



Drawing: *Meditation* by Maria Nguyen

Scoping Review of GBA+ Implementation and Practices in Six Priority Areas for ECCC

Research Team:

Bradford, L., Walker, H., Fletcher, A., Reed, M.G.

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Executive Summary

This report documents the findings of the scoping review requested by ECCC to create a searchable database of academic and grey literature to inform implementation of gender-based analysis + (GBA+) into agency activities. A database of findings is included. We sought to provide insights for:

1. Increasing understanding of definitions of terms related to GBA+ for ECCC personnel;
2. Understanding the current research trends and practices published in academic literature (i.e., peer-reviewed journals, texts, conference proceedings) in post-industrialized countries for implementing GBA+ in each of the six areas of interest and prioritization of ECCC in the last 3 years;
3. Understanding the current trends and policies published in grey literature (i.e., international government; environmental government; and non-governmental agencies) in post-industrialized countries for implementing GBA+ in each of the six areas of interest and prioritization of ECCC in last 5 years; and
4. Examples where the application of GBA+ (or similar frameworks) provided new appraisals of situations similar to those that ECCC personnel may face in their work activities; and,
5. A summary of the key themes emerging in research and practice from these sources to guide and inform implementation of GBA+ in each of the six areas of interest and prioritization of ECCC.

Over 1200 articles were screened for inclusion in the scoping review, which settled on 84 documents. A body of research and practice is emerging in the area of climate change, gender-based analysis and gender mainstreaming; however, few papers focusing specifically on GBA+ are available from post-industrialized countries addressing the priority areas of ECCC such as water, weather, and natural resources development. We provide documentation of our search and inclusion processes, citation mapping, and thematic analysis in the following report. Key thematic findings from the authors of the scoped works include:

- A. Criticisms of the simplistic descriptions of vulnerable groups contributes to inequitable outcomes;
- B. Case studies and key examples of mitigation contain little evidence of gender inclusivity (to date);
- C. Attention to scale and social groups improves representation and understanding of resource governance and disaster response;
- D. Stronger engagement and reflection on GBA+ can help shift policies and practices towards gender inclusion;
- E. Case study research suggests that attention to the intersection of multiple social factors affecting identity will help establish fairer environmental policies;
- F. Methodologies for research informed by GBA+ can enhance social change within participating populations and government agencies;

- G. Data gaps and limited international leadership related to gender/diversity for environmental management in the global north restricts uptake of GBA+; and
- H. Gender norms based in masculinity increase risks for men in resource industries suggesting nuanced application of analytical processes such as gender mainstreaming.

We first provide a glossary of terms important to this report, then discuss the sample provided in the database, and finally turn to analyzing the collective findings to support agency personnel in their research on GBA+ implementation. We include examples of contextualized article summaries throughout and a list of common misconceptions to demonstrate why it is important to implement GBA+ across the areas of interest and prioritization of ECCC.

Glossary of Terms:

Feminism is the belief in social, political, and economic equality regardless of sex or gender, and the struggle to eliminate oppression on the basis of sex, gender, “race”, class, sexuality, ability, and other identity factors. Feminism, both in politics and in academia, is not really about the domination of men over women. It is concerned with institutional structures and processes of domination and marginalization, and feminists seek to address the inequalities and injustices that arise from them. Nevertheless, feminist scholars and practitioners have long argued that gender is a central category of social life that explains the differing life chances between women and men. Feminist scholars make a distinction between gender as an analytical category (examining differences between males, females [and other gender identities] that are socially and culturally influenced) and feminism as an analytical framework (focusing on institutional structures and processes of domination and attempting to address the inequalities and injustices that arise from them) (Reed 2010: 593).

Gender a complex and constantly changing construct built from historical, cultural, and social ideologies that influence an individual’s identity, experiences, behaviours, and access to social rights and resources. Like sex, gender is often viewed as a binary (i.e., man/woman, masculine/feminine) but in fact, gender identity and expression are highly variable. Gender is evident across scales and is shaped by human activities, social practices, social structures, and power dynamics, which result in different roles, expectations, behaviours, interests, and divisions of labour for women and men and girls and boys (Johnson et al. 2009).

Gender inequality is the legal, social and cultural situation in which sex and/or gender identity and relations determine different rights, opportunities, freedoms, and dignity for women and men. Gender inequality may be reflected in differential access to or enjoyment of rights by people of different genders, as well as the assumption of stereotyped social and cultural roles, and the exercise of power relations (adapted from: <https://eige.europa.eu/rdc/thesaurus/terms/1182>).

Intersectionality originating from Black feminist thought, intersectionality is a framework that examines social inequality resulting from multiple, interacting systems of power and privilege. This framework used to understand the unique experiences of women living at the intersection of patriarchy, racialization, colonialism, classism, homophobia, ableism, and/or other systems of oppression.

Masculinity refers to attributes, roles, behaviours, relationships and norms that are ascribed to men within a particular context: as such, masculinity is not men themselves, but rather is about the practices and identities of being a man in a particular time and place (Connell, 2001).

Sex a complex notion that refers to biological and physiological characteristics of a person, including anatomy and hormones. While a binary notion of sex is typically used to classify individuals as either female or male, in reality, an individual’s sex exists on a continuum (Johnson et al., 2009).

Methodology and Sampling Protocol

Eight interdisciplinary academic and four grey literature databases were searched using established terms and limitations. Four search stages occurred as displayed in Figure-1 PRISMA for GBA+ and ECCC Priorities below. A PRISMA is a figure of Preferred Reporting Items for Systematic reviews and Meta-Analyses that displays the extent of literature searching and how articles were eliminated to obtain the scoping review sample (Moher et al. 2009). In the identification stage, articles and documents were included through reading titles and keywords. In the screening stage, abstracts were used to establish whether the article met the inclusion criteria. In the eligibility stage, articles were read to determine relevance and potential for contributions to the research questions. Articles included were then subject to a close read during the inclusion stage to draw out important findings. In some cases, articles were read by two or more reviewers to establish whether or not they should be included. The inclusion criteria were:

1. Document contained key terms, was recent (2-3 years for academic articles and 4-5 years for grey literature), and from a post-industrialized country
2. Document provided theoretical advancements or empirical evidence relevant to one or more of the six priority areas of focus for ECCC and gender issues
3. Document provided recommendations for policy makers working in environmental fields

The final scoping review sampled included 84 articles and reports published between 2013 and 2018 across the six areas of interest (Figure 2 Publications by Year in Scope).

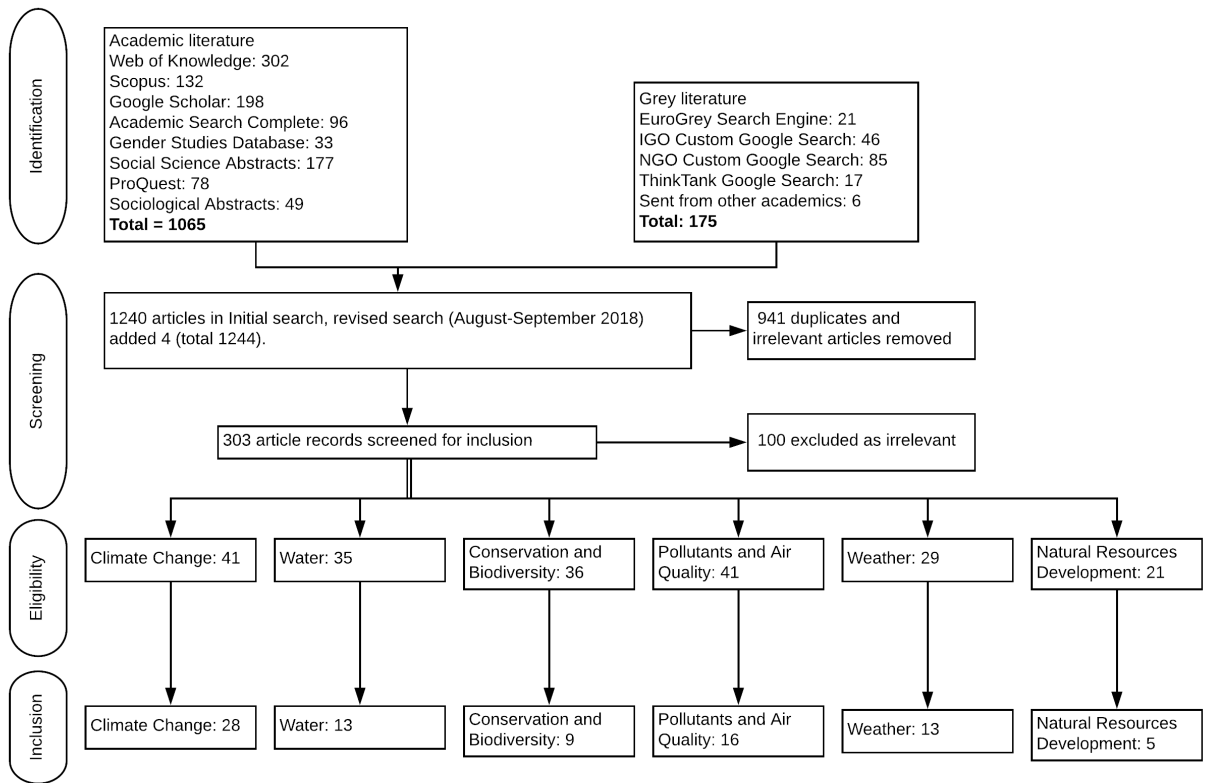


Figure 1. PRISMA for GBA+ and ECCC Priorities

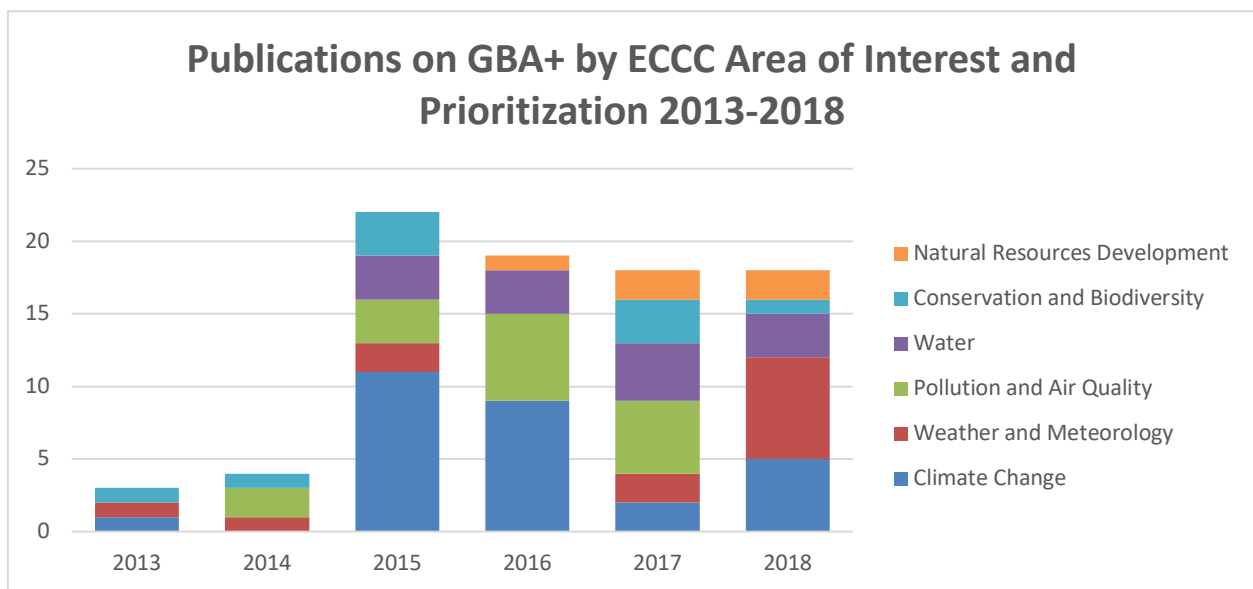


Figure 2. Publications by Year in Scope

Overview of Results

The Climate Change priority area had the most articles (28) that met inclusion criteria and were relevant to the research questions. Next in frequency were pollutants and air quality (16); weather and meteorology, and water (both 13); conservation and biodiversity (9); and natural resources development (5). Most of the articles were from peer-reviewed academic literature with 63 from journals, books, and conference proceedings published mainly in 2017-2018; and 21 from grey literature sources (NGO/IGO/ThinkTank reports) published mainly in 2015. The growth in grey literature may be partly attributed to momentum from international agreements and priorities (e.g., Sustainable Development Goals SDG5; Women, Peace and Security Resolutions 2106, 2122, and 2242).

Articles were more commonly published in journals from interdisciplinary environment fields (i.e., Global Environmental Change; Ambio; Society and Natural Resources); geography (Political Geography, Annals of The American Association of Geographers), or gender (Gender, Place and Culture; International Feminist Journal of Politics). UN secretariats produced the majority of the grey literature that informed this review.

Most research used an inductive or exploratory approach (57 of 84) suggesting that the research is nascent and not yet adequately providing theories, frameworks, or sufficient primary data necessary for developing hypotheses. Qualitative research was more common than quantitative research, with interviews, focus groups and content analyses of published findings being frequently adopted to suggest theory.

Researchers reported using purposive sampling rather than random sampling to generate the sources for their studies. Consequently, they reported limits arising from the challenges of making generalizations from case studies, lack of available data, missing data or literature gaps; and the focus on vulnerable groups and binary conceptions of gender instead of intersectionality.

Thematic Analyses

Thematic findings are presented below with reference to the sample in the database identified by code and number in the database:

CC – Climate Change

W – Water

CB – Conservation and Biodiversity

PAQ – Pollutants and Air Quality

WM – Weather and Meteorology

NRD – Natural Resources Development

Eight themes, listed from A through H, were derived from the results; discussion and conclusions of the articles and exemplars are given in the descriptions below. The reference and citation system used to support the themes consisted of the letter code for the priority area (e.g., Climate Change – CC) plus the number of the article out of the sample for that theme (for example, the most recent article is numbered 1). Thus, the first (most recent) article from the Climate Change priority area was identified by its code CC1 and the details about the article's characteristics can be found in the database from its citation code.

A) Criticisms of the simplistic descriptions of vulnerable groups contributes to inequitable outcomes

Authors across all priority areas consistently described environmental and policy practitioners' use of binary constructions of gender (men/women) based on biophysical characteristics and social construction as a barrier to developing more equitable policy (CC1-7, CC12-14, CC17; W2-5; W7-8; W11-13; CB1,4-6; PAQ 1-3, 8-11; NRD1-4). Authors described how this practice reinforces 'conventional' gender roles in a variety of contexts such as forestry (CB2), fisheries (NRD4), food harvesting and farming (CB3; CC11; PAQ8), tourism (CC4; NRD2), board membership (W1; NRD3), land ownership (CB1), and environmental assessment processes (NRD1). According to the literature, this practice marginalizes vulnerable groups by simplistically labelling them as belonging to a binary gender categorization (PAQ10), thereby failing to capture other identity factors that influence people's experiences of climate change or exposure to poor air quality (PAQ11-13). An interesting exemplar was found from PAQ10, which found that although gay men's exposure to toxins has been found to be greater than men generally due to the geography of neighborhoods frequented and lived in by gay men, their classification as men in national surveys and databases hides this particular vulnerability. The authors state that: "we suspect that a parallel process has been instantiated in Greater Houston involving the social stigmatization of sexual minorities, their spatial exclusion with other unwanted people and land uses in marginal inner-city spaces and their disproportionate exposure to toxic pollution" (PAQ10).

WHY IS GBA+ IMPORTANT IN CLIMATE CHANGE WORK?

Chalifour (2017: 240) points out that "all climate policies, whether they are aimed at mitigating GHG emissions or helping adapt to climate change, have gendered dimensions." The implementation of carbon pricing is one strategy for CC mitigation in Canada with jurisdictions recognizing the need to include strategies that offset the greater proportional cost accrued by low-income individuals and families through such carbon pricing schemes. There are, however, gendered implications for how revenues generated from carbon pricing are used, largely because "men and women have different perceptions, carbon footprints and needs" (CC26). For example, women on average spend 1.5 more time than men on domestic unpaid work, earn lower wages, and often rely on different forms of transportation (Chalifour, 2017). These intersect with other factors like race, age, income, and region to influence how various groups benefit (or not) from strategies to reinvest carbon pricing revenues into, for example, tax cuts, incentives for home retrofitting and energy-efficient vehicles, improving public transport, and childcare programs. In CC26, Chalifour states "adaptation strategies must [also] take into account the different needs and situations of women and men, based on their gender, race and socioeconomic situation or they may not be effective in assisting the people they are designed to help." Some authors cite the need to include an analysis of context-specific power relationships (e.g. on-going effects of colonization, dominant masculinities) to understand the root causes of vulnerabilities to climate change (e.g. see Cameron, 2012; MacGregor, 2010; Rochette, 2017). From a governance perspective, both women's representation in key climate policy decision-making roles, and, opportunities for women's groups to meaningfully participate in decision-making processes are important (Chalifour, 2017). Representation alone does not necessarily translate to voice in decision-making as power differentials and underlying gendered norms/assumptions influence what is valued (or not) in such processes; attention to such dynamics is vital. Engagement should "include a diversity of women's voices, from Aboriginal women, women living in poverty, senior women, working and non-working women, and urban/rural perspectives, among others" (Chalifour, 2017: 240).

B) Case studies and key examples of mitigation contain little evidence of gender inclusivity (to date)

When articles provided discussion of mitigation for climate change effects, air pollution, poor natural resource policy, or disaster management the authors pointed out that there was little consideration of gender broadly across policy discussions. Similarly, authors observed little application of gendered analyses (see for example, WM5, CC25). Much of the attribution for decisions that appeared to change mitigation policies for reasons of achieving equality were described as being economically or institutionally based and were not actually driven by goals of achieving gender inequality (CC11, NDR4). According to CC11, p. S259 “If we ignore the social and political foundations that have contributed to climate change vulnerability and the ensuing climate change crisis (Wainwright 2010), potential solutions will enhance rather than reduce existing injustices and societies risk missing the opportunity to address the critical challenges of climate change.” In addition to expressing the need to support gender mainstreaming, many authors pointed to the prevalence of dominant masculine norms in science, technology, and economic discourses. These norms assume that masculine ways of knowing and expressing that knowledge serve to marginalize the knowledge and experiences of diverse social groups (CC2, CC5, CC12, CC15, CC26-27; W1, W3-5; W8, W10-11; NRD1). Many authors suggest that inclusion of women and other diverse groups on decision-making bodies and in policy planning will increase public support and potentially provide more beneficial results. For example, CC5 stated: “[W]e are arguing that preferences have potential implications for what is included in the discourse about policies, and, as a result, the development of policies and perceived assurance of procedural justice via feelings of inclusion among those who are impacted by policies”. Participation of diverse groups in mitigation policy development is especially important because diverse social locations bring different experiences, reliance on natural resources, strategies practiced for recovery from climate events or loss of resources, and thus, a wider variety of priorities for mitigation (CC5, CB3; NRD2-4).

C) Attention to scale and social groups improves representation and understanding of resource governance and disaster response

Authors explained how gendered inequalities played out at local scales (i.e., women's inability to own land or fishing licenses in NRD4, CB3-4, PAQ7), and discussed how national level policy reinforced or challenged these inequalities due to structural power relations across scales from household to international levels (CC1, CC21, PAQ7). Researchers pointed out that the root causes of inequality, at times cultural in nature, need to be considered in creating policy, and for understanding how needs differ across scale from local to landscape levels (e.g., CC16, CC26). A concrete example of how gender intersects with other identity factors across scales was provided in PAQ6. Here, the authors described the increased health pressures faced by women living in industrialized countries (China, USA, Spain, Egypt) who were poorly educated migrant workers, living in poverty, challenged by low employment security, and facing difficulties in accessing regular individual health care for themselves or their children due to ongoing migration for employment.

Economically marginalized women suffer serious health problems, for example, within urban and rural areas, and these victimization experiences can also be addressed in relation to the effects of environmental injustice on women. Marginalized women in underdeveloped and developing countries should not be ignored, and medical research has been directing some attention to this issue by exploring the victimization of women through exposure to e-waste (PAQ6, p.418).

There are also different experiences and perceptions of natural resources values and priorities for mitigation that need to be included in discussions (CC5, CB3, WM2). For example, the collective labour of older women, particularly around child rearing, household chores, collection and use of medicinal plants, and creation of handicrafts using forest materials in the Nordic Arctic is largely unrecognized in policy decisions, despite their importance for sustaining communities (PAQ7). The author, Begum (2016) stated that “[i]f Finland, Norway and Sweden, all of which have ratified the convention, [CEDAW], take the specific measures recommended by GR 27 with due consideration for the hidden inequalities shown in this research, the right to equality and non-discrimination of elderly women in the context of livelihood transformation can be further improved.” Authors described how new approaches that consider scale and collective group interest are relevant for climate change adaptation if women's activities contribute to maintaining livelihoods. These approaches are also relevant to air quality and pollution if it means reducing the exposure to harmful chemicals for women, particularly those facing intersectional challenges; and relevant to natural resources development for example, in retaining and ‘traditional knowledge’ intergenerationally related to plants and their uses (CC3-4, CC9, CC1; PAQ6-8; CB4-5).

D) Stronger engagement and reflection on GBA+ can help shift policies towards gender inclusion and support employee recognition of the need for gender-based analysis

One of the prerequisites for change in implementing gender mainstreaming and gender-based analysis repeated throughout the literature reviewed was the focus on improving engagement with a wide diversity of local people who may be found in formal and informal organizations and associations (CC4, CC9, CC27-28; PAQ13; CB3). Authors across all the priority areas recommended improvements in engagement with people working in local contexts (CC18, CC27; W2, CB3; PAQ13, NRD4, WM12). Included in that engagement should be reflection on organizational practices, local practices, community values, cultural norms, and implementation of gender-based analyses to enhance existing data, build trust, and move beyond conventional approaches to improving water and resources policy development (CC27; PAQ13; WM12). For example, due to climate change in the north and the traditional prestigious role of “male hunter”, Inuit women are taking on more wage labour (up to 17 hours per week). This may preclude their involvement in decision making bodies or boards even though they are carrying more of a burden from climate change:

It will also be critical to consider the role of Inuit women in the household. While relatively high engagement in the wage labour market has been highlighted as offering the potential to redefine their role in society (Röhr 2007), this role cannot be looked at in isolation. To this point, Table VI reflects the unpaid work carried out in the household. Evident here is a significantly higher burden of work at home, with Inuit women dedicating an average of 17 hours more to housework and childcare than men do. This is of little surprise as these roles are traditionally filled by women in societies around the world (CC27, p. 24-25).

In case study work, authors found that better engagement overcomes barriers to inclusion of wider knowledge forms and avoids epistemic objectification (when a group’s actual or imagined weaknesses are wrongly taken to be due to their “essential nature”, such as being a woman, or being Indigenous) (CC23). Authors described a similar need to improve engagement by using less top-down and uni-directional research methodologies (CC13, CC20). They suggested that describing people as members or non-members or as men and women on climate change policy boards also reinforces power disparities (CC11).

WHY IS GBA+ IMPORTANT IN WEATHER WORK?



Vasseur and colleagues’ study (WM11) related to experiences and perceptions of winter storms is one of very few empirical studies that focuses on the gendered impacts and responses to such weather hazards in the Canadian context. The authors interviewed 74 participants in 10 Atlantic communities and found that men and women had differing perceptions of the impacts associated with winter storms, support and services provided in response, and preparedness for future events.



The authors found that women were more likely to cite impacts of flooding to their homes, while men more often raised concerns about roadways and other community-level physical infrastructure, and “women frequently mentioned emergency supplies and escape/evacuation as part of their level of preparedness, [and] men added hazard-proofing (including home and protection wall), emergency plans, and insurance” (p. 12524). The study also found that age, location (i.e. Distance from shore), and occupation (i.e. Fishers) intersected with gender. In some cases, these characteristics appeared to be more important than gender, in shaping residents’ experiences of fear, concern, and stress related to winter storm events. They concluded that “there is a need for more gender-sensitive social policies that provide women with greater safety closer to home. This will become increasingly important with the aging populations of coastal communities in Atlantic Canada” (p. 12527). While important policy implications were raised, gender was viewed as a simple category of analysis, not a social relationship or power dynamic. In contrast, Tyler and Fairbrother (2013) examined how gendered structures and norms affected evacuation responses to extreme events. They explained how wildfire management in Australia continues to emphasize characteristics of ‘hegemonic rural masculinity,’ which extols physical strength, risk-taking, and the colonial/frontier mentality of fighting against nature. Their work reveals how an emphasis on such characteristics has consequences for men and women. In 2009, national policy and awareness campaigns encouraged households to make the decision to either evacuate early or to “stay-and-defend” their property. The policy did not account for the reality of gendered norms within rural communities. Men were far more likely to choose to stay-and-defend because of the pressure to conform to rural masculine ideals, while also avoiding the ‘feminized’ option of early evacuation – an outcome which quite literally had life and death consequences. As this example reveals, policy decisions around responses to climate and weather-related hazards can be strengthened if gender (and other social factors) are viewed as social relationships and structures, rather than static characteristics inherent to individuals and groups.

E) Case study research suggests that attention to the intersection of multiple social factors affecting identity will help establish fairer environmental policies

Several authors pointed to the need to consider intersectionality as a new frame for examining impacts of climate change, pollution and poor air quality, natural resource development, extreme weather, and water crises (CC1, CC4, CC14-15, CC20; CB9; PAQ8, PAQ10; NRD2; WM4). These crises can have increased effects on people of diverse/multiple identities, including migrants, Indigenous people, LGBTQ individuals, people of colour, and children. Barriers to conducting intersectional work such as data gaps, data classification issues, trust issues, and lower power in statistical work were described, however, authors point out that many barriers were overcome by using a case study approach and building theoretical knowledge from reviews of multiple studies in a variety of contexts and priority areas (CC9, CC18; W4; PAQ6, PAQ13, WM4).

Case studies were deemed useful for providing contextualized information to guide policy makers. For example, in the case of women who are seeking food and water security (CC4) or who are coping with extreme weather while caring for family and supporting spouse's economic gains (WM3), there are additional burdens not easily captured by statistical methods or through literature reviewing. In an example given where health outcomes in post-disaster in Germany were measured continuously over a multi-year period, researchers discovered that women continued to be psychologically burdened long after the disaster.

The fact that women in particular are still emotionally affected 18 months after the event calls for more psychological assistance for this group, ... In addition, recovery efforts should particularly consider societal groups that are socially vulnerable, such as people with disabilities, poor health status, and fewer financial resources (WM3, p. 294).

WHY IS GBA+ IMPORTANT IN CONSERVATION?

In survey after survey about people's perceptions of environment and conservation, women express stronger preferences for the intrinsic values of nature than men who emphasize nature's utilitarian values (e.g., Van Liere and Dunlap 1980; Mohai 1992; Davidson and Freudenburg 1996; Uliczka et al. 2004; Parkins et al. 2006; Nenko et al. 2018a, b). Nevertheless, it appears that in the global North, women are less directly involved than men in conservation of biodiversity (e.g., Petzelka et al. 2018). At least three reasons, revealed by through a lens of gender and diversity, might account for this discrepancy.

First, it is possible that we frame involvement in conservation in relation to formalized organization and narrow outputs. Feminist scholars have long argued that in environmental movements, women are more prominent when the organization of environmental activism is more flexible or informal; men tend to 'rise to the top' when organizations become formalized and recognized by policy makers (Seager 1993). Reed (2003), for example, found that rural (forestry-town) women participated in efforts to restore local streams and riparian habitat, environmental education, anti-pesticide campaigns and tracking of endangered species. However, women described multiple motivations for their involvement, including getting young people into nature and discouraging their use of drugs and alcohol. GBA+, which draws attention to gender and diversity, might help reframe involvement in conservation and stewardship so that such initiatives and groups would be better recognized and supported.

Second, there are many examples where women's and Indigenous peoples' knowledge about biological diversity has been marginalized or excluded from formal processes. For example, researchers have found that in northern Canada, the focus of decision-makers on identifying impacts on traditional livelihoods has drawn their attention to the interests of male hunters and trappers. Advisory or decision-making committees have been established without consideration of the need for gender equality (Staples and Natcher 2015) and consequently, knowledge of species derived from Indigenous women's use of ecosystem services (e.g., medicinal plants, berries, meat processing, and tanning of hides) has been omitted.

Third, outreach efforts to encourage biodiversity conservation do not target new landowners who may offer beneficial practices. Research in the global North has revealed that women are inheriting farm lands and small-scale forest lands in record proportions (Butler et al. 2018; Petzelka et al. 2018). Yet, Petzelka and colleagues (2018) found that women landowners were not getting the same information about conservation options as men. Those who attended USDA meetings often found they were the only women in the room, felt intimidated, and wished they could engage in peer learning. Similarly, Carter (2017) found that women who had recently inherited farm land in rural Iowa felt excluded from the social networks and outreach programs that might furnish them with information necessary to make conservation decisions. Similar barriers have been observed for female forest landowners (e.g. Butler et al. 2018).

A GBA+ lens requires government to consider how efforts to engage citizens in biodiversity conservation may inadvertently reinforce stereotypes of men as the rightful users and decision makers of lands and resources (with corresponding implications for biodiversity conservation) before giving serious consideration to how conservation activities could be undertaken employing an inclusive and equitable approach.



WHY IS GBA+ RESEARCH NEEDED FOR POLLUTION AND AIR QUALITY?

Bagelman and Wiebe (2017, see PAQ1) looked at how air pollution from Canada's "Chemical Valley" near Sarnia, Ontario affected the physical, cultural, and spiritual health of people living in the Aamjiwnaang First Nation's reserve. Conventional framings of the toxic exposure in this region is narrow, and does not do justice to explaining the motivation for acts of environmental justice by Indigenous women to protect their community and promote change. An expanded heterotopic lens used for analyses moves the research beyond neat divisions of periphery/center and invisible/spectacle to explain why in Aamjiwnaang First Nation, Indigenous women use pipeline protests, community body-mapping, and 'toxic tours' to demonstrate their 'politics of love' for their place. The gendered lens offered six 'spaces' of ongoing colonization through pollution and air quality issues for Aamjiwnaang:

1. Crisis space where chemical alert sirens are commonplace, birth patterns are skewed, and access to the lifeblood of creeks and rivers is denied.
2. A temporal space where they are trapped by history and toxicity, but also nurtured by its kinship affiliation
3. An incompatible space where the health of indigenous people is juxtaposed with the health of industry
4. A fleeting and accumulating space where the body is both a living and deadly testimony to the violence of the colonial, chemical landscape and yet polluting companies humbly ask community members to take part in their own poisoning by encouraging employment, and force a reliance on companies through their donations to food banks
5. A space that is both open and closed; entry and exit is conditional and regulated (i.e., band membership), industrial development penetrates the reserve (pipelines both above and below ground) and no borders to protect the air from pollution; play and outdoor activity are highly restricted in this toxic space.
6. A chaotic space where progress and production overpower attachment and sacred connections to place.

The new analyses challenge the way policy thinking is ordered and framed. The result is greater understanding of actions against ongoing practices of colonization.

F) Methodologies for research informed by GBA+ can enhance social change within participating populations and government agencies

The authors discussed how methodologies such as case study, interviews, focus groups, sharing circles, storytelling, and knowledge sharing networks play a role in encouraging social change in agencies conducting environmental work, and in locations where impacts are being evaluated, and thereby can bring about gender mainstreaming when used more widely in environmental initiatives (W3, CC19). Some articles described how the active and participatory nature, and the requirement for relationship building inherent in these methods support trust and capacity building, and high quality engagement (CC19; CC28; PAQ7). Institutionalizing new methods that enhance equality is recommended, "Equal presence of women and men is often used as a key or sole indicator for 'gender equality' in various initiatives, while information on opportunities, power relations, equal voices, etc. is lacking" (p28); and "... the dynamic and context-specific nature of gender roles might cause disconnects between policy and legal frameworks and the actual situation on the ground if continuous attention to gender roles is not institutionalized" (p31) (CC28). Therefore, employing multiple methodologies will provide conditions for

a wider set of participants and thereby enhance opportunities for social change. Additional benefits described in the scoped articles included the ease of capturing data to include in GBA+ evaluations of

programs from methods that have richer engagement built into the process, and the longer-term commitment of participants to climate initiatives brought on by the use of relevant and participant-centered methods (W11; CC27).

G) Data gaps and limited international leadership related to gender/diversity for environmental management in the global north restricts uptake of GBA+

Most articles described data gaps as a limitation to their work and the generalizability of their conclusions. Literature reviews pointed to gaps in historical records of gender roles and involvement in environmental issues (CC4, CB3-4; CB9; PAQ7; WM8; W8), missing data (CC8, W1, W8, W11-13; PAQ 1-3, PAQ8; CB4, CB7-9), and on women's contributions to decision bodies (CB9, PAQ11). "Although many multidisciplinary studies have examined the various social and political dimensions that influence the effectiveness of resource co-management, little has been done to understand how gender might affect collaboration and decision making. This gap is particularly evident in the northern Canadian context, where women make up 16% of all current co-management boards" (CB9). Internationally, organizations desire more contextualized research to inform their implementation of gender-based analyses and gender mainstreaming initiatives (PAQ3-4, PAQ9; W4-5, W9; CC6, CC12). Authors pointed out that there is little leadership by individual countries or agencies to undertake that research and share results currently (CC12; W4; W11). For example, in Escobar et al (2017) guidance document produced by the Stockholm Environment Institute, findings were that although 88% of globally-representative survey respondents believed in incorporating gender and social equity aspects in their water and energy modelling work, only 7% of respondents said their countries were actually doing so (W5). This presents a barrier to more widespread implementation of SDG goals, and gender mainstreaming initiatives.

DISCREDITING DISCREDITORS OF GENDERED EFFECTS IN NATURAL RESOURCES DEVELOPMENT

McHenry (2017) examined negative impacts of fracking on women's health and wellbeing. Several broad effects were found from interviews with twenty women living in Pennsylvania near fracking sites. First, within the physical, social and regulatory spheres, women were most concerned that there were very real threats of contamination of water, food, and local environments but seemingly little effective policing of the industry through monitoring and legislation. Second, the author found that women perceived threats to personal safety from speaking out against fracking. Women, often mothers and/or older women who work in the home, were more frequently exposed to potential toxins. They described situations where activists were silenced in complex ways by:

- Leaders of social movement organizations (i.e., where environmental organizations like the Sierra Club have received funding by the fracking industry, they focus advocacy efforts on other issues),
- Local citizens (through public ostracizing of activists and social media attacks),
- Corporations with ownership of mineral rights (which provide a pathway for litigation against activists),
- Law enforcement (through enacting restraining orders), and
- Energy company representatives (through online gendered attacks and sexual violence)

According to McHenry (2017), the terror associated with these attacks on women are used “by energy companies [to] promote fear and represent an effort to maintain power and control over women and their abilities to mobilize against fracking” (2017: 96).

H) Gender norms based in masculinity increase risks for men in resource industries suggesting the need for sensitivity to context through analytical processes such as gender mainstreaming

The articles focused mainly on women's experiences in the environmental sector, however, authors make the point that in some circumstances, gender norms based on masculinities and deeply entrenched masculine values present risks for everyone including men, and need attention from researchers and policy makers (CC4, CC11, CC18, CC26, CC27; CB3, CB9; WM2).

Reports described how men working outside in the resource sectors are more at risk in their employment than women (CC4, CC26, CC27; NRD4). Men dominate key resource-based occupations such as forestry, fishing, and fire fighting and masculine norms associated with facing hazards place men at risk from weather and climate threats. Some authors pointed out that it is important to study concepts such as risk and vulnerability on a case-by-case basis for populations and communities (CC10; NRD4).

As in principle it is difficult to empirically measure exposure to the impact of climate change, gender-specific exposure even more so, current attempts mostly make use of male and female mortality rates. These mortality rates, however, are strongly context- and disaster-dependent and frequently contradictory. While there are arguments for a higher female mortality rate in flooding events, for example, due to inability to swim, it is equally assumed that male mortality may be higher due to greater risk-taking behavior... Therefore, gender-based action strategies and non-coping behavior in response to climate events should be more appropriately put into the larger societal context. In this respect, the study of action patterns that result from the social practices of gender-based role attributions can generate insights into whether and how women develop limited adaptation capacities (CC10, p. 171).

Some authors described how incorporation of gender mainstreaming or multiple perspectives on gender norms into the policy process contributes to improved policy through the consideration of the effects of environmental changes on both men and women (CC18; CC26-27; WM2, WM7, WM10; NRD4).

Gender mainstreaming and gender budgeting describe two processes that aim to ensure that policy makers understand the implications of policies and programs on women and men. The Government of Canada defined gender mainstreaming as “a strategy to assess the implications for both men and women, of any planned actions, policies or programmes in all areas and at all levels.” As Claire Sjolander describes it, gender mainstreaming ensures that “women’s as well as men’s concerns and experiences are an integral dimension of the design, implementation, monitoring and evaluation of policies and programmes in all political, economic and societal spheres so that women and men benefit equally and inequality is not perpetuated” (CC26, p. 31).

Gender mainstreaming can begin with gathering statistics about human-environment relations and resource sectors that are gender-disaggregated, provide benchmarks against which actions can be judged, and better inform environmental policy and climate change adaptation efforts, locally, regionally and nationally. However, the application of gender-mainstreaming has also been subject to critique. For example, in Sweden, the application of gender mainstreaming in the forest sector has been criticized as incomplete (CB5). “Learning how gender mainstreaming has been accomplished elsewhere, along with its challenges and limitations, may provide lessons for making change in Canada. Such learning would require additional systematic study that would account for contextual differences between the countries while advancing an ambitious agenda for change” (Reed et al. 2014, p.1002).

Summary

The major themes identified in the scoped literature suggest that attention is shifting toward more participatory, community-based, and contextualized research approaches for environmental adaptation, which may provide a beneficial evidentiary base for GBA+. Research on gender and diversity in environmental issues may require more intensive methodologies focused on depth rather than breadth; in practice, this means employing more case study and qualitative approaches to complement existing studies of environmental issues, which tend to be more quantitative and natural science-based. Many of the scoped articles are critical of claims that overgeneralize the experiences of women and other marginalized groups, for example by representing them only as victims. The findings indicate several future challenges for GBA+ in the area of environment. Future research, analysis, and policymaking should:

- Avoid overly generalizing or victimizing discourse while still acknowledging the ongoing relevance and effect of oppressive systems, such as gender inequality;
- Employ intersectional analysis from a feminist perspective, with a focus on empowerment, agency, and ongoing attention to gender as a key axis of power;
- Draw on evidence from a variety of methodological approaches, including context-specific case studies and participatory methods;
- Design strategies and methods for analyzing across such context-specific case studies to inform GBA+;
- Expand the focus of gender studies beyond binary classifications (men, women) and consider how gender and other norms (i.e., masculinity, femininity, age, binary and racialized identities) can influence expected risk factors, attitudes, behaviours and capacities of people facing environmental crises and thereby affect policy generation, program implementation, and local-level response to changes in environment and climate.
- Conduct in-depth analysis of gender mainstreaming approaches to inform how gender analysis and GBA+ can be meaningfully applied to environmental research and policymaking in assessments of risk, vulnerability, mitigation and adaptation.

COMMON MISCONCEPTIONS

You may have heard, or be thinking of one of the following misconceptions about GBA+:

“It doesn’t apply to me.”

Even though you may occupy a position where your day-to-day tasks are very specific and don’t seem to be linked to gender-based activities, your work is part of broader initiatives across government departments which may have gendered consequences.

“It’s just science, isn’t it?”

All scientific theories and hypotheses are built on assumptions, some of which embed norms that are simply taken for granted. Challenging these assumptions provides opportunity to deepen understanding of behaviours and workplace cultures and contribute to change.

If you are unsure if GBA+ applies to your work and don’t know where to start, [this resource](#), provided by Status of Women Canada offers a step-by-step guide to analysis.

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