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# Measuring How Water-Related Policies of the Global South Consider Gender: Insights From Trialling a New Policy Gender Index in Nepal

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## ABSTRACT

This paper supports policymakers to consider how well their water-related policies respond to gender roles, norms and relations. By braiding the latest philosophies on gender mainstreaming with Integrated Water Resources Management and Feminist Policy Analysis principles, we describe a Multi-Dimensional Index of Gender in Water Policy (MDI-GWP) to measure how gender is captured in water-related policy. The index enables the motivated policy actor to produce well-crafted and feasible recommendations to reform policies. When we trialled MDI-GWP on 16 of Nepal's federal water-related policies and acts, the multi-dimensional index tracked gender policy developments over the past 30 years, identified areas where policymakers could further consider gender, and revealed differences in gender application between sectors. We included water resources management (WRM), agriculture, and water, sanitation and hygiene (WASH) sectors. In Nepal's case, agriculture and WASH policies are on an improving trajectory for gender equity, while WRM policy has rebounded to the gender blind. We expect that MDI-GWP is simple enough to apply in other countries, yet meaningful enough to identify opportunities to improve gender in policies and achieve better outcomes.

## 1 | Introduction

Women are disadvantaged in developing countries in water sanitation and hygiene (WASH), agriculture and water resources management (WRM) sectors. In WASH, an estimated 700 million people still access water through traditional means from surface water, springs and unprotected wells (WHO/UNICEF Joint Monitoring Program (JMP) for Water Supply and Sanitation 2015; WHO 2021]. Women (58.6%) and children (30.4%) are the most common water collectors taking over an hour every day when water is scarce or when queuing is necessary (Sorenson et al. 2011). Women responsible for collecting water also report increased drudgery, reduced productivity and reduced wellbeing (Udas 2014). When women and girls go out to gather water, they are at risk of assault and other forms of violence (Pommells et al. 2018; Lazarus 2015), and a range of other physical and psychological effects (Adams et al. 2021).

In the agriculture sector, female participation in smallholder farming in many developing countries in Southeast Asia and Africa is trending up (Slavchevska et al. 2016). The trend has been attributed to male outmigration, commercial farming and

This paper describes a review of water-related policies in Nepal from a gendered perspective. To structure the review, a practical framework was devised that would have relevance to a broader audience than gender specialists. The framework has been instanced as an index comprising scoring against attributes extracted from feminist policy analysis literature. It has been trialled on a set of Nepal water-related policies. The paper contains short critiques of feminist policy analysis and the selected Nepal policies.

trade liberalisation (Lastarria-Cornhiel 2006). Far from empowering, the resulting increased labour burden can undermine women's wellbeing and cause agrarian distress, as found in Nepal (Gartaula et al. 2010) and in India (Pattnaik et al. 2018). However, female representation in national, regional, and local water decision-making processes and formal governance positions remains low in much of the global South (O'Hara and Clement 2018; Derman and Prabhakaran 2016).

In response, governments and development partners have introduced specific gender-based approaches to development (see Section 1.1) and revised existing water resources management approaches to consider women's inclusion explicitly (see Section 1.2). These approaches and philosophies have influenced the development of policies, acts and regulations, programs, and activities (as discussed in Section 1.2). In recent years, Feminist Policy Analysis (FPA) approaches have emerged to assist policymakers design and evaluate how well gender is incorporated into policies (see Section 1.3). These approaches often come from a disciplinary area and use language unfamiliar to many of those working in water resources. This restricts their adoption in water-related sectors, except perhaps by academics who naturally draw on material and discourses from many disciplines.

How, then, to bridge this divide, as we see significant benefits in water-related policy being gender literate and informed by FPA approaches? One solution that we propose in this paper is to operationalise the FPA approach to the water resources domain through a simple multi-dimensional index. Applying this index (called Multi-Dimensional Index of Gender in Water Policy, MDI-GWP) to existing and future policies would be a significant step in supporting policy review (see Section 3) and policy drafting. To understand what aspects of FPA might be useful to emphasise in such an index, we examined water-related policies, practices and gendered outcomes in Nepal. From these learnings, we developed MDI-GWP. The utility of MDI-GWP was trialled in Nepal on 16 federal water-related policies (see Section 4). The results are then discussed for the WRM, WASH and agriculture sectors of Nepal (see Section 5).

### 1.1 | Gender Approaches in Development Policies

The evolving ideas of gender in academia and among feminist activists have driven the design of programs by the World Bank, International Non-Government Organisations and developing nations, including Nepal (Schnable et al. 2021; Devkota et al. 2022). This section discusses how the development agenda of the 1970s and 1980s recognised women's contribution to development, and the 1990s saw focus on gender analysis and gender mainstreaming. In comparison, the 2000s provided an opportunity to apply and reflect on the effectiveness of gender integration and activism.

In the 1970s and 1980s, development theorists under the Women In Development (WID) banner sought to redress the lack of recognition for women's contribution to economic growth, project efficiency and social justice in development programs (see discussion in Miller and Razavi (1995)). For example, Overholt et al. (1985) introduced the Harvard Analytical Framework for systematically demonstrating that women generated economic value and increased productivity in USAID development programs. Commentators describe how engagement of women was linked to more efficient investment outcomes from social programs (e.g., Miller and Razavi (1995)). This had the positive effect of increasing the visibility and uptake of women's issues by donor agencies. However, the focus of WID-led practitioners on improving efficiencies, while important, meant that the inherent inequalities within gender-related social constructs, were not prioritised (March et al. 1999).

In response, Gender And Development (GAD) approaches started emerging in the 1980s and 1990s. Crucially, the idea of 'gender mainstreaming' emerged from the Fourth World Conference on Women in Beijing in 1995. Point 79 of the Beijing Declaration demanded an 'active and visible policy of mainstreaming a gender perspective into all policies and programmes, so that, before decisions are taken, an analysis is made of the effects on women and men, respectively.' (UN Women 1995). This led to wide-ranging changes. The size of the change is demonstrated from a language standpoint with the word 'gender' increased 20-fold in World Bank documents between 1995 and 2005 (Schnable et al. 2021).

In the World Health Organisation (WHO), gender mainstreaming brought gender analysis to HIV/AIDS programming and policy (Gupta et al. 2003). First, the WHO adopted terms such as 'gender sensitive' and 'gender transformative' when referring to programme design (Gupta et al. 2003). They argued that the policies should aim to be gender transformative to address the root causes of inequalities and to achieve gender equality. Then the WHO structured the gender terms into a five-level Gender Responsive Assessment Scale (WHO 2011) (Table 1). The scale was envisaged as a tool for assessing programs and policies and packaged, with case studies, as part of their gender mainstreaming training material. Its intent, in addition to identifying the level of a policy, was to force inquiry into what changes could be made to make the policy being assessed gender-transformative. Importantly, the scale acknowledged that gender-transformative requires short- and medium-term gender-specific (level 4) strategies and actions.

The Gender Responsive Assessment Scale followed an explosion of gender-analysis frameworks in the 1990s that provided practitioners with tailored tools to improve their understanding of welfare inequalities, social relations and institutional power (e.g., seven listed in March et al. (1999)). Gender mainstreaming played a pivotal role in incorporating gender issues and shifting development policies and programs, including those related to water resources, from being gender-blind to gender-sensitive and gender-responsive to some extent. However, while gender mainstreaming has brought the term 'gender' into discussion and caused organisational changes, the hopes of feminist activists for social transformation have not been realised (Mukhopadhyay 2013). More practically, Devkota et al. (2022) reflect that while gender mainstreaming has influenced the national policy of Nepal (e.g., establishment of a Gender Equity and Social Inclusion (GESI) section within its Ministry of Agriculture and Livestock Development), this has had little impact on farmers at a community level.

**TABLE 1** | Five-level Gender Responsive Assessment Scale developed by the World Health Organisation (reproduced with permission from WHO).

| Level | Criteria |
|---|---|
| 1. Gender-unequal | *Perpetuates gender inequality* by reinforcing unbalanced norms, roles and relations; privileges men over women (or vice versa); often leads to one sex enjoying more rights or opportunities than the other |
| 2. Gender-blind | *Ignores gender norms, roles and relations;* very often reinforces gender-based discrimination; ignores differences in opportunities and resource allocation for women and men; often constructed based on the principle of being 'fair' by *treating everyone the same* |
| 3. Gender-sensitive | *Considers gender norms, roles and relations;* does not address inequality generated by unequal norms, roles or relations; indicates gender awareness, although often *no remedial action is developed* |
| 4. Gender-specific | *Considers gender norms, roles and relations* for women and men and how they affect access to and control over resources; considers women's and men's specific needs; intentionally *targets and benefits a specific group of women or men to achieve certain policy or programme goals or meet certain needs;* makes it easier for women and men to fulfil duties that are ascribed to them based on their gender roles |
| 5. Gender-transformative | *Considers gender norms, roles and relations for women and men and that these affect access to and control over resources*; considers women's and men's specific needs; addresses the causes of gender-based health inequities; includes ways to transform harmful gender norms, roles and relations; objective is often to promote gender equality; includes strategies to foster progressive changes in power relationships between women and men |

Bringing gender into the mainstream of organisations has increased the professionalisation of gender experts and the number of gender policies and programs. Paterson (2010) describes this shift as from participatory-democratic models of action to expert-bureaucratic models of action. Under participatory-democratic models, community groups are involved in agenda-setting which attempts to destabilise policy-making structures and make radical changes. Under the expert-bureaucratic models, policies are refined to consider gender; however, the overarching aims and goals are seldom touched. Kunz and Prügl (2019) eloquently outline the discomfort of feminist scholars and activists who fear that gender concerns might evaporate when gender experts in institutions apply apolitical, technical or managerial solutions to problems.

In response, Gonda (2019) suggests re-politicising gender issues is necessary to influence policy effectively. They suggest techniques such as Feminist Political Ecology (FPE) to understand the power to enable adaptation. Similarly, Devkota et al. (2022) see FPE as a tool for understanding the underlying causes of gender inequities among poor farmers such as land entitlements and unfair wage rates. The common thread throughout the development literature is that a commitment to change is required and that change needs to occur across multiple modalities—for example individual and systemic, informal and formal (Rao and Kelleher 2005; Rao et al. 2016).

## 1.2 | Gendered Approach of Integrated Water Resources Management

Consideration of gender in WRM has evolved over the past 100 years. For most of the 20th century, planning and development of water infrastructure including water reservoirs and pipe networks were undertaken as an engineering-oriented endeavour (Foran et al. 2019). However, growing awareness about the negative effects of infrastructure on people and the environment led to the 1992 Dublin Statement on Water and Sustainable Development (ICWE 1992) and the establishment of Integrated Water Resources Management (IWRM). The Dublin Statement contains four principles. The third Principle is directly related to women and states that '*Women play a central part in the provision, management and safeguarding of water. This pivotal role of women as providers and users of water and guardians of the living environment has seldom been reflected in institutional arrangements for the development and management of water resources. Acceptance and implementation of this principle requires positive policies to address women's specific needs and to equip and empower women to participate at all levels in water resources programmes, including decision-making and implementation, in ways defined by them*.'

The inclusion of gender in IWRM sets it apart from competing frameworks such as the European Union Water Framework Directive which is gender-blind (Rahaman et al. 2004). Gender as a top-line principle also differentiates IWRM from recent approaches such as the Water-Food-Energy (WFE) Nexus where the underlying motivation from WFE proponents was to weight water, food and energy sectors equally and avoid over-concentrating on the water sector as in IWRM.

Given IWRM is a series of principles, the way it is implemented and the outcomes of that implementation have varied widely (Suhardiman et al. 2015; Clement et al. 2017). There is little discussion in the literature about principle 3, and it is hard to assess how engaged the water resources community has been with

gender. Commentators such as Derman and Prabhakaran (2016) highlight the lack of women's participation in the water resources ministries of government departments across southern Africa and Taganova (2020) reports similarly in the United States of America. For Tajikistan, Rasulova et al. (2020) tie this back to a lack of female WRM graduates caused by gender stereotypes (e.g., hydraulic engineering is the domain of men).

Recently, there have been attempts to introduce practical approaches to mainstreaming gender in water management. Best and Taganova (2021) examined water management from the perspective of water conflict transformation. In their work, they considered gendered approaches, including applying FPE to four stages of water conflict (being Adversarial, Reflexive, Integrative and Action). Packett et al. (2020) examined water management from an IWRM lens as a process, skills and technology problem. They demonstrated that gender considerations during IWRM processes can lead to different biophysical modelling choices and outcomes. They discussed gender mainstreaming steps in the problem framing, model conceptualisation, modelling approach, implementation and interpretation of modelling exercises. In particular, they recommended the steps be informed by gender analysis and analytical toolkits, as considered in the recent practitioners' toolkit to guide gender equality, disability and social inclusion (Wahid et al. 2024).

### 1.3 | Policy Goals and Feminist Policy Analysis

The approaches and philosophies emerging from governments and development agencies should be evident in government policies. There has been significant research in Feminist Policy Analysis to examine these policies—for example how gender-inclusive policies are, what aspects of gender could be improved, and what the effect of the gendered policy is on gendered outcomes.

Some of the leading desktop-based techniques for examining policy documents and assessing their effectiveness come from the domestic violence literature. Htun and Weldon (2012) developed a scoring scheme for assessing the maturity of a country's domestic violence policies. This scoring scheme was applied to 70 countries allowing the authors to identify correlates and conclude that the most significant factor driving policy change is feminist activism. They defined their point scoring system using expert opinion on the most significant features of domestic violence policy (i.e., services to victims, legal reform, targeted action to vulnerable populations and training for professionals).

For water policies, Gumucio and Rueda (2015) introduced a grading system to explore gender mainstreaming approaches in South America. The grading system rated the level of gender integration from 1: 'No reference to gender issues' to 5: 'Gender included in the document from objective down to action plan, with clear resources identified for implementation'. This was also applied in Tanzania by Kironde et al. (2022). Similarly, Paudyal et al. (2019) produced a scoring system that ranked policy based on a combined set of criteria for gender and climate change.

For insights into areas that could be improved, gender theorists such as McPhail (2003) have put together lists of questions that a policymaker can consider (e.g., does this policy assume a cis-gender white female?). These have been revised and advanced in Kanenberg et al. (2019) into a series of 50 questions broken down into 12 categories (e.g., intersectional identities, state-market control, equality). The idea is that policymakers ask themselves questions such as, 'Does the policy treat people differently in order to treat them equally well?'

The policy renewal process also offers insights into which parts of policy should be reviewed and improved. For example, Devkota et al. (2022) used key informant interviews and focus group discussions to examine the effectiveness of the gender policy on local empowerment. Their work advised on the need for economic and political rights and entitlement to productive resources to advance policy goals. The same is true of monitoring and evaluation reports. Where available, monitoring and evaluation reports identify gaps in the implementation of policies and offer insights on where the policy reviewer ought to prioritise attention.

### 1.4 | Gender-Specific United Nations Millennium Development Goals (MDGs) and Sustainable Development Goals (SDGs)

This overview would not be complete without noting the influence of the United Nation's specific inclusion of gender in its development goals.

The Millennium Declaration in early 2001 set eight goals to be achieved by 2015, with Goal 3 being to 'promote gender equality and empower women' through realising the target to 'eliminate gender disparity in primary and secondary education, preferably by 2005, and in all levels of education no later than 2015'. This target reflects the widely-held view that education leads to economic and social improvement for women. There is substantial evidence (see e.g., mdgmonitor.org/millennium-development-goals) that significant progress was made over the 15 years (2001–15) in all goals. Perhaps the true worth of the MDGs was that they mobilised countries to develop strategies and commit to addressing disease, hunger, poverty, environmental degradation and discrimination against women.

In September 2015, the United Nations adopted a 2030 Development Agenda, 'Transforming our World', containing 17 goals and 169 targets, many being a continuation and expansion of the MDGs. This development agenda perhaps better considers the complementary and symbiotic relationships between the goals than were considered in framing the MDGs. Goal 5 is 'to achieve gender equality and empower all women and girls. Gender equality is seen as a fundamental human right, essential for social progress, poverty reduction, food security, and a peaceful and prosperous world'.

Nepal's response to SDG 5 includes reducing gender-based violence and discrimination, eliminating harmful practices such as genital mutilation, and increasing opportunities for women's leadership at all levels (NPC 2017). The latter includes

increasing women's share of decision-making positions in the public service from 2.0% to 7.5% by 2030. While SDG 6 (WASH) does not include specific reference to gender, it does include a continued commitment to IWRM.

## 2 | Background to the Nepal Trial

Nepal's deep engagement with international donors, development banks, the United Nations, and active gender-based research community, make it a prime location to examine the influence of gender on policy development. Much of the international investment in the country, besides seeking to improve the livelihoods of its people, is directly related to water—its generation as glaciers and snow in the Hindu Kush, and its many rivers with their potential for production of hydropower within Nepal, and the industries and societies that they sustain as they make their way through Nepal to India and Bangladesh. Developing water-related policies and implementing programs poses many challenges. We believe that Nepal's experience in this regard could provide valuable insights into similar issues faced in other countries of the global South. This section provides background to Nepal's gender and IWRM journey and synthesises some of the challenges it faces.

Nepal opened the door to the outside world in the 1950s, and the norms and principles of global discourses started to find their way into Nepal's policies and plans. At that time, the policies on drinking water, irrigation, and agriculture remained gender-blind, the principles of IWRM had not been founded, the literacy rate for females was low, and very few women were in government or private sector decision-making positions.

Multi-party democracy enabled civil society growth in 1990. This allowed non-government organisations and women activists to lobby for women's rights to water and land including ownership, access and use (Shrestha et al. 2018). The new natural resource management frameworks tried to comply with international gender and development obligations. The Dalit (low caste) and Janajatis (Indigenous groups) movements demanded political and development representation. In 1999, the Government of Nepal (GoN) passed the Local Self Governance Act 1999 to involve women and other marginalised groups in the developmental process.

In 2006, Nepal formulated an Interim Constitution (GoN 2007) followed by a new Constitution in 2015 (GoN 2015) that established Nepal as the Federal Democratic Republic. The new constitution ensured women, Dalit and other disadvantaged groups' proportionate participation from parliament to municipal councils. At least one-third of elected officials must be women (GoN 2015). The Election Commission also mandated that one of every four ward representatives in local bodies must be a Dalit woman (The Asia Foundation 2018). Despite some progress, Nepal has failed to fully meet objectives of guaranteeing women's complete and equal participation in water management at both the national and local levels. While efforts have expanded women's access to clean water and reduced their water burden (Budhathoki 2019), Goodrich et al. (2017) note that there is still a long way to go.

The active participation of Nepalese women in policy formulation is still questioned. In fact, in the USAID Poverty Alleviation Fund project evaluation group survey, one-fifth of the women who responded did not feel they could make decisions affecting their own life such as incurring minor expenses without seeking approval from the head of household (IEG 2017). ACIAR (2019) also reported that some women felt uncomfortable approaching their male neighbours to access groundwater wells and other essential agricultural inputs. The issues are particularly pronounced among female-headed houses of lower social status (e.g., Dalit) where Pariyar et al. (2018) reported that they make a disproportionately larger contribution towards irrigation canal operation and maintenance relative to the amount of land they cultivate.

The development community has responded with programs that address the individual's skills and knowledge, political consciousness, and commitment (i.e., individual consciousness) towards gendered issues. For example, as part of USAID's development effort in water, the PAANI programme measured participants' responses to the question, 'Percentage of participants reporting increased agreement with the concept that men and women should have equal access to social, economic, and political resources and opportunities', to demonstrate changes in people's perceptions (USAID 2021). In a similar vein, O'Hara and Clement (2018) designed a gender-critical consciousness index to cover gender attitudes to intimate partner violence, son preference and gender attitudes. Buisson et al. (2022) then demonstrated that this index reflects a will to change (agency) through household surveys in three provinces of Nepal. As gender-critical consciousness increased, respondents desired to have: a higher level of input from women in agricultural decisions, better access for women to productive and non-productive capital, and better access to land and poultry.

Regarding informal norms of organisations and institutions, O'Hara and Clement (2018) reported that political participation was still considered a male domain and too 'dirty' for participation by women. Likewise, ACIAR (2019) described how sociocultural anxieties restricted women from seeking agricultural inputs, accessing groundwater and even caused a transition to less valuable crops. Within government institutions, Regmi (2005) reported that the women in policy-making institutions were excluded from policy-making practices, bypassed in meetings and not consulted. Udas and Zwarteveen (2010) related this to the 'dominant professional culture of irrigation engineers [which] is strongly masculine, linking professional performance to masculinity'. Furthermore, the GoN's Irrigation Master Plan (MoEWRI 2019) recommended research into women's position in decision-making to help feed into future policy reform.

For the representativeness of the formal institutions themselves, Nepal has an affirmative action policy with quotas for entry into the civil service for women and marginalised groups (e.g., Dalit). Jamil and Baniamin (2020) reported that women's representation was increasing; however, women were still mostly holding junior or non-gazetted posts, and the bureaucracy was still dominated by men of Brahmin and Chhetri caste/background. Quotas are used to ensure and promote women's representation on water-related bodies. However, Buisson et al. (2022) discovered that more gender-conscious survey recipients wanted to participate

less in agricultural groups (farmers' groups, forest community user groups, or water users' committees) because participating in the male-dominated forums was not considered an efficient use of women's time and energy. Additionally, according to the Asian Development Bank's community irrigation project (ADB 2020), the project staff reported that literacy, especially among remote communities, was a significant obstacle to meaningful participation in water user association leadership and decision-making.

In summary, the major challenges we identified when developing water-related policies and plans for gender were:

a. social anxieties at a household level (e.g., around women's agency to make decisions at a household level, women's role in agriculture and men's role in domestic chores)
b. developing the decision-making capacity of women (agency, networks, skills, education, training, etc.)
c. appreciation that not all women's issues are the same (especially for groups of lower social standing)
d. malformed or untested assumptions about what is effective in addressing gender inequality (e.g., gender quotas on water user groups do not guarantee women's interests are met).

## 3 | Materials and Methods

Our goal is to evaluate how effective water-related policies are in driving gender transformative change. We could examine one policy through an FPE approach or one policy document against the 50 FPA questions of Kanenberg et al. (2019). However, the task becomes less manageable and effective as the number of policy documents increases. Alternative indices, such as the grading system of Gumucio and Rueda (2015) discriminate between fewer considerations of gender than desirable. The compromise was to focus on a subset of gender-related policy questions and build them into a simple multi-dimensional index. We recognise that focussing on some areas and not others may be subjective with the opportunity to introduce biases. This subjectivity is reduced by examining the gendered outcomes reported in the literature for our trial location, Nepal (Section 2). This also assists us in determining which aspects of FPA might be useful to prioritise in the formulation of the index.

We used historical accounts of water resource management practices and key plans and policies related to drinking water, water resource management, and irrigation sectors in Nepal to conduct our analysis. A detailed list of these sources is provided in Tables 2–4 in Section 3. Our methodology for applying the index is explained in Section 3.2. In total, we evaluated 16 water-related policies against the established criteria.

### 3.1 | Nepal's Federal Water-Related Acts, Policies and Regulations

We reviewed and analysed 16 national water-related policies and Acts across 3 sectors (WRM, WASH and agriculture (listed and summarised in Tables 2–4 respectively). The scope for our work is Nepal's national policies. Since 2015 provincial and local governments of Nepal have begun establishing their own water-related policies and acts, so this is not the complete picture of Nepal's water-related policy. However, national policy sets the context for policy creation at the provincial and regional scale and needs to set the benchmark for enshrining democratic and human rights. This section provides the context and background of the policy documents.

### 3.2 | The MDI-GWP Scoring Criteria (Dimensions)

To measure how well gender is captured in water-related policy, we have set criteria broadly divided into dimensions that foster a gender-transformative approach built upon the FPA questions of McPhail (2003) and Kanenberg et al. (2019). The dimensions are context [of the policy], intersectional identity, gender equality, power analysis and material versus symbolic reform. These are defined in Table 5.

### 3.3 | The MDI-GWP Scoring Process

We have proposed a six-level Likert scale (Table 6) based on how the policy considers gender. Although not perfect, the effect of considering gender in policy (MDI-GWP score) is similar to an assessment that you might make against the WHO's Gender Responsive Assessment Scale (described in Table 1). The comparison is not perfect as we are looking at policy documents and not their actual implementation; however, it gives policy actors some ideas of how they might improve their policy. Rating (Table 6) for each dimension was informed by guidance questions set out in Table 7. Assignment of scores to ratings followed the feminist practice of scoring 'gender blind' as 0 (Table 6). Thus, the minimum rating for a dimension is 'Negatively considered' (score of −1) and the maximum rating is 'Always considered' (score of 4).

Scoring was undertaken by a Nepalese gender specialist who had extensive expertise in policy evaluation, feminist policy frameworks, and gender-responsive assessment methods. She employed a structured rubric grounded in established gender policy assessment frameworks and cross-checked with existing literature to ensure the scoring process's dependability and consistency. For scoring of each dimension, the gender expert: (1) read the policy including any explanatory material (referenced documents); (2) used the guidance questions posed against the dimension (Table 7) to assess the level at which the dimension was considered (from 'Never considered' to 'Always considered'); and then (3) amalgamated the response into a Likert score.

The members of the research team who were not gender specialists had collective knowledge of the Nepali policies and gender and social inclusion principles through other research activities. The research team also ensured that the scoring framework was aligned with best practices in gender analysis. Nevertheless, we acknowledge the potential benefits of incorporating multiple specialists in future iterations of the index to improve scoring reliability.

**TABLE 2** | The five water-related articles (acts, policies, plans, strategies, rules) in the WRM sector reviewed in this analysis, together with an overview of their content from a gender perspective. The articles are ordered by year and both Nepalese and Gregorian calendar years are provided.

| Article | Overview of the article content |
|---|---|
| Water resources Act, 2049 (1992) | The first water-related legislation was passed in Nepal through this Act, with its primary aim to promote water resources development, management, and conservation. The Act has prioritised the utilisation of water resources for various purposes, such as drinking, household needs, irrigation, agricultural development, and hydropower. The legislation *institutionalised the Water User's association (WUA)* to empower local water users to manage and decide about local irrigation systems. Note, membership of WUAs was limited to household heads with land ownership certificates (Meinzen-Dick and Zwarteveen 1998)—and few women at the time had such certificates. (Nepal Law Commission 1992) |
| Water resources rules, 2050 (1993) | These rules govern how committees should operate. It established specialised committees (e.g., service charge fixation committee, compensation fixation committee) and how they are to be constituted, for example, 'with a specialist relating to water resources', effectively excluding women and other marginalised communities. (Nepal Law Commission 1993) |
| National water resources strategy, 2058 (2002)<br>National water plan, 2061 (2005) | This strategy and plan incorporated IWRM concepts. IWRM targets decentralised delivery of water services, inclusion of stakeholders, gender parity, social equality, and a balance between rural and urban growth (WECS 2002). The plan was tested in two different regions of Nepal through donor funding. However, the pilot programmes were discontinued due to lack of funding (WECS 2005) |
| National water resources policy, 2077 (2020) | This policy aimed to provide integrated policy oversight for developing and managing all water resources in Nepal, across the three levels of government (federal, provincial, local). Its long-term vision is 'economic prosperity and social transformation through multi-dimensional, equitable, and sustainable development and multiple uses of water resources'. In keeping with the GoN's priority of economic development, the policy has a focus on hydropower, large-scale water storages and irrigation projects, and inter-basin transfers. It includes high-level strategies to develop the capacity of institutions and people in the water resources sector needed to realise the economic development vision. (MoEWRI 2020) |

Finally, we calculated an average score for the policy which was the mean of the dimension scores. This assumes that each dimension is equally important. More emphasis on particular dimensions can be added by weighting them differently and/or using a different combination method.

## 4 | Results of the Nepal Trial

The assessment of 16 of Nepal's federal water-related policies, strategies, rules, regulations and Acts using the MDI-GWP is given in Table 8. Some policies were gender-blind including the Water Resources Act of 1992, the Water Resources Rules of 1993 and the most recent National Water Resources Policy of 2020. Others such as the Nepal Water Supply, Sanitation and Hygiene Sector Development Plan 2016 often consider gender. It is worth discussing these in the timeline context as shown in Figure 1.

### 4.1 | Synopsis of Results

The analysis started with the Irrigation Policy of 1992; prior to this policy documents did not consider gender at all. The 1992 Policy introduced policies for the participation of women including mandates for women in executive positions of Water User Associations (WUAs), that is two of the nine positions. This and other measures meant that in the MDI-GWP, three dimensions ('context', 'gender equality' and 'power analysis') scored 'Sometimes considered' (a score of 2). Figure 2 shows the number of dimensions that scored 'Sometimes considered' (or better) for each policy document. It shows the continuation and improvement in policy consideration of gender from 1992 through the following decades. In the late 1990s the Dalit and indigenous peoples' movements gained momentum and the policymakers began to take notice of these groups. The Irrigation Regulation of 2002 mandated two seats for Dalits and other low-income groups in Irrigation WUAs. This is shown in Figure 2 as a rise to four dimensions that scored 'Sometimes considered' for each policy document.

The water resources management (WRM) related policies showed a similar increase in the number of gender dimensions that were scored 'sometimes considered gender' during the early 2000s. This was a consequence of adoption of IWRM approaches and consequently the National Water Resources Strategy of 2002 aimed to have equal participation from women. The National Water Plan of 2005 follows with ambitions to include

**TABLE 3** | The six water-related articles (acts, policies, plans, strategies, rules) in the WASH sector reviewed in this analysis, together with an overview of their content from a gender perspective. The articles are ordered by year and both Nepalese and Gregorian calendar years are provided.

| Article | Overview of the article content |
|---|---|
| Drinking water regulation/Rules, 2055 (1998) | This regulation established six types of committees including drinking water users associations and consumer committees. However, no special provisions were made for women or others' membership in the committees. (GoN 1998) |
| Rural water supply and sanitation national policy, 2060 (2004)<br>Rural water supply and sanitation strategy, 2060 (2004) | The policy and strategy were imperative to achieving the government's goal: that by 2017 it would provide universal access to drinking water and sanitation. Women face significant challenges of collecting water and missed opportunities as a result. To combat this issue, the strategy mandates the representation of women, disadvantaged ethnic groups, and castes in the water users and sanitation committees, with a minimum of 30% women. Moreover, the strategy takes proactive measures such as income-generating programs and adult training schemes. (MoPPW 2004) |
| National urban water supply and sanitation sector policy, 2065 (2009) | The 2009 policy sought to address the haphazard growth of urban populations and the different needs of urban areas (compared to rural areas). The goal was to achieve equity in service delivery to financially marginalised households, protect the environment and improve health outcomes. (MoPPW 2009) |
| National water supply and sanitation policy, 2070 (2014) | This 2014 policy (reviewed in draft form) focused on improving water supply and sanitation including to slum, squatter dwellers, and disabled people. *One-third of executive members* are to be women with one or more members from indigenous and disadvantaged groups. The WUAs are to have *at least one female member* in the four most senior positions. The policy recognised the social and political context of the service area and made provision to identify regions with high concentrations of low-income residents, squatters, and others who require additional support to access essential services. (MoWSS 2014) |
| Nepal Water supply, sanitation and hygiene sector development plan, 2072 (2016) | The focus of this plan was to effectively reduce gender inequality in water management through the implementation of targeted programs that address the unique needs of women and girls. (MoWSS 2016) |

participation from women's groups and increase participation by women farmers.

Since 2000, regulations have been put in place to ensure that women make up 33% of WUAs. This move towards greater representation was influenced by discussions about women's rights during Nepal's first Constituent Assembly, as well as by the first elections of the federated Nepal, that took place in 2007. The National Water Supply and Sanitation Policy (2014) is an example of a law that has helped to empower women in the management of local water resources. The policy mandates that WUAs should have at least one woman holding a key position and that women should make up 33% of the group. These regulations were a significant step forward for women's rights.

Recent laws in the period 2004 to 2016 progressively gave women a more prominent role in managing water resources. These newer rules include programs specifically designed to empower women. For example, the Nepal Water Supply, Sanitation, and Hygiene Sector Development Plan 2016 highlights the importance of involving girls and women and reducing gender inequality in water resources management by creating tailored programs that meet their unique needs.

Figure 3 shows how the 16 reviewed federal water-related articles considered the five MDI-GWP dimensions. 'Gender equality' and 'Power analysis' have been given the most consideration in the Nepali water-related articles, while none considered the importance of the 'Intersectional identity' of women. 'Material consideration' of gender issues was often considered in 24% of the articles. These outcomes are expected.

Interestingly, 75% of the provisions 'Sometimes considered' (score of 2) gender-based issues in their problem description or framing (context dimension). There were statements like, '... participation of women farmers is critical' in many policies. This does not say that participation by women in policy development was high—it was probably relatively low. For example, the National Water Plan 2005 acknowledged the contribution of three women among the 80 individuals acknowledged by the Secretary in opening remarks.

**TABLE 4** | The five water-related articles (acts, policies, plans, strategies, rules) in the agriculture sector reviewed in this analysis, together with an overview of their content from a gender perspective. The articles are ordered by year and both Nepalese and Gregorian calendar years are provided.

| Article | Overview of the article content |
|---|---|
| Irrigation policy, 2049 (1992)<br>Irrigation policy, 2053 (1997) | These policies prescribed a minimum of 20% female membership in the executive committee of a water users association (WUA). (GoN 1992; GoN 1997) |
| Irrigation rules/Regulations, 2057 (2000) | In 2004, the irrigation rules/Regulation 2000 was amended to include *33%* female membership in irrigation WUA executive committees including two from dalit. Other committees, including those constituted to work closely with the GoN to develop and supervise large-scale irrigation projects, do not have such representation quota. (GoN 2000) |
| Irrigation policy, 2060 (2003) | This policy sought to increase the roles and responsibilities of the local WUAs in developing and managing irrigation systems, following a doctrine of decentralisation. It increased the representation of women on WUAs to be *at least 33%* as well as requiring 'representation of dalit, downtrodden and backward ethnic communities' (clause 2.4.4). (WECS 2003) |
| Irrigation policy, 2070 (2013) | This policy was introduced as part of the constitutional amendments in Nepal, which included protections for women and other minority groups. It had a specific focus on small-scale irrigation projects including subsidies for irrigation services for the poor and marginalised (MoEWRI 2013). In WUAs, it mandated a minimum 33% quota for women and disadvantaged groups. |

Figure 3 traces the evolution of the five MDI-GWP dimensions in the reviewed articles over the 3 decades, the 1990s, 2000s and 2010s.

Nine water-related policies came into effect during the 1990s. One-third of them considered 'Context' or 'Gender equality' or 'Power analysis'. This trend continued in the 2000s when most of the water-related articles were published. The 2000s saw the recognition of 'Material action' for the first time in some of the articles. However, the efforts to step up gender seem to have stagnated in the 2010s, and only a quarter of the 12 articles during that decade considered the gender dimensions included in the MDI-GWP.

## 5 | Discussion

Assessing gender issues and inequalities in water-related policy, rules, regulations and Acts is complex and intersects with dimensions of context, intersectional identity, equality, analysis and reform processes. We developed the Multi-Dimensional Index of Gender in Water Policy (MDI-GWP) tool to acknowledge that individuals experience multiple identities and face various forms of discrimination and disadvantage based on the intersection of their identities. The tool is a departure from the traditional approach to identify gender-aware policy and can provide important information on areas for improvement and consideration. This gives the user of the tool more confidence to make concrete policy guidance.

We trialled the tool to assess 16 federal water-related policy documents in Nepal within a 3-month window. The process, though time-consuming requiring critical examination of documents and extracting the specific gender information, allowed us to understand the scrutiny of gender policy responses, interpret policy trends and compare policies between sectors. That said, the process is still subjective. We recommend controlling for interpretation by having one trusted person undertake all analysis (as we did). Or for more robust results, engaging a group of gender experts to undertake the assessment using a Delphi method.

Some important aspects of policy development process were not assessed using MDI-GWP; for example, whether the policy documents were constituted in an inclusive manner (i.e. broader context of policy development) and whether the policy documents were symbolic or material in their nature.

### 5.1 | Implications for Gender Mainstreaming in Nepal's Water Policy Development

The assessment of water-related policy, rules, regulations and acts has revealed that women, Dalits, and other marginalised communities are increasingly able to make greater contribution to water resources management. Since the 1990s, water policies have shifted towards a more 'participatory' approach, wherein control of local water supplies is delegated to user committees. However, the evaluation revealed a glaring oversight in considering intersectionality, with a lack of female representation in water decision-making especially in the national level.

The concept of intersectionality became popular in the 2000s. Intersectionality involves understanding how considering a person's gender, caste, sex, ethnicity, sexuality, religion and disability may create new challenges or opportunities for individuals. The second wave of feminism applied intersectionality to recognise the experiences of women of colour, poor backgrounds and immigrants in the western world (Hooks 2014). We argue that considering intersectionality in future policies and acts will broaden the scope and enhance the effectiveness of gender

**TABLE 5** | Definition of the 5 dimensions that compose the multi-dimensional index MDI-GWP for rapid analysis of water-related policies from a gender perspective, together with our motivation for selecting the dimension.

| Dimension | Dimension definition | Motivation |
|---|---|---|
| Context [of the policy] | How the policy was constructed and how the policy [implicitly] portrays itself. | Who describes policy problems and how they describe policy problems influence the design of policies. Bacchi (1999) and Rixecker (1994) elaborate on theoretical aspects and Jamil and Baniamin (2020) note the issue for Nepal. |
| Intersectional identity | Describes how combinations of discriminators, such as gender and race, cause groups to have differing outcomes (positive or negative).<br>Weldon (2008) provide a useful discussion of what is meant by intersectional identity. | Appreciation that not all women's issues are the same. For example, Pariyar et al. (2018) report dalit make a disproportionately larger contribution towards canal O&M, than their representation in canal decision-making. Jamil and Baniamin (2020) report mostly Brahmins/Chhetris hold senior decision-making positions in Nepal government bureaucracies. |
| Gender equality | 'The aim of gender equality is for men and women to have equal participation in decision-making; the same access and control over productive resources, services and technologies; equal benefits from project results and the same opportunities to access decent employment and livelihood systems' (Sriram et al. (2019) | Equality is a universal human right, and a key ingredient for a sustainable and fair world. Gender equality is embedded in the United Nation's sustainable development goal 5 (gender equality) (to which most countries of the world have subscribed)—incorporating principles of gender equality into policy seems an extremely efficient and practical way for countries to motivate and realise this goal |
| Power analysis | Power in this context is the ability to access resources, voice and exert influence or control. There are several nuances (e.g., power over, power with, power to—see Cahill [2008]). This is not prescriptive about whether power is considered at a government level or reflects the internal agency that people already have. Power analysis indicates whether the policy considers the interplay of power dynamics. | Several studies describe power dynamics as affecting gendered outcomes (e.g., Buisson et al. 2022; ACIAR 2019).<br>Further, and especially in industries that involve infrastructure/engineering, many studies highlight deeply rooted power dynamics (e.g., in the forestry industry [Ville et al. 2023]). |
| Material/ symbolic reform | Following the language of McPhail (2003), we differentiate between policy reforms that are 'material' versus those that are merely 'symbolic'. 'Material' is used to describe policies that improve the issue they were designed to solve by actual implementation and policy output. 'Symbolic' is used to describe insubstantial, tokenistic, or even insincere policy statements. | Twofold (1) see evidence of policy aspirations being implemented; (2) identify policy instruments that are ineffective or problematic. For example, is participating in a water user group beneficial, or laborious (as suggested by Buisson et al. (2022). |

**TABLE 6** | Six-level MDI-GWP rating scale and associated score.

| Rating | MDI-GWP 'score' | Similarity to WO gender responsive assessment scale |
|---|---|---|
| Negatively considered | −1 | Gender unequal |
| Never considered | 0 | Gender blind |
| Rarely considered | 1 | Gender aware |
| Sometimes considered | 2 | Gender sensitive |
| Often considered | 3 | Gender specific |
| Always considered | 4 | Gender transformative |

mainstreaming in Nepal and potentially in other countries in the global South.

In recent years, there have been significant efforts to promote gender diversity and inclusivity in decision-making processes. One of the key strategies adopted has been to reserve positions for women, with a particular focus on including marginalised groups like the Dalits in Water User Associations. While these policies have been successful at local level to some extent, the following gaps need to be addressed to fully mainstream gender

**TABLE 7** | Rating rubric for each dimension.

| Dimension | Guidance questions to inform dimension rating |
|---|---|
| Context [of the policy] | • Are women clearly visible in the policy? |
| | • Is the scope of the policy limited to issues that are traditionally associated with women such as violence or reproduction (with all the assumptions that go with traditional definitions)? |
| | • Does the policy have embedded male bias (e.g., the male experience used as the norm), and/or patriarchal or paternalistic overtones? |
| | • Are expected outcomes related from male experience? |
| Intersectional identity | • Are the multiple and intersectional identities of women (gender, marginalised/disadvantaged group) explicitly addressed in the policy? |
| | • Are the multiple and intersectional identities of others explicitly addressed in the policy? |
| | • Is intersectionality, as a concept, reflected at all in the policy? |
| Gender equality | • 'Does the policy treat people differently in order to treat them equally well?' (Kanenberg et al. 2019) |
| | • Does the policy promote greater equality by considering gender differences in the context of discrimination based on factors like race, caste, ability, religion, and immigration status (among others)? |
| | • Does the policy mandate inclusion of a certain percent women in the committees or equal percentage of women in the policies? |
| | • Does the policy consider access to resources in its treatment of different groups in society? |
| Power analysis | • Does the policy empower women of varying race, caste, ability, religion, and immigration status (among others)? |
| | • Does the policy instruct representation/participation of disadvantaged segments of people such as different groups of women, elderly, people with disabilities, caste/ethnic and religious groups, in capacity building programs, water management committees etc.? |
| Material/symbolic reform | • Is the policy merely symbolic with no provisions for enforcement, funding or evaluation? |
| | • Does the policy come with provisions for enforcement? |
| | • Does the policy describe gender-based metrics for establishing the effectiveness of the programme including recording the gender of participants? |
| | • Does the policy include provisions for monitoring, evaluation and learning? |
| | • Does the policy presume ideal governance or does it describe actions when there are gender-based failings? For example, are the committee meeting and its outcomes valid if none of the nominated women attend and the actual participants are entirely male? |

considerations for more equitable and inclusive decision-making at all governance levels.

i. **Recognising diversity among women:** The current policy, rules, regulations and Acts regard women as a singular group, without considering the unique experiences and marginalisation faced by women from Dalit and other communities. Quotas set aside for women are most likely to benefit those who are well-educated, self-reliant, and confident in expressing their opinions. Unfortunately, the demands and interests of women are often underrepresented in user groups, irrigators, and farmers (Ghimire 2005). Therefore, it is crucial to ensure that women from a combination of social backgrounds are properly represented in associations, committees, and groups.

**TABLE 8** | MDI-GWP scores for the 16 articles reviewed, ordered by year within sector (Ag = agriculture; WASH = water sanitation and hygiene; WRM = water resources management). Scores are given for each dimension and the average across the 5 dimensions.

| Article | Sector | Year | Context [of the policy] | Intersectional identity of women | Gender equality | Power analysis | Material/ Symbolic reform | Average |
|---|---|---|---|---|---|---|---|---|
| Irrigation policy | Ag | 1992 | 2 | 0 | 2 | 2 | 1 | 1.4 |
| Irrigation policy | Ag | 1997 | 2 | 0 | 2 | 2 | 1 | 1.4 |
| Irrigation rules/regulation | Ag | 2000 | 2 | 0 | 2 | 3 | 1 | 1.6 |
| Irrigation policy | Ag | 2003 | 2 | 0 | 3 | 3 | 1 | 1.8 |
| Irrigation policy | Ag | 2013 | 2 | 0 | 3 | 3 | 3 | 2.2 |
| Drinking water regulation/Rules | WASH | 1998 | 2 | 0 | 2 | 2 | 0 | 1.2 |
| Rural water supply and sanitation national policy | WASH | 2004 | 2 | 0 | 2 | 2 | 2 | 1.6 |
| Rural water supply and sanitation strategy | WASH | 2004 | 2 | 0 | 3 | 3 | 2 | 2 |
| National urban water supply and sanitation sector policy | WASH | 2009 | 2 | 0 | 3 | 2 | 2 | 1.8 |
| National water supply and sanitation policy (draft) | WASH | 2014 | 2 | 0 | 3 | 3 | 3 | 2.2 |
| Nepal water supply, sanitation and hygiene sector development plan | WASH | 2016 | 2 | 0 | 3 | 3 | 3 | 2.2 |
| Water resources Act | WRM | 1992 | 0 | 0 | 0 | 0 | 0 | 0 |
| Water resources rules | WRM | 1993 | 0 | 0 | 0 | 0 | 0 | 0 |
| National water resources strategy | WRM | 2002 | 0 | 0 | 2 | 0 | 0 | 0.4 |
| National water plan | WRM | 2005 | 2 | 0 | 3 | 3 | 0 | 1.6 |
| National water resources policy | WRM | 2020 | 0 | 0 | 0 | 0 | 0 | 0 |

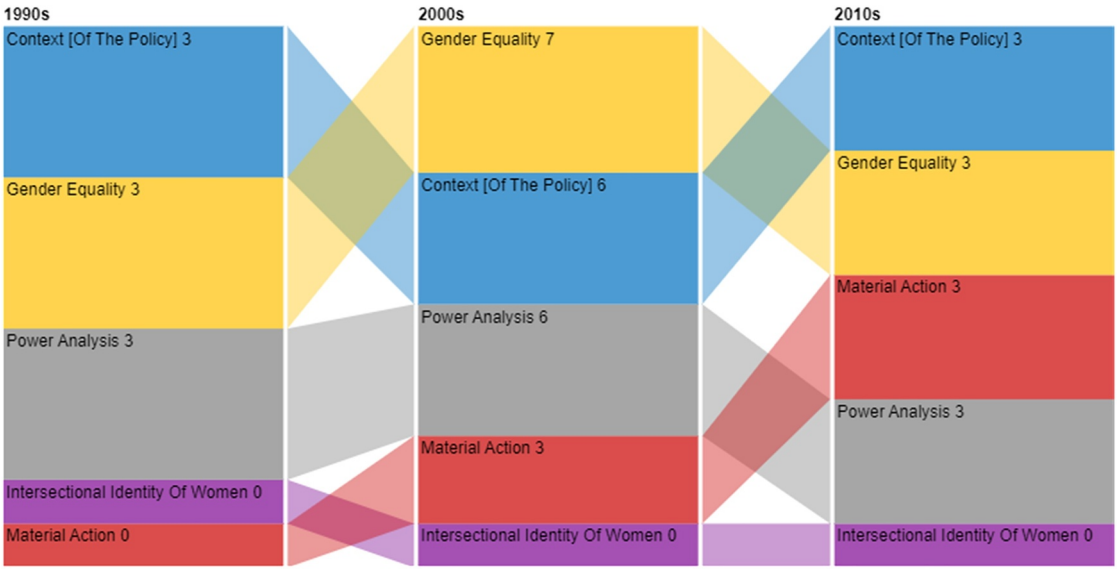


**FIGURE 1** | Tracing of the evolution of the MDI-GWP dimensions in the reviewed articles across 3 decades. The dimension name is provided in each bar, together with the number of articles with scores ≥ 2 (sometimes considered, often considered, always considered) for that dimension.

ii. **Empowered involvement of women and marginalised people:** The assessment showed positive discrimination such as reservation for women and marginalised groups. However, Buisson et al. (2022) suggest that it might not have produced the expected positive outcomes. Including marginalised groups in committees to fulfil

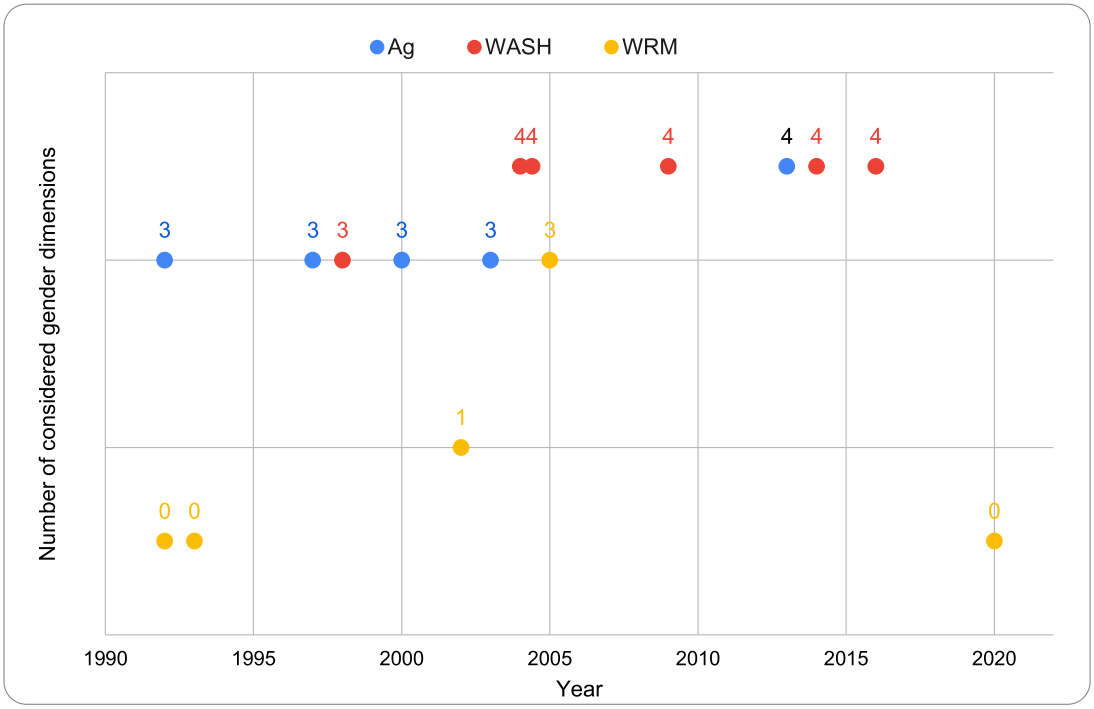


**FIGURE 2** | Number of MDI-GWP dimensions with scores ≥ 2 (sometimes considered, often considered, always considered) in the reviewed articles by sector. Each dot represents an article and dots are arranged chronologically. The left-most blue dot (Ag) represents the Irrigation Policy 1992. The Irrigation Policy 1992 (GoN 1992) scored 'sometimes considered' in 3 dimensions (context [of the policy], gender equality and Power analysis), so it is labelled 3. The bottom-left yellow dots (WRM) represent the water resources act 1992 (Nepal Law Commission (1992) and the water resources rules 1993 Nepal Law Commission (1993), neither of which scored ≥ 2 in any dimension, thus both are labelled 0.

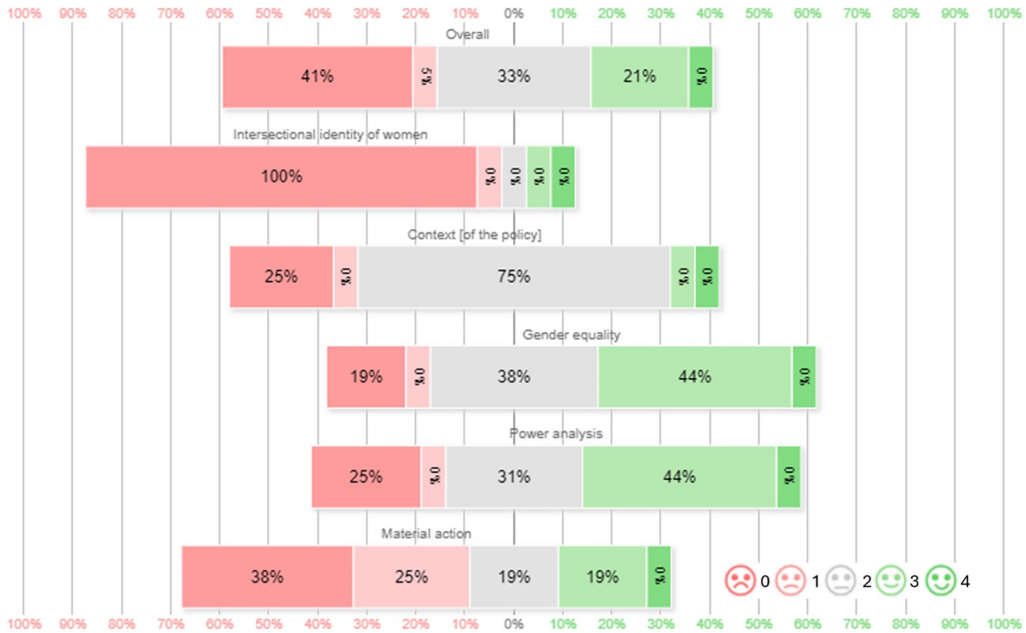


**FIGURE 3** | MDI-GWP dimensions considered by the 16 reviewed nepali federal water-related articles. To read this figure: for the 'material action' dimension, 38% of articles scored 0, 25% scored 1, 19% scored 2, 19% scored 3% and 0% scored 4.

mandatory requirements will not necessarily address gendered roles (Shrestra and Clement 2019). Further thought should be given to how women can physically engage in WUAs, given women's generally longer working days (than male partners/counterparts) and often reduced ability to travel and be away from the home to attend meetings (Meinzen-Dick et al. 2022). Capacity enhancement should include funding programs such as literacy and childcare support, or introducing subsidies and grants. Measures have been suggested as part of the

Nepal Water Supply, Sanitation, and Hygiene Sector Development Plan and should be implemented.

iii. **Revisiting criteria of user group associations:** Women's representation in WUAs should increase to 50% given their high participation in agriculture. Membership criteria should extend beyond land owners (mainly men) to tenant farmers and migrant households (Meinzen-Dick and Zwarteveen 1998). These new members may need additional assistance because they will have the greatest debts and least capacity to get sufficient water (Fleming-Muñoz et al. 2021). Reservations should also extend to senior forums as is commonplace now in Nepal.

iv. I**ntroducing a Framework for Policy Monitoring and Improvement:** Adding monitoring, evaluation and learning to Nepal's WUA policies would involve implementing processes to track and assess the effectiveness of these policies and programs, as well as using the gathered data and insights to make informed improvements. This approach ensures that policies are not only created but also monitored for their impact, evaluated for their effectiveness, and continuously improved based on what is learnt from the process.

### 5.2 | Implications for Water Resources Management in Nepal and Elsewhere

Nepal's National Water Plan 2005 included 9 references to 'women' and 6 to 'gender'. However, no such references exist in the recent National Water Resources Policy 2020. The latter policy contains many references to benefit-sharing and the multi-dimensional nature of water; however, it contains no directives to address the inequalities in access to water and water-related decision-making (and thus sharing in the benefits) experienced by women and other disadvantaged groups. This contrasts with the most recent policies in other sectors. The new policy could have given special priority to women in different policy strategies. For instance, it could have explicitly mentioned different categories of women's participation/inclusion in strategy 6, that is on capacity building of institutions and personnel related to the water resources sectors.

There are contemporary anti-gender counter-movements in countries such as the USA; however, no such movements are documented in Nepal. Instead, it more likely reflects an international trend across water resources management policies to consider gender a low priority. Across the world, gender is rarely expressed in recent policy documents. For example, similar policies such as the European Union Water Framework Directive are gender-blind. The main motivation for including gender in water resources management is either strict implementation of IWRM or gender mainstreaming as part of development efforts.

Gender-blind decisions in water resources management have the consequence of undermining or being detrimental to the interests of women. Water resources management has been traditionally associated with masculine endeavours of large infrastructure—dams and irrigation schemes. Similarly, in Nepal, Khadka et al. (2021) suggest the current policy frameworks are biased towards large infrastructure and economic growth without sufficient consideration of inclusive growth. Gender analysis would likely identify that the direct beneficiaries of such schemes are a predominantly male construction workforce. Alternative strategies to achieve the same outcomes may achieve more equitable outcomes (for example, pro-poor subsidies to improve access to groundwater). In the case of Nepal, there is even a risk that the expected beneficiaries of water infrastructure (i.e., female farmers) will not be interested in pursuing the agricultural futures imagined for them if their water-related problems are not addressed sooner.

## 6 | Conclusion

The development community has embraced the idea that women are essential in driving economic development and change. As part of this acceptance, we can expect tools from feminist thinking, such as FPA, to support and shape the development of water-related policies. Existing analysis techniques were too general for our purposes or too detailed to tractably examine multiple water-related policies. In this paper, we introduced the MDI-GWP index to assist policymakers embed gender in their policies. The MDI-GWP index is a multi-dimensional index that measures different aspects of gender that might be captured in policies. MDI-GWP was underpinned by gender theory, such as Kanenberg et al. (2019), and contextualised to water and development through a detailed literature review.

This paper makes important contributions by integrating feminist perspectives into policymaking and introducing the MDI-GWP index. This index is a practical tool designed to measure various aspects of gender inclusivity in policies, providing policymakers and researchers with a useful method to include gender considerations in water-related policies. The development of the MDI-GWP index itself is a methodological advancement.

MDI-GWP was successfully trialled on 16 of Nepal's federal water-related policies. Through applying MDI-GWP, we identified intersectionality as a blind spot in Nepal's water-related policies. We could also discriminate between progress in the agriculture, WRM and WASH sectors. In Nepal's case, agriculture and WASH policy are on an improving trajectory for gender equity, while WRM policy has rebounded to the gender blind. While MDI-GWP was trialled in Nepal, we anticipate it would be useful in various global South contexts.

The shift away from gender in Nepal's WRM sector may be symptomatic of a global indifference towards gender in WRM. From the 1990s, IWRM sought to promote participation and inclusiveness with principle 3 focussing on the role of women. However, in the WRM sector, which focuses on large infrastructure, principle 3 has rarely been mentioned. The consequences of gender-blind decision-making in WRM are not easily determined but there is the potential for adverse outcomes for women and, by implication, unjust development outcomes.

Policy analysis is a complex task, regardless of the tool of choice. While the MDI-GWP approach has merits, it has not been

trialled by other groups or in other countries. The MDI-GWP may be considered too superficial by those well practised in feminist policy analysis. Further trials are required to determine whether the selected dimensions resonate with policy analysts and whether the guiding questions are sufficient.


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### Conflicts of Interest

The authors declare no conflicts of interest.

### Data Availability Statement

Data sharing not applicable to this article as no datasets were generated or analysed during the current study.

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