size question.

The interdisciplinary essence of the family planning and environmental sustainability linkage brings both opportunities and challenges. Focusing on the linkage and adopting interdisciplinarity is needed to tackle complex problems such as global environmental degradation and climate change (Orr et al., 2020). It allows a movement out of restricted disciplinary boundaries and provides unique opportunities to advance such questions (Bammer, 2013; Orr, et al., 2020). Yet interdisciplinarity also brings limitations, both procedural and conceptual, many of which were identified by participants. In this case, barriers associated with interdisciplinarity are compounded in several ways. Firstly, the lack of funding and volatility of political commitments to address both reproductive health and rights and environmental sustainability exacerbates the sensitive nature of the linkage (Howes et al., 2017; Starrs et al., 2018). Secondly, the disciplines at play in the linkage are so fundamentally different that knowledge exchange and communication are problematic between their actors. Moreover, not only are the disciplines separate, but they are also unequal. Climate change and environmental degradation have been primarily studied and represented from a natural sciences perspective, one where social sciences (including interdisciplinary perspectives that focus on human rights) are largely under-represented, and often relegated to a secondary position (Corbera et al., 2016; Hulme, 2011; Mason and Rigg, 2019, p.6; Paterson, 2019)we explore the social scientific networks informing Working Group III (WGIII).

Limitations

The goal to reach stakeholders from all United Nations regional groups to have a global representation wasn't met. Not only did the survey lack representation from the Eastern European Group, but participation disproportionately came from Western Europe and North America, which skewed the results. Language was also a limitation in this study, with the survey offered only in English, thereby creating a significant bias for global representation. Last, the sample size of the in-depth interviews was limited to those that responded to the invitation after the online survey. While the determination of sample size depends on the scope and nature of the study in qualitative research, general guidelines for this method of inquiry tend to be over twenty, which is above our number of fourteen (Marshall et al., 2013). I countered some of the limitations associated with surveys by undertaking in-depth interviews with a sub-section of participants, and by identifying myself in the same way as the study participants, as a stakeholder in the environmental and reproductive health and rights movements (Pfadenhauer, 2009).

Conclusion

We conclude that a large majority of stakeholders of both the reproductive health and rights and environmental sustainability fields wished to reflect and act upon the linkage between reproductive rights, population size and environmental sustainability in a more systematic manner.

We identified that stakeholders of the reproductive health and rights and environmental sustainability fields overwhelmingly supported the idea of integrating reproductive rights in a sustainability frame, thereby opening significant programmatic and conceptual opportunities for both movements. More specifically, these findings corroborate that the linkage can play a role to increase the legitimacy, funding and acceptance of reproductive health and rights. Acknowledging the linkage may mean that reproductive health and rights become eligible for climate funds, for example (Davies, 2021).

We found that stakeholders of the reproductive health and rights movements were more likely to be divided on the re-framing of reproductive rights in an over-arching sustainability context than their environmental peers. The latter overwhelmingly supported the integration option, which we equated to a process of environmental mainstreaming. Proponents of integrating environmental sustainability considerations into the ideological framework of the reproductive health and rights ideological framework are at the crossroads with those who adopt a more dedicated approach, one where reproductive rights are perceived as incompatible with larger environmental goals (Newman et al., 2014; Senderowicz, 2019). More research will be required to identify ways to bridge the divide and promote environmental mainstreaming in ways that are responsive to the concerns that were associated with the linkage (the responsibility allocation injustice, colonialism and discrimination, and marginalisation). Additionally, further research is warranted to better understand how Global South stakeholders perceive the linkage.

The findings also highlight that uncertainty surrounding the linkage is pervasive, and suggest that policy makers and organisations active in the fields of reproductive health and rights and environmental sustainability should make their position on this issue more explicit.

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