

Fostering gender-responsive water quality management in the Brantas River Basin, Indonesia

Recommendations for government and community



Guidance note and project report

Fostering inclusive growth, health and equity by mainstreaming water quality in river basin management in the Brantas River basin

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I. BACKGROUND AND RATIONALE

The multi-stakeholder project *Fostering inclusive growth, health and equity by mainstreaming water quality in River Basin Management in the Brantas River Basin* aims to strengthen water quality management and river health outcomes via an integrated and participatory approach that includes technical, institutional, and community strategies. An important aspect of strengthening water resource governance is the advancement of gender-sensitive approaches to water resource planning and service provision. Such approaches account for women's and men's concerns and advance more equitable participation in knowledge creation, decision-making, implementation, and evaluation.

As such, the Brantas Water Quality Project has several gender-related project goals:

- ✓ **Problem analysis** that accounts for gendered concerns, vulnerabilities, and barriers to access and control, including gender- and poor-sensitive studies to identify factors of inequity in communities and groups vulnerable to water pollution;
- ✓ **Guidance** for inclusive participation, with a focus on gender;
- ✓ **Specification of quantitative and qualitative indicators** to monitor progress on gender equity, including indicators of water management outcomes, water quality impacts, and engagement, access, participation, and decision-making in water governance; and
- ✓ **Strengthened participation** and capacity to promote community participation and women's empowerment in water management.

Within a well-developed policy commitment to gender-mainstreaming at the national, ministerial, and provincial levels in Indonesia, it is clear that implementation of gender-responsive programming and budgeting, actual application of gender analysis for water quality management, and facilitation of institutional support for gender in the area of water quality management remains far from easy. Implementation of gender mainstreaming at the kabupaten / kota level in the field of water resource management is clearly challenging, particularly because gender inclusion and responsiveness are often treated as secondary issues in planning.

Moreover, there is room to improve the level of detail in guidance to better support application of gender analysis specifically for water, waste, and wastewater management. It is additionally observed that women's concerns, knowledge, and capacities to manage water quality, river health, and waste management are often underrepresented



A riverside resident draws water from the Kali Surabaya to water her garden in 2022. Image source: Fully Syafi

in policy and management due to comparably lower levels of participation in formal planning mechanisms, despite women's active household and village involvement water and waste management.

In order to support efforts to strengthen gender mainstreaming, the Brantas Water Quality Project engaged a team of researchers, experts, and community representatives in Indonesia and the Netherlands to reflect on current challenges and opportunities for promoting gender mainstreaming in the field of water quality management. A June 2023 *Research Workshop on Gender-Responsive Water Quality Management in the Brantas River Basin* was organized at Airlangga University, Surabaya, to share research, policy, and experiences relevant to gender and water quality management in the Brantas. Participants included representatives of academia (Faculty of Social and Political Sciences, Universitas Airlangga; Faculty of Law, Universitas Merdeka Malang; Gender Research Center, Brawijaya University; Water Resource Management Department, Technical University of Delft), government (Dinas Lingkungan Hidup Jawa Timur, Balai Besar Wilayah Sungai Brantas, Dinas Pemberdayaan Perempuan, Perlindungan Anak dan Kependudukan Jawa Timur, DLH Kota Surabaya, DLH Kabupaten Blitar, and DLH Kabupaten Sidoarjo), and community organizations (Brantas Berdaya, Ecoton, Wadulink Sumengko, Sekolah Perempuan Gresik, Green Women Mojokerto).

Workshop participants exchanged research, community initiatives, and policy guidance related to gender and water management. The workshop was also used to identify a first-round of recommendations for improving water quality management in relation to gender, as well as to identify needs for promoting gender-responsive water quality management (e.g., formulation of policy guidance, training programs, etc.). These outputs and follow-on research and consultations were key inputs to the development of this guidance note.



Participants in the June 2023 Research Workshop on Gender-responsive Water Quality Management in the Brantas, Airlangga University

PURPOSE OF GUIDANCE NOTE

Effective and equitable water quality management depends on consideration of gender-differentiated needs and concerns in policy formulation and implementation, as well as the effective engagement of diverse stakeholders to incorporate and leverage gender-differentiated knowledge and ensure equitable access to and control over resources, information, and decision-making. For one, women and men have different roles, responsibilities, and needs regarding water resources. For example, women are often responsible for household water and waste management and men are often responsible for participating in village-level planning. Different roles, concerns, knowledge sets, and strategic needs underpin the need to mainstream gender as an integral consideration across activities and functions of water and environmental governance.

While Indonesia has a well-elaborated policy of gender mainstreaming for national, regional, and local planning, there is a need to further support application of gender analysis and gender-responsive planning, specifically for water quality-related policies and programs. Moreover, there is a need for more targeted work to empower communities, especially marginalized groups, in decision-making and planning. This guidance document includes recommendations and guidance targeted towards water and environmental managers in government agencies. In the Brantas River basin, specifically, these agencies include DLH Jatim, BBWS Brantas, and kota / kabupaten water and environmental management units. The note combines findings from individual research, policy review and analysis by TU Delft, input from community organizations, and findings and recommendations resulting from the workshop event described above. The note is intended to provide background information on gender and water quality management and gender policy in Indonesia and offer specific recommendations to strengthen responsiveness of standing water quality management practices and policy to gender-differentiated needs and concerns in the Brantas River basin and beyond.

The guidance and recommendations focus on:

- Applying gender analysis for planning and program development in water quality management,
- Improving collection of gender-disaggregated data to support planning, monitoring, and evaluation,
- Strengthening participation in decision-making and planning related to water quality management, and
- Capacity building for gender mainstreaming in water and environmental management.

Gender-responsive water quality management guidelines and processes are essential for promoting equity, inclusivity, and sustainability in water resource management. By integrating gender considerations into their policies, programs, and practices, government agencies can ensure that their water quality management efforts are responsive to the needs and priorities of all individuals and communities and contribute to the achievement of gender equality and sustainable development goals in the water sector.

GENDER AND WATER RESOURCES MANAGEMENT

Gender plays a crucial role in water resources management, influencing participation, decision-making, and access to water-related services. It is also recognized that women play a central part in the provision, management, and safeguarding of water resources and should be represented in decision-making processes. The gendered dimensions of water governance have been a central focus in the literature, particularly regarding women's participation in water management institutions (Harris, 2009). Critical assessment of who participates, in what capacity, and with what means are essential for understanding outcomes of participatory water management and achieving goals of community empowerment (Sultana, 2009). Despite the recognition of women's role in water resource management, challenges persist in implementing strategies to overcome gender-based obstacles to women's equal participation in water-related projects (Sülün, 2018). Moreover, it is acknowledged that men and women have different priorities regarding natural resources, shaping their involvement and interests in water resource management (Chifamba, 2013).

Studies have also highlighted the considerable gender imbalance in household activities, income-generating activities, participation, mobility, ownership, control of resources, decision-making power, and involvement in different activities in water management (Bahauddin & Huq, 2018). Efforts to address gender equality in water resource management have been observed, particularly in the context of achieving a more balanced division between women and men in various areas, including access to information, physical work, contributions, decision-making, and access to and control over resources and benefits (Singh, 2006).

Impacts of poor water quality and water pollution are also gender-differentiated. In many regions, water pollution disproportionately affects women and girls, as they are more likely to come into direct contact with contaminated water sources due to domestic and caregiving responsibilities (Brewster, 2006; Porter & Wallace, 2010). Moreover, inadequate access to clean water jeopardizes women's health, increases their caregiving burden, results in lost productive time, and limits their socioeconomic opportunities. As such, gender-responsive water quality management guidelines should prioritize the mitigation of these gendered impacts of water pollution to promote the well-being of women and girls.



View of Gunung Penanggungan over the Brantas River, Sidoarjo. Image Source: Fully Syafi

GENDER IN THE INDONESIAN CONTEXT

Gender in the Indonesian context differs somewhat from Western-imposed ideologies. Gender in Indonesia is conceptualized through a complex interplay of cultural, religious, and political factors. Historically speaking, the country's New Order gender ideology exemplified by "State Ibu-ism" emphasized women's altruistic duties to serve family and community (Hyunanda et al., 2021; Rhoads, 2012; Tilley et al., 2019). This ideology institutionalized women's duties to serve their families, communities, and the state, thereby constructing women as mothers for the sake of national development (Hyunanda et al., 2021). State Ibu-ism also shapes women's citizenship roles and led to women to experiencing various vulnerabilities in formal politics and dependencies on personal familial relationships to gain access and control in the public sphere (Howson, n.d.; Pohlman, 2016; Sundari, 2014). This is reflected, for example, in the often automatic appointment of village leaders' wives as the leaders of Pemberdayaan Kesejahteraan Keluarga (PKK) groups.¹ Gender norms and attitudes in Indonesia have been transitioning from a conservative-traditional male-breadwinner model to a more egalitarian context, however, albeit at a slow pace (Setyonaluri et al., 2020). "Neo-Ibu-ism" allows women to play an active role in the public sphere, while still stressing traditional gender roles. While there are indications of a transition towards new norms, traditional gender roles and religious influences continue to shape the conceptualization of gender.

The concept of gender is also conceptualized through a multifaceted lens that encompasses traditional cultural norms, religious influences, educational materials, and the intersection of gender with other societal factors. As such, it is important to adopt a broad and contextual view of gender in application to public and policy practice, especially considering Indonesia's rich social and cultural diversity. In Indonesia, the concept of "gender" has been extended beyond the conventional duality of men and women, stretching to include minority groups that are often marginalized or even invisible in policy discussions and assistance programs implemented by the government or other institutions. This is reflected in law, which describes gender analysis as fundamentally about understanding differentiated activities, concerns, access, and control between men and women but, in implementation, as additionally considerate of factors such as race, class, and ethnicity.²

In recognition that discrimination or lack of attention towards marginalized groups often occurs, social considerations beyond male-female are often included in gender mainstreaming, and there is a noted need for gender-responsive policies and practices that not only consider the role of women, but also recognize and integrate other marginalized groups and attend to the differentiated experiences, needs, and concerns of men and women. In the case of water resources management, for example, Islamic boarding schools and other communities living around the Brantas watershed have an important role in managing natural resources, but environmental activities and assistance programs tend to ignore them. Moreover, there is an observed and interesting paradox, wherein men are often excluded from some community environmental activities due to the assumption that these issues are more relevant or appropriate for women as stewards of cleanliness. Therefore, an inclusive and holistic approach to gender is needed, where policies and programs focus not only on women but also actively involve men and other groups involved or affected by environmental and watershed management. Gender mainstreaming in water quality management is not only about equality; it also about recognizing the diversity of roles, needs, and experiences, and empowering all parties to contribute to sustainable river management.

¹ PKK is a Family Empowerment and Welfare organization replicated widely throughout Indonesia.

² Minister of Home Regulation 15 of 2008 concerning General Guidelines for Implementing Gender Mainstreaming in the Regions

II. POLICY CONTEXT: GENDER MAINSTREAMING (PUG) AND WATER QUALITY GOVERNANCE IN INDONESIA

Water quality management is a complex arrangement of activities and functions performed across levels of government and society, with an aim to safeguard the long-term ecological quality and sustainability of water resources. As elaborated in Peraturan Pemerintah Republik Indonesia Nomor 22 Tahun 2021 tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup, “water quality” is defined as “a measure of water conditions at a certain time and place which is measured and/or tested based on certain parameters and certain methods in accordance with statutory provisions,” and water quality standards are the “the limits or levels of living things, substances, energy, or components that exist or must exist and/or pollutant elements that are allowed to exist in water” (Peraturan Pemerintah Republik Indonesia Nomor 22 Tahun 2021 Tentang Penyelenggaraan Perlindungan Dan Pengelolaan Lingkungan Hidup, 2021).³ Attaining standards defined by concentrations of water quality parameters such as biochemical oxygen demand (BOD), nitrates and phosphates, oils and detergents, fecal coliforms, depends on the management of pollution sources that contribute to loads, including domestic sewage and wastewater, solid waste, agricultural and livestock runoff, and industrial wastewater.

“Water Quality Protection and Management” (Perlindungan dan Pengelolaan Mutu Air, or PPMA) is defined as the “systematic and integrated effort to maintain water quality” based on principles of state responsibility, sustainability, harmony and balance, cohesiveness, equitable distribution of benefits, acknowledgement of ecoregions, preservation of biodiversity, and participation. The law further stipulates five important functions of PPMA:

- Planning, including the specification of water quality standards, and preparation of Water Quality Protection and Management Plans (RPPMA);
- Utilization, where decisions regarding water use must take into account water quality standards;
- Control, including prevention of water pollution, countermeasures, and restorative activities;
- Maintenance, including conservation and management of protected areas; and
- Community participation.

The principles of participation, cohesiveness, and equitable distribution of benefits demands a gender-sensitive approach to water resources management. Such an approach must make space for meaningful participation by women in planning for water quality management, equitable control over decisions regarding water management and pollution control, access to information and channels for filing complaints, and equal participation at the community level in planning, implementation, monitoring, and evaluation.

Fulfilling these obligations involves the participation of communities, national, provincial, and regional governments, and a large number of government agencies and commissions that are involved in water and environmental management. The number of agencies involved can be high, particularly in large basins that cross administrative boundaries. This is the case for the Brantas River in East Java, which is located in the province of East Java.

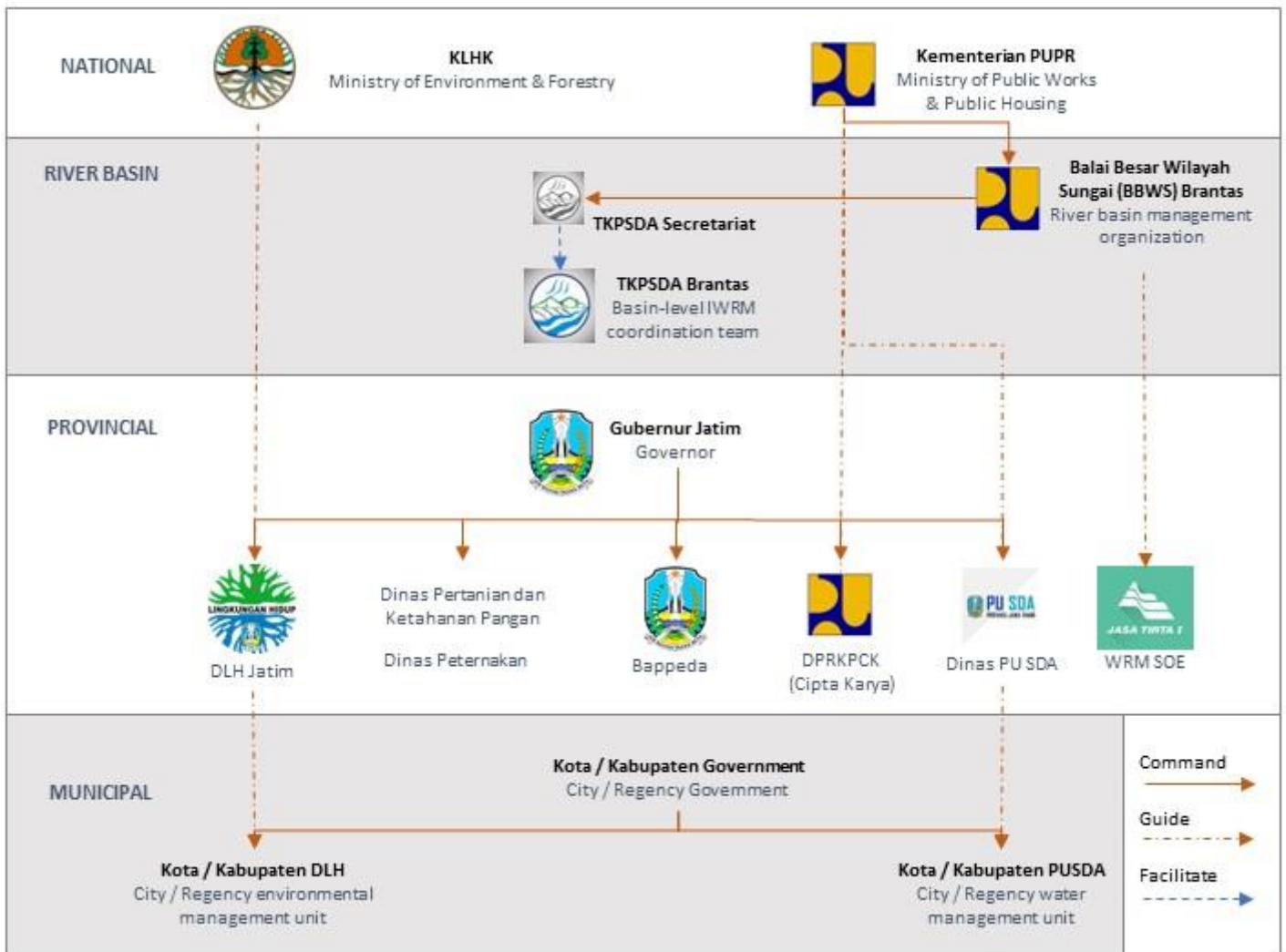
³ Government Regulation Number 22 of 2021 regarding Environmental Protection and Management: Definitions in PP 22 of 2021 (BAB 1, Pasal 1): Mutu Air adalah ukuran kondisi air pada waktu dan tempat tertentu yang diukur dan/atau diuji berdasarkan parameter tertentu dan metode tertentu sesuai dengan ketentuan peraturan perundang-undangan. Baku Mutu Air adalah ukuran batas atau kadar makhluk hidup, zat, energi, atau komponen yang ada atau harus ada dan/atau unsur pencemar yang ditenggang keberadaannya di dalam air. Mutu Air Sasaran adalah Mutu Air yang ditentukan pada waktu tertentu untuk mencapai Baku Mutu Air yang ditetapkan.

Figure 1. Map of DAS Brantas, KLHK 2023



The Brantas River crosses sixteen kota and kabupaten, falls entirely within the province and is designated as a National Strategic River. As such, responsibilities for water quality management lie at the National, Provincial, Kabupaten / Kota and local levels and cross ministerial lines. A full description of the governance framework is available in the 2024 [Brantas Harmoni](#) report (R.S. Houser, 2024). In brief, key agencies involved in water quality management are mapped in Figure 2.

Figure 2. Relationships amongst key agencies in Brantas River water quality management



Source: R.S. Houser, 2024

While gender policy has been in place for over forty years in Indonesia, the concept of gender mainstreaming, or **Pengarusutamaan Gender (PUG)**, was introduced at the national level, with commitments to integrate gender analysis into national planning. These efforts were ushered by the National Ministry of Development Planning (BAPPENAS) in 1999, when the agency introduced gender considerations into national planning. In the context of Indonesian law, Gender Mainstreaming (PUG) is defined in as a "strategy built to integrate gender as a dimension of planning, formulating, implementing, monitoring, and evaluating national development policies and programs" (Instruksi Presiden Nomor 9 Tahun 2000 Tentang Pengarusutamaan Gender Dalam Pembangunan Nasional Presiden Republik Indonesia, 2000) (INPRES 9/2000) and, thus, integrates the problems, experiences, and needs of women and men in all policies and programs across all fields and levels of government (Peraturan Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia Nomor P.31/MENLHK/SETJEN/SET.1/5/2017 Tentang Pedoman Pelaksanaan Pengarusutamaan Gender Bidang Lingkungan Hidup Dan Kehutanan, 2017).

The widespread integration of gender analysis into planning and policy was supported by the Presidential Instruction Number 9 of 2000 on Gender Mainstreaming (INPRES 9/2000), which established a commitment to mainstreaming gender in national and subnational development and instructed agencies at national, provincial, and kota / kabupaten levels to incorporate gender analysis and gendered perspectives in policy planning, implementation, monitoring and evaluation. Such efforts are supported by the Ministry of Women's Empowerment, who provides technical assistance to government institutions. Emergent policy guidelines drew largely on the **Gender Analysis Pathway (GAP)** tool to assess gender gaps related to access, participation, control, and benefits afforded to men and women and to apply these results in planning.

PUG was further institutionalized via a number of joint ministerial circulars (Numbers 270/M.PPN/11/2012; SE-33/MK.02/2012; 050/4379A/SJ; and SE-46/MPPPA/11/2012) and legislation that lays out implementation guidelines for gender mainstreaming and gender-responsive budgeting and planning. Minister of Home Affairs Regulation Number 15 of 2008 concerning General Guidelines for the Implementation of Gender Mainstreaming in the Regions and its 2011 amendments (Regulation of the Minister of Home Affairs Number 67 of 2011) laid out terms for **Gender-Responsive Planning and Budgeting (PPRD)** and **Gender-Responsive Budgets (ARG, Anggaran Responsif Gender)**. This legislation mandates gender-responsive formulation of policy plans, including regional long-term development plans (RPJPD), regional medium-term development plans (RPJMD), annual regional work plans (RKPD), and regional working unit strategic and work plans.

At the ministerial level, both the **Ministry of the Environment and Forestry (KLHK)** and the **Ministry of Public Works and Public Housing (PUPR)** have issued guidelines for implementing gender mainstreaming (PUG). Permen LHK 31 / 2017 outlines Guidelines for Implementing Gender Mainstreaming in the Field of Environment and Forestry, following on from a 2016 MoU between KLHK and Ministry of Women's Empowerment and Children. The guidelines cover the application of PUG in planning, project preparation, implementation, and monitoring and evaluation in the environmental sector. The guidelines also acknowledge gender-differentiated dependence on natural resource, including rivers; gendered differences in activities related to and knowledge about natural resources; and gender-differentiated impacts of pollution, particularly in informal settlements subject to high exposure to pollution. Specific to waste management, the document highlights that 85% of the participation in Waste Bank (Bank Sampah) programs is female and that women bear the overwhelming burden of waste management in communities due to low understanding and valuation of waste management amongst men, limited opportunities

for income generation, dependence on women's groups such as PKK for implementation and expansion, and prevailing social practices that put women in charge of managing waste at the household level.

Similarly, PUPR issued the Decree of the Minister of Public Works and Public Housing Number 1515/KPTS/M/2020 concerning the Formation of a Gender Mainstreaming Team for the Ministry of Public Works and Human Settlements and a plan for gender mainstreaming outlined in the **Implementation Road Map for Gender Mainstreaming (PUG)** in the **Ministry of Public Works and Public Housing 2020-2024**, including guidance for the Directorate General of Water Resources (Ditjen SDA) (see Road Map Appendix 2.3) (Keputusan Menteri Pekerjaan Umum Dan Perumahan Rakyat Nomor 1764 Kpts/m/2020 Tentang Road Map Pelaksanaan Pengarusutamaan Gender (PUG) Kementerian Pekerjaan Umum Dan Perumahan Rakyat Tahun 2020-2024, 2020). In this Road Map, specific actions for gender mainstreaming in Ditjen SDA include: incorporating PUG in the background study and strategic plans (Renstra) for Ditjen SDA 2025-2020; strengthening the capacity of Focal Points in each Directorate and BBWS; updating disaggregated PUG data for water resources management; preparing GAP and GBS in each Directorate and BBWS; and monitoring and evaluating PUG and PPRG in PUPR directorates. Implementation activities identified as PUG activities (only listed in general terms), include development of irrigation, raw water, and groundwater infrastructure.

At the provincial level, Minister of Home Regulation 15 of 2008 concerning **General Guidelines for Implementing Gender Mainstreaming in the Regions** laid out terms for provincial and kota / kabupaten implementation of PUG.⁴ The government of East Java (Jawa Timur) issued Provincial Regulation Number 9 of 2019 concerning Gender Mainstreaming along with an attendant Governor's regulation in 2020 to institutionalize gender mainstreaming.⁵ Governors are responsible for gender mainstreaming in regional work units (Satuan Kerja Perangkat Daerah, or SKPDs), assisted by the Deputy Governor. This legislation also requires the facilitation of a **PUG Working Group (Pokja PUG)** as a forum for consultation amongst gender mainstreaming implementers from various regional agencies and stipulates facilitation of **PUB Mobilizing Teams (Tim Penggerak PUG)**. The regional Pokja PUG is chaired by the head of Bappeda, and the regional head of the women's empowerment SKPD serves as the head of the provincial Pokja PUG Secretariat. Moreover, each regional agency must designate a **PUG Focal Point** to implement PUG.

PUG guidelines, particularly for planning and gender analysis, are described in more detail in the following sections. It should be noted, however, that despite long-standing regulation, PUG is at a fairly early stage from an implementation standpoint. **Challenges that have slowed the uptake of PUG include ideological conflicts, limited resources for capacity building, and low political support for gender mainstreaming initiatives.** There are also problems related to identifying competent and qualified individuals to ensure equitable representation in decision-making forums (Hermina, 2015).

⁴ <https://peraturan.bpk.go.id/Details/126342/permendagri-no-15-tahun-2008>

⁵ https://dokumjdih.jatimprov.go.id/upload/41480/Perda_No_9_Tahun_2019_tentang_Pengarusutamaan_Gend.pdf, <https://peraturan.bpk.go.id/Details/164487/pegrub-prov-jawa-timur-no-39-tahun-2020>

OVERVIEW OF PUG POLICY

Key requirements of gender mainstreaming for water quality management in the Brantas basin are laid out in the following regulations:

- Minister of Home Regulation 15 of 2008 concerning General Guidelines for Implementing Gender Mainstreaming in the Regions (Peraturan Menteri Dalam Negeri Nomor 15 Tahun 2008 Tentang Pedoman Umum Pelaksanaan Pengarusutamaan Gender Di Daerah, 2008)
- Joint Circular Number 270/M.PPN/11/2012: Guidelines for Implementation of Gender Responsive Planning and Budgeting for Local Government SE-33/MK.02/2012; 050/4379A/SJ; and SE-46/MPPPA/11/2012 (Petunjuk Pelaksanaan Perencanaan Dan Penganggaran Yang Responsif Gender Untuk Pemerintah Daerah, Lampiran 2, n.d.)
- Minister of Women's Empowerment and Child Protection Regulation (Permen PPPA) Number 4 of 2014 concerning Guidelines for Supervision of the Implementation of Gender Responsive Planning and Budgeting for Local Governments (Peraturan Menteri Negara Pemberdayaan Perempuan Dan Perlindungan Anak Republik Indonesia Nomor 4 Tahun 2014 Tentang Pedoman Pengawasan Pelaksanaan Perencanaan Dan Penganggaran Yang Responsif Gender Untuk Pemerintah Daerah, 2014)
- Minister of Environment and Forestry (Permen LHK) Regulation 31 of 2017 concerning Guidelines for Implementing Gender Mainstreaming in the Field of Environment and Forestry (Peraturan Menteri Lingkungan Hidup Dan Kehutanan Republik Indonesia Nomor P.31/MENLHK/SETJEN/SET.1/5/2017 Tentang Pedoman Pelaksanaan Pengarusutamaan Gender Bidang Lingkungan Hidup Dan Kehutanan, 2017)
- Provincial Regulation (Perda) Number 9 of 2019 concerning Gender Mainstreaming (Peraturan Pelaksanaan Peraturan Daerah Provinsi Jawa Timur Nomor 9 Tahun 2019 Tentang Pengarusutamaan Gender, 2019)
- Decree of the Minister of Public Works and Public Housing Number 1764 KPTS/M/2020 concerning Road Map for Implementing Gender Mainstreaming (PUG) in the Ministry of Public Works and Public Housing 2020-2024 (Keputusan Menteri Pekerjaan Umum Dan Perumahan Rakyat Nomor 1764 Kpts/m/2020 Tentang Road Map Pelaksanaan Pengarusutamaan Gender (PUG) Kementerian Pekerjaan Umum Dan Perumahan Rakyat Tahun 2020-2024, 2020)
- Regulation of the Governor of East Java (Pergub) Number 39 of 2020 concerning Perda 9 of 2019 (Peraturan Gubernur (Pergub) Provinsi Jawa Timur Nomor 39 Tahun 2020 Tentang Peraturan Pelaksanaan Peraturan Daerah Provinsi Jawa Timur Nomor 9 Tahun 2019 Tentang Pengarusutamaan Gender, n.d.)⁶

The purpose(s) of established PUG guidelines are summarized in Table 1. These goals are to be met through specific actions to promote gender equity through planning, implementation, monitoring, and evaluation.

⁶ <https://peraturan.bpk.go.id/Details/164487/pegub-prov-jawa-timur-no-39-tahun-2020>

Table 1. Goals of PUG

Regulation / Guideline	Purposes / Goals
Minister of Home Regulation 15 of 2008 concerning General Guidelines for Implementing Gender Mainstreaming in the Regions	<ul style="list-style-type: none"> • Provide a reference for Regional Government officials in developing gender integration strategies • Realize planning with a gender perspective by integrating the experiences, aspirations, needs, potential and solving problems of men and women • Realize gender equality and justice in family life, nation, and state • Realize gender-responsive regional budget management • Increase equality and justice in the positions, roles, and responsibilities of men and women • Increase the role and independence of institutions that handle empowerment
Minister of Environment and Forestry Regulation 31 of 2017 concerning Guidelines for Implementing Gender Mainstreaming in the Field of Environment and Forestry	<ul style="list-style-type: none"> • Establish mechanisms for the formulation of gender-responsive policies and programs • Pay special attention to groups marginalized due to gender bias • Increase understanding amongst parties (governmental and non-governmental) regarding gender
Provincial Regulation Number 9 of 2019 concerning Gender Mainstreaming	<ul style="list-style-type: none"> • Realize gender equality and justice by paying attention to vulnerable groups • Realize gender-responsive fulfillment of basic rights and ease of access, participation, control, and benefits • Realize protection against inequality and gender injustice • Strengthen the role of the provincial government and community in gender-responsive participatory development • Encourage independence of society, especially women, in politics and decision-making

With respect to planning, **agencies and regional governments are expected to develop clearly stated policy goals to close gender gaps and to formulate policies with a gender perspective** (Permen LHK 31/2017; Permen 15/2008). With respect to monitoring and evaluation (M&E), **agencies are to measure gender progress** in terms of increasing access, participation, control, and ensuring equitable distribution of benefits (Permen LHK 31/2017).

PUG is to be implemented through seven requirements, namely:

1. Political commitment,
2. Policy,
3. Institutionalization (institutional support),
4. Commitment of resources,
5. Provision of disaggregated data,
6. Application of gender analysis tools, and
7. Public participation.

These prerequisites are intended to ensure the "widest opportunity" for improved and more equitable access, participation, control, and distribution of benefits. These requirements also offer a framework for assessing current levels of gender mainstreaming in Brantas water quality management and attendant recommendations to strengthen gender-responsiveness. **The existing requirements of PUG also serve as the basis for specific recommendations for strengthening gender responsiveness in relation to water management.**

INSTITUTIONAL SUPPORT FOR PUG: POKJA PUG, MOBILIZATION TEAM, AND FOCAL POINTS

In line with requirements of Permen 15/2008, the Government of East Java established a PUG Working Group (Pokja PUG) in 2019, as a forum for consultation for implementers of PUG and Gender Focal Points for agencies in the region (Perda 9/2019). The chairman of the provincial Pokja PUG is Bappeda, and the members of Pokja PUG are SKPD heads. This working group is tasked with:

- Promoting and facilitating PUG in SKPDs,
- Carrying out PUG outreach and advocacy to regency and city governments,
- Preparing annual work programs for the working group,
- Formulating policy recommendations to regents and mayors,
- Facilitating data collection for the provincial Gender Profile,
- Monitoring PUG in each agency,
- Preparing PUG Regional Action Plans (RANDA) for the province, and
- Encouraging implementation of gender focal points in each SKPD (Permen 15/2008).

Each regency and city is also to form a Pokja PUG comprised of city/regency-level SKPD heads. In the Governor's accompanying 2020 regulation (Pergub 39/2020), an additional support mechanism was introduced – the **PUG Mobilization Team (Tim Penggerak PUG)** to support the Pokja PUG, coordinate and facilitate capacity-building for PUG at the provincial and regional levels, support gender-responsive planning and budgeting, and supervise and evaluation implementation of PUG.

Each agency is required to nominate staff to serve as a PUG Focal Point. PUG Focal Points are SKPD staff appointed to carry out gender mainstreaming in their respective work units at the provincial or kota / kabupaten levels. PUG Focal Points are tasked with promoting PUG in work units, facilitating preparation of SKPD Work Plans with a gender perspective, facilitating PUG training and outreach to SKPD staff, reporting on PUG implementation, and encouraging implementation of gender analysis in planning (Permen 15/2008).

PPRG: GENDER-RESPONSIVE PLANNING AND BUDGETING

Gender Responsive Planning and Budgeting (Perencanaan Penganggaran Responsif Gender, PPRG) is an approach to planning that aims to achieve gender equality and justice by integrating gender-differentiated experiences, aspirations, and needs and considering the differentiated problems of women and men. PPRG is carried out through gender analysis and preparation of **Gender Responsive Budgets (ARG) documented by Gender Budget Statements (GBS)**. GBS documents specify how government activities are gender-responsive and how funds are accordingly allocated to address gender inequality.

Permen PPPA 4/2014 makes the important point that **ARG does not imply separate programs and budgets for men and women, nor are ARGs solely for funding women's programs**. Rather, an **ARG is a programmatic budget that specifies how budgeted activities are designed to close gender gaps** in a field or region.

The **Gender Analysis Pathways (GAP) approach is a framework** used to integrate gender considerations into planning, implementation, and monitoring and evaluation. It provides a structured method for identifying, analyzing, and addressing gender inequalities and disparities within development initiatives, policies, programs,

or projects. The GAP approach aims to ensure that planning processes are gender-responsive, meaning they recognize and respond to the diverse needs, priorities, and interests of women, men, girls, and boys.

GAP involves conducting a gender analysis to understand the different roles, responsibilities, access to resources, and power dynamics between women and men in the policy context at hand. This includes the division of labor / roles of men and women, control over and access to development resources, participation in the development process, distribution of benefits, and patterns of inequality that may take into account gender as well as social class, race and ethnicity (Permen 15/2008). Gender analysis is also used to **identify gender-specific constraints, opportunities, and challenges** that may impact effectiveness, efficiency, and sustainability of planned interventions. GAP promotes the elaboration of goals to close gender gaps, gender-sensitive stakeholder engagement, gender-responsive monitoring and evaluation, and capacity building and institutional support. The 2020 Governor's regulation on Gender Mainstreaming in East Java stipulates that GAP is the approach to be utilized by East Java agencies, carried out in nine steps described in Table 2.

Table 2. Steps in Gender Analysis Pathways approach

Step 1. Name of Policy / Program / Activity	Carry out analysis of the goals and objectives of existing policies, programs, and activities. Policies, programs, and activities selected are those that either: <ul style="list-style-type: none"> a. Support national development priorities (MSS and MDGs), b. Are regional development priorities, c. Have large budget allocations, or d. Are generally important in relation to gender issues.
Step 2. Insightful data	Present sex- and age-disaggregated data from research, study results, or evaluations to show whether gender gaps exist.
Step 3. Gap factors	Identify factors causing inequalities based on access, participation, control and benefits: <ul style="list-style-type: none"> a. Access: Identify whether development policies and programs have provided equal opportunities for men and women; b. Participation: Identify whether development policies and programs equally involve men and women in voicing needs and constraints and in participating in decision-making; c. Control: Identify whether development policies and programs provide equal opportunity for women and men to control development resources; d. Benefits: Identify whether development policies and programs provide equitable benefits to men and women.
Step 4. Internal causes	Identify causes of gaps within the institution (culture and organizational capacity) that lead to gender issues.
Step 5. External causes	Identify causes of inequality external to the institution in the process of implementing programs and activities/sub-activities.
Step 6. Reformulated objectives	Reformulate the objectives of development policies, programs and activities/sub-activities to be gender-responsive, addressing gaps identified in steps 3, 4, and 5.
Step 7. Action plan	Develop action plans (including activities) and targets with reference to gender issues that have been identified to address gender gaps.
Step 8. Baseline data	Establish a baseline (indicators) for measuring progress.
Step 9. Performance indicators	Establish performance indicators that address gender gaps identified in steps 3, 4, and 5.

Source: Author's compilation based on Pergub 39/2020 and Permen PPPA 04/2014

While gender analysis often focuses on how men and women differently benefit from services, the gendered aspects of water quality management relate largely to levels of participation, access, and control women and men have in planning, implementation, and public communication which, in turn, decide what services are to be delivered. This applies, for example, to gender-differentiated preferences for village development in relation to pollution control or the capacity of women to access public information and channels for reporting. As such, there is an emphasis on participation, access, and control over decisions related to water quality management at the local level.

Gender-responsive programs and activities are designated by an attached **Gender Budget Statement (GBS)** that specifies how planned programs address gender and how resources are allocated to close gender gaps. A GBS should:

- Explicitly describe programs and activities,
- Include a situation analysis (baseline gender-disaggregated data, identified gender gaps and causal factors), and
- Specify a linked action plan and budget.

As such, a **GBS is an accountability document** In PPRG oversight, evaluators can refer to the results of gender analysis to assess the appropriateness of plans and ARGs.

Box 1. Components of a Gender Budget Statement

Policy/program/activity: Information about the policies, programs, or activities that have been analyzed and for which budget is allocated to address gender issues

Situation analysis: Description of the identified problem or gap and concise results of GAP analysis

Action plan: Including activities, inputs, outputs, and expected results

Performance indicators to measure progress

Budget required to achieve stated objectives

Signature of Head of the SKPD

GBS can (should) also draw on GAP analysis. The links between GAP and GBS are described in Table 3.

Table 3. Links between GAP and GBS

Stage	GAP	GBS
1. Carry out analysis of the goals and objectives of existing policies, programs, and activities	Policy/program/activity	Program/activity
2. Present sex and age disaggregated data	Insightful data	Situation analysis
3. Identify factors causing inequalities based on access, participation, control and benefits	Gap factors	
4. Identify causes of gaps within the institution (culture and organizational capacity) that lead to gender issues	Causes of internal gaps	
5. Identify causes of inequality external to the institution in the process of implementing programs and activities/sub-activities	Causes of external gaps	
6. Reformulate the objectives of development policies, programs and activities/sub-activities to be gender-responsive	Reformulation of objectives	Program outcomes, benchmarks
7. Develop action plans and targets with reference to gender issues that have been identified and activities to address gender gaps	Action plan	Action plan (Activities that contribute to gender equality)

8. Establish a baseline for measuring progress	Baseline data	Program outcomes, performance indicators and targets
9. Establish performance indicators (outputs and outcomes) that address gender gaps.	Performance indicators	Program outcomes, indicators, and performance targets

Permen PPA 4/2014 includes helpful examples of GAP analysis and GBS (<https://jdih.kemenpppa.go.id/dokumen-hukum/produk-hukum/peraturan-menteri-pppa-nomor-4-tahun-2014>), and Implementation Guidelines for Local Governments for PUG and PPRG also provide example analyses and planning outputs.

GENDER-DISAGGREGATED DATA

Provincial Regulation Number 9 of 2019 concerning Gender Mainstreaming also requires that regional units provide and maintain relevant gender-disaggregated data (Article 10) to support gender analysis and formulate Rencana Aksi Daerah Pengarusutamaan Gender (RAD PUG), or Regional Action Plans for Gender Mainstreaming. Gender-disaggregated data must be managed by the relevant dinas (government department).

While Perda 9/2019 and Pergub 19/2020 both include sanction mechanisms for agencies and state-owned enterprises (BUMN) that fail to provide gender-disaggregated data and demonstrate gender-responsive programs and activities, sanctions are not applied in practice. This is largely because it is recognized that capacities are still insufficient in many agencies to effectively perform gender analysis or identify relevant gender-disaggregated data to support gender-responsive planning and evaluation of progress on gender goals.

III. GENDERED ASPECTS OF WATER QUALITY MANAGEMENT

With an eye to strengthen the gender-responsiveness of water quality management, this section offers information on gender-differentiated activities and concerns related to water quality as well as gender-differentiated levels of access and control over water resources and decision-making. Gender inequalities in the fields of water and the environment are often derived from divisions of labor amongst men and women as users, exploiters, and managers of the environment. In rural areas, for example, women often have a high dependence on natural resources and high interactions with the environment associated with domestic activities. These experiences both increase levels of exposure to water pollution but also mean that women often have detailed knowledge about the local environment. Similarly, in urban contexts, women are overwhelmingly burdened with care of sick family associated with poor sanitation conditions or unclean drinking water. As such, the following two sections review some of the gendered patterns of activities related to water quality. Thereafter, the focus is on identifying gender-differentiated patterns in access and control over water resources.

GENDERED IMPACTS OF RIVER POLLUTION

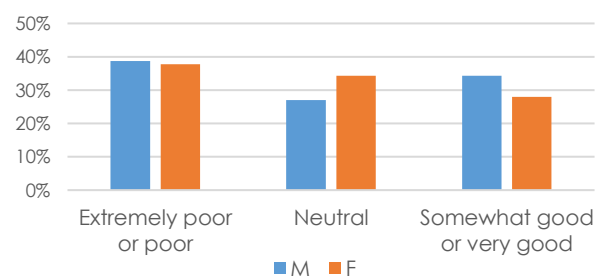
Vulnerable populations such as women and children are reported to face the highest risk of health impacts related to environmental conditions, including unsafe water and urban air pollution (Austin & Banashek, 2018). Additionally, it has been noted that public concerns over environmental issues, including water pollution, have received considerable attention in recent decades, with gender inequality being one of the social considerations highlighted (Yaghin & Sarlak, 2019). Furthermore, studies have shown that there are differences in opinions about surface water quality issues based on socio-demographic characteristics, including gender, with lower socio-economic status being associated with a higher likelihood of perceiving water pollution as a community problem (Anderson et al., 2007).

In the Brantas River basin, only a small portion of the population directly draws or utilizes water directly from the Brantas River, and most respondents in basin surveys demonstrate awareness and knowledge of the threats of water pollution (R Schuyler Houser, 2024; Susanti et al., 2023). Nevertheless, those that do directly utilize river water include the poorest of community members who, despite knowledge of the potential hazards of river water pollution, cannot otherwise afford developing connections to alternative water sources, such as underground wells or networked water supply (Susanti et al., 2023). Exposure to pollution is contingent on patterns of household activity in relation to water. Women, for example, tend to draw water for washing clothes and watering gardens. But men also come into contact with river water in irrigation activities and watering livestock.

A 2023 survey performed by TU Delft and Universitas Airlangga surveyed 282 riverside inhabitants along the Brantas River, from the upstream to downstream. With respect to vulnerabilities to water pollution, the survey offered a number of important findings. First, with respect to perceptions of water pollution, male respondents (137) reported a generally higher perception of the quality of river water as opposed to female respondents (143) (Figure 3).

Second, the survey showed that **most households do not draw water directly from the Brantas River for household use (91%) or livelihoods (80%)**. That said, amongst responding households that do draw water, water is more often

Figure 3. Reported perception of water quality



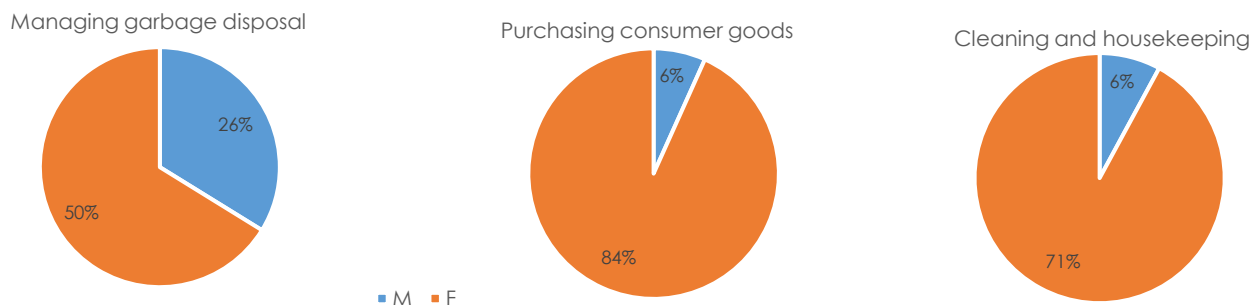
drawn by men for both household use and livelihoods (for irrigation or to water livestock, for example), suggesting that **both women and men in poor riverside communities are vulnerable to water pollution, albeit via different activities.**

GENDERED ROLES IN WATER AND POLLUTION SOURCE MANAGEMENT

Gendered activities and roles related to water resources and pollution source management are important to application of PUG in water quality management, as policies and plans must take into account *who* performs different activities related to water and waste management. Moreover, gender-differentiated activities and concerns affect men's and women's preferences, knowledge sets, and experiences. Gendered roles that affect water quality management include household responsibilities, ideas about the "business" of men and women in relation to community activities, and the characteristics of social networks that relate to water resources.

First, there is a noted **division of labor at the household level with respect to activities that produce emissions to water resources.** With respect to household tasks, women are overwhelmingly responsible for activities that affect the amounts and qualities of wastewater and solid waste removed from the household. Such activities include garbage management, cleaning, and purchasing of consumer goods such as detergents (Figure 4).

Figure 4. Primary responsibility for household tasks



Women also overwhelmingly facilitate community-based waste management programs. One such model, Bank Sampah (Waste Banks), is a widely-promoted and implemented approach for community waste management. According to Permen LHK 31/2017, Waste Bank activities are mostly carried out by women with low involvement from men, with 85% of implementers female. While they provide a high degree of support for solid waste management, these activities offer a low source of income and can exacerbate the burden on women's time. The disproportionately high participation of women is also underpinned by cultural notions that household and village cleanliness is "women's work" (see below for more discussion).

Interestingly, women not only demonstrate increased capacities to manage and mitigate household sources of water pollution, but they also have



Women's community discussion on village waste management; Image source: Fully Syafi

important **local-level knowledge and beliefs regarding water resources**. Female survey respondents reported comparable self-assessments of their knowledge about the river and local environment to those of male respondents (Figure 5 and Figure 6). This demonstration of confidence in local-level knowledge is an important empowerment factor, but there is also a set of cultural practices and beliefs that compromise efforts to reduce household waste emissions to waterways. One example that has received widespread attention is the myth that disposal of used diapers via burning (a common form of waste management) causes childhood skin ailments, and that the only child-safe method is direct disposal to waterways. While these knowledges are potentially at odds with each other in terms of water management, the important note is that **women's beliefs and knowledge sets have important implications for household waste management**, reinforcing a need to engage women in both knowledge creation and education regarding water resources.

Figure 5. Reported agreement with the statement, "I feel that I have enough knowledge about the river and local environment to participate in discussions about our local community environment"

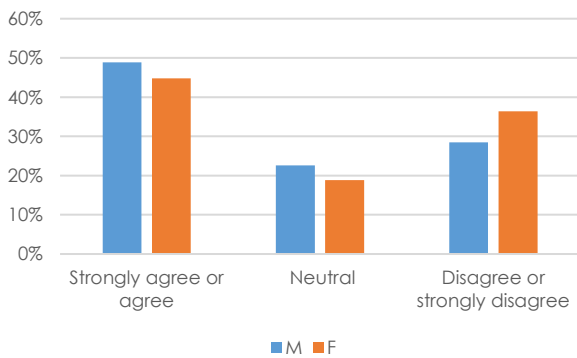
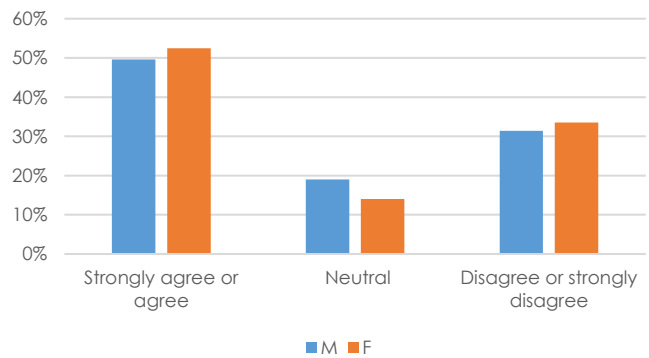


Figure 6. Reported agreement with the statement, "I am quite aware of the rules and regulations regarding domestic solid waste and wastewater disposal in my area."



Despite women's primary role in managing household emissions, men retain primary responsibility for making decisions regarding household investment for home improvement (Figure 7). Moreover, reported **levels of female participation in village-level planning and development meetings are significantly lower than those of men**. Of the 47% of households that reported participating in village meetings, only 23% of the households reported female participation, while 77% reported representation and participation by male household members (Figure 8).

Figure 7. Reported household responsibility for making decisions about household investments for home improvement?

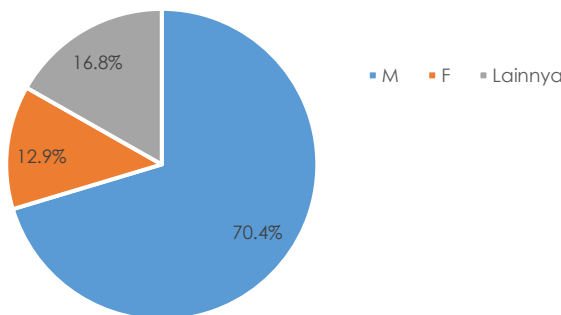
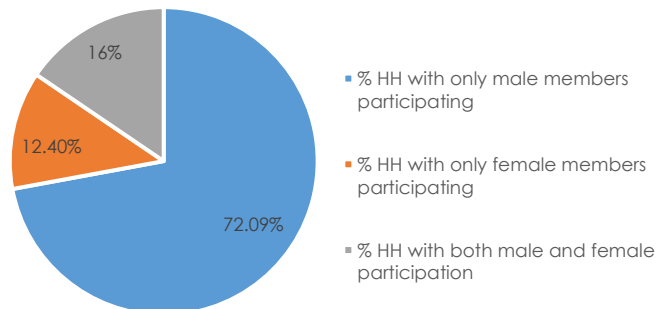


Figure 8. Response to: "Of households that participate in village government, who attends?"

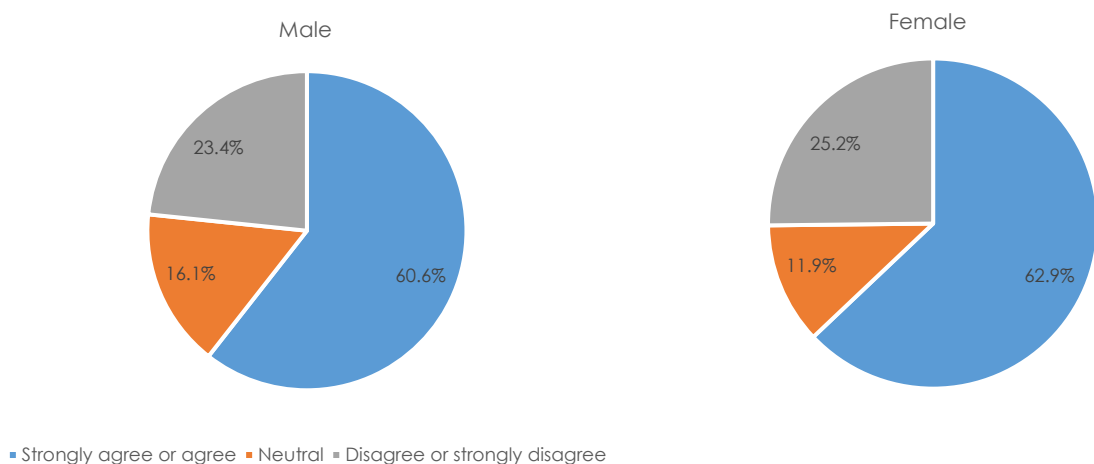


Many of these patterns are underpinned by sociocultural and historical factors affecting gender roles in water management. Socialized ideas about what activities are "women's" versus "men's work" extend beyond waste management and cleanliness. Domestic issues, such as childcare, safety, and food are generally considered

women’s business. In this way, women consider waterways “women’s business” largely in relation to management of household waste, maintenance of gardens, and safety of embankments. Similarly, women tend to observe water quality problems in relation to safety of water for swimming, quality and taste of fish in food preparation, or by way of aesthetic aspects (e.g., visible garbage, smell) (Noeswantari et al., 2019).

In contrast, village development and planning is seen as “men’s business” (sic). Many of the opportunities to participate in village development involve intensive labor, and formal planning meetings such as village-level Musyawarah Perencanaan Pembangunan (Musrenbang) are often treated as the business of men, despite mandated inclusion of women. While policy stipulates that women are to be involved in planning, it is commonly thought that their participation is relevant only to issues related to child and elderly care, health, and waste management (Interviews, DP3AK, January and March 2023). The 2023 Brantas River community survey reinforced qualitative testaments to these beliefs. When asked about the degree of agreement with the statement “Because women are busy with household duties, men should normally manage community decisions,” women reported comparable and even slightly higher agreement (62.9%) as compared with men (60.6%) (Figure 9).

Figure 9. Reported agreement with the statement “Because women are busy with household duties, men should normally manage community decisions.”



ACCESS AND CONTROL IN WATER QUALITY MANAGEMENT

Low levels of female involvement in formalized planning processes, particularly at the local level, is an important aspect of gender-differentiated levels of access and control over water and environmental management. While the Musrenbang process is required to involve women, there are varying degrees of representation across regions and localities in practice. Project interviews with women’s group Sekoper Gresik and women’s empowerment agency DP3AK (March 2023) indicate that some localities have increased women’s engagement in planning through targeted efforts, including a “Musrenbang Perempuan” model in Jombang and the Sekolah Perempuan program in Gresik. Both of these programs structure and support women’s involvement in formalized planning and advocacy processes through advocacy training and education. But in many areas, women are only nominated to attend village meetings via women-only Penggerak Pemberdayaan Kesejahteraan Keluarga (PKK) (Family Welfare Empowerment) groups. While this facilitates female representation, PKK representatives are often

amongst more the more socially empowered and often do not include poorer, more vulnerable women likelier to be exposed to water pollution.

Sekolah Perempuan and the Musrenbang Perempuan programs are models that can be considered to scale up targeted capacity-building for community-based environmental advocacy and planning; community-based environmental research and monitoring; and improved household and community waste and wastewater management practice. DLH Jatim and BBWS Brantas should work together with DP3AK to explore how standing programs women's empowerment can be leveraged to strengthen women's participation in environmental decision-making. **Government agencies can also collaboratively support such efforts by developing training materials and programs, socializing best practices for household management of pollution sources, and publishing rights to information and available channels for reporting, particularly targeting women's groups.**

Moreover, government agencies involved in environmental and water resources management should ensure active attendance and participation of women in consultations and meetings through targeted invitations and meeting opportunities that suit women's needs, with **support of appointed Gender Focal Points**. This will require paying particular attention to the information and communication channels and informal networks most utilized by women at the village level. **Public consultation meetings should consider times and locations that are socially and culturally appropriate for women and are responsive to household and childcare obligations.**

PRACTICAL AND STRATEGIC NEEDS FOR WATER RESOURCE AND WASTE MANAGEMENT

In summary, barriers to gender-responsive water quality management include:

- Low implementation of PUG policies and processes, including application of gender analysis and collection of gender-disaggregated data relevant to water quality management;
- Insufficient training and support for Gender Focal Points;
- Lack of knowledge about how to apply PUG approaches specifically to water and the environment and to which programs GBS should be applied;
- Limited female representation in formal development and planning meetings and low utilization of informal channels; and
- Limited capacity and low confidence of potential women participants to actively contribute to environmental discussions and decision forums.

PUG IMPLEMENTATION CHALLENGES

While available policy and processes for gender mainstreaming are well formulated, PUG is limited in its implementation, particularly in the field of water environmental management – most notably at the provincial and local levels of governance. While all agencies are required to nominate Gender Focal Points (Focal Point PUG), for example, training for PUGs is infrequent, and nominated PUGs are often unaware of their roles and responsibilities. At present, the role of the PUG in BBWS Brantas, DLH Jatim, and DLH kota / kabupaten agencies is poorly understood and socialized. Responsibilities for serving the role of PUG are often dispersed or ad hoc, with staff nominated meeting-by-meeting instead of over a longer term of service. This limits staff capacity to support sustained attention to gender goals or facilitate PUG processes as a mainstreamed components of planning and

implementation. In project meetings that involved PUGs, it was found that **SKPDs either did not appoint Focal Points** or that **appointed Focal Points did not understand their roles and responsibilities** with respect to gender mainstreaming. In many cases, Focal Points did not understand the concept or relevance of gender to their work (workshop proceedings, June 2023).

Staff of the East Java provincial women's empowerment agency, Dinas Pemberdayaan Perempuan, Perlindungan Anak dan Kependudukan (DP3AK Jatim) also reported **limited political support and low prioritization of gender mainstreaming initiatives** outside of their own agency, with the exception of some health- and education-related agencies (interviews, DP3AK staff, January 2023, March 2023). While policies and initiatives were considered sufficient, staff reported difficulties in promoting gender mainstreaming in other agencies' due to low prioritization amongst agency leadership, **limited available budget for capacity building**, and, in some cases, ideological opposition to facets of women's empowerment.

There is also a noted **challenge of translating generalized PUG approaches including Gender Analysis Pathways, collection and use of gender-disaggregated data, and gender-responsive planning to the particular activities and mandates of specialized agencies in the water and environmental sectors**. While the general approaches are clear, staff are often unsure of how to apply them to their particular fields. There is also a recognized tendency to **label particular activities as "gender" activities to meet the regulatory requirements of PUG**, despite the intention of PUG guidance to mainstream gender as a core consideration in planning across agency initiatives. Staff of DP3AK reaffirmed that **capacity building and implementation support for existing PUG policies and processes is needed rather than the development of additional guidelines for gender mainstreaming** (interviews, DP3AK staff, January 2023, March 2023).



Upstream area of the Brantas River.

IV. MAINSTREAMING GENDER IN WATER QUALITY GOVERNANCE

Gender mainstreaming in water quality management fosters participation of both women and men and considers the differentiated concerns and needs of women and men in relation to water resources. The following section proposes key actions for agencies in the water environmental sector to take concrete steps to strengthen gender-mainstreaming with consideration of the requirements of PUG. Gender mainstreaming policies and frameworks are already in place; thus, the “Policy” requirement (#2) is not included in the set of recommendations. The “Commitment of resources” requirement (#4) is also not included.

Requirements of PUG	
1.	Political commitment
2.	Policy
3.	Institutional support
4.	Commitment of resources
5.	Disaggregated data
6.	Gender analysis
7.	Public participation

The identified challenges, opportunities, and recommended actions are derived from (a) policy review and research by R. Schuyler Houser at TU Delft, (b) proceedings of the 2023 *Research Workshop on Gender-Responsive Water Quality Management in the Brantas*, (c) research inputs from Universitas Airlangga and Universitas Merdeka Malang, (d) inputs from community partners in field visits and interviews, and (c) follow-up interviews, reviews, and deliberations with workshop participants. In summary, general recommendations cover:

- **Enhancing political commitment and the capacity of institutional supports, including PUG Focal Points, for gender mainstreaming (1,3):** Establish and empower clearly designated Gender Focal Points within relevant government agencies to spearhead efforts in mainstreaming gender considerations across all stages of water quality management projects. Provide nominated staff with the necessary resources, authority, training, and support to effectively implement gender-responsive strategies.
- **Collecting and utilizing gender-disaggregated data (5):** Implement comprehensive data collection mechanisms that capture gender-specific experiences, needs, and vulnerabilities related to water quality. Utilize this data to inform policymaking and resource allocation decisions.
- **Applying gender analysis to key programs (6):** Integrate gender analysis into the selection and design of water quality management programs. This includes assessing the differential impacts of policies and interventions on men and women and ensuring equitable access to resources and benefits.
- **Invest in community capacity-building and education, particularly amongst women's groups, for environmental knowledge, advocacy, and community action (7):** Provide training and capacity-building for civil society organizations, women's groups, and community representatives, to strengthen understanding of gender mainstreaming principles and practices, awareness of water environmental issues, and available channels to participate in water governance.
- **Promote women's participation in planning, oversight, evaluation, and adjustment (7):** Foster an inclusive decision-making process by actively involving women in the planning, implementation, and monitoring of water quality management initiatives at the community level. Ensure that women have equal representation and opportunities to contribute their perspectives and expertise in planning and in reporting on progress through both formal and informal channels.

By implementing these general measures with sufficient financial, technical, political, and human resources support, government can promote a more equitable, inclusive, and effective approach to water quality management. The recommendations below are framed in terms of **key challenges, available opportunities, and recommended actions** for each for the five selected requirements of PUG.

Challenge 1: Concepts of gender and gender mainstreaming for policy and development are poorly understood or of low priority.

The notion of gender is perceived to be limited to “women's issues” such as childcare, domestic violence, and reproductive health. While gender considerations should be applied to better understand the needs, concerns, activities, and access and control experienced by both males and females across programs, including water and environmental management, the conceptual applicability of gender outside of health and women's empowerment agencies is poorly understood.

Due to budgetary and staffing constraints and low political support, gender-related issues are often relegated to a secondary status in agency planning.

Opportunities:

A number of key political leaders outside of women's agencies have demonstrated commitment to promoting gender as an important concept in policy and development. While this group is relatively small, their support may be an important tool to champion the issue of gender.

Gender research programs are present in universities in the Brantas River basin that also have departments focused on water and the environment. These include research centers at Universitas Airlangga and Universitas Brawijaya.

Recommended actions:

- ✓ **Identify key champions** of gender amongst political leadership and assess potential links between their standing interests and initiatives and issues related to water resource management and the environment.
- ✓ **Identify and publish gendered differences in activities and concerns** of men and women related to:
 - Domestic wastewater management;
 - Small-scale agriculture practice;
 - Micro- and small-scale business practice;
 - Use and development of riparian areas;
 - Village environmental maintenance.
- ✓ **Develop and deliver bachelors- and Masters-level training modules for gender analysis** in policy, engineering, and other technical curricula at the university level via MOUs and working partnerships between academic gender centers and faculties of engineering, technology, policy, and administration.
- ✓ Include gender-responsive programming and management as a criterion for selection of agencies and communities for **environmental and other performance awards**.

Challenge 2: Designed institutional supports for PUG are underutilized.

Agencies lack designated PUG staff or nominate staff on an ad hoc, per meeting / event basis. As such, the PUG Focal Point model is not effectively serving its intended purpose.

PUG training is extremely limited, and many Focal Points do not understand gender concept and approaches, nor their roles with respect to PPRG.

Opportunities:

PUG Focal Points are required to be nominated within each agency to support implementation of PUG.

Guidance stipulates that Heads of SKPDs and PUG Focal Points are required to:

- Ensure availability of / provide gender-disaggregated data based on strategic issues,
- Ensure that strategic issues based on national and regional priorities and MDGs are subject to gender analysis, and
- Ensure that priority programs apply GBS.

Recommended Actions:

- ✓ **Nominate PUG Focal Points from amongst high-level staff** in agencies involved in water quality management, including BBWS Brantas, DLH Jatim, and kota / kabupaten DLH units, and require demonstration of implementation activities.
- ✓ Construct clear **Terms of Reference for Gender Focal Points** with specific reference to agency programs.
- ✓ **Require Gender Focal Point participation in planning processes for Renstra and Annual Work Plans** for water and environmental agencies.
- ✓ Facilitate **combined trainings and workshops on gender and water for Provincial and kota / kabupaten water and environmental agencies**, involving DP3AK as a training and facilitation resource.

COLLECTING AND USING GENDER-DISAGGREGATED DATA FOR WATER QUALITY PLANNING, MONITORING, AND EVALUATION

RECOMMENDATIONS FOR REQUIREMENT #5

Challenge 3: Guidance on available indicators for measuring baseline performance or monitoring progress on gender-responsiveness in water quality management is lacking.

Gender-disaggregated data collection and analysis are essential for understanding the differential impacts of water quality management interventions on women and men. By integrating gender-sensitive monitoring and evaluation mechanisms, water and environmental managers can assess the effectiveness of their strategies in addressing gender inequalities and adjust their approaches accordingly. Gender-responsive guidelines can offer methodologies for collecting, analyzing, and utilizing gender-disaggregated data to inform evidence-based decision-making.

Staff and financial resources are limited for gender collection (interview, DLH Jatim and BBWS Brantas, May 2023), and data for standard program monitoring and evaluation is often incomplete or qualitative only.

Opportunities:

International guidance is available as a model for selecting relevant gender-disaggregated data. Two helpful resources include the [UNESCO World Water Assessment Program \(WWAP\) gender-responsive indicators for water assessment, monitoring and reporting](#) (Miletto et al., 2019), the ADB AusAid Toolkit (Australian Aid, 2013), and the World Bank Toolkit for Mainstreaming Gender in Water Operations (World Bank Water, 2016).

Recommended Actions:

- ✓ Identify and socialize specific and measurable **gender-disaggregated indicators for water quality management** in combined trainings and through publication of a guidance note for water and environmental agencies.

Appendix I offers a list of relevant gender-disaggregated indicators for gender-responsive water quality management. These indicators are intended to assess the legal-institutional setting and levels of capacity-building for gender-responsive water quality management. They are also intended to (a) inform baseline assessment of gender-differentiated needs and concerns (b) measure progress on gender-responsive water quality management in relation to key questions associated with gender analysis.

These **key questions**, informed by the [RVO Gender Guide](#) (Netherlands Enterprise Agency (RVO), 2021), include:

1. *Who does what in the context of water quality management?*
 2. *Who has access to and who owns what resources, information, education, and other services?*
 3. *Who has the power and capabilities to act? Who decides what?*
- ✓ **Prioritize select indicators** to minimize additional burdens of data collection and identify easy wins to add male-female differentiation to current data collection approaches. Due to the limited resources available for monitoring and evaluation, prioritizing the most important / relevant indicators is an important step to minimize any additional burdens of data collection.

Challenge 4: Implementation of gender mainstreaming and application of gender analysis tools are low amongst water resources and environmental agencies in the Brantas basin.

Amongst government agencies and communities (outside of DP3AK and women's agencies at the kota / kabupaten levels), there is limited knowledge regarding application of gender analysis and PUG guidance for planning, implementation, and evaluation. Moreover, gender as an integral part of policy and administration is not prioritized in "normal" planning and operations, and there is minimal evidence of gender-responsive planning and budgeting (PPRG) guidance in the environmental and water resource management sectors.

Opportunities:

Gender mainstreaming (PUG) guidance and resources are readily available, including support for gender analysis tools such as the Gender Analysis Pathways approach. Terms associated with gender mainstreaming, gender-responsive planning and budgeting, and gender equity are clearly explained in regulation and discussed in a number of publicly available resources created by or in partnership with government agencies and non-governmental organizations in Indonesia.

Gender mainstreaming (PUG) is already mandated and supported by implementing guidance.

Recommended Actions:

- ✓ **Inventory water quality management-related programs to identify which should be subject to GAP.** These include programs and activities that support national development priorities (MDGs), stand as regional development priorities, have large budget allocations, or are generally important in relation to gender.

While the available implementation guidance for PUG at the regional level is helpful for understanding the process of PPRG development and approaches to assessing institutional support for PUG and application of PPRG, there is no precise guidance on the selection of programs and activities that should be subject to GAP or accompanied by GBS. The first steps, then, to applying PUG for water quality management are to (a) identify programs, policies, and activities for which GAP should be applied. These include programs and activities that support national development priorities (MSS and MDGs), stand as regional development priorities, have large budget allocations, or are generally important in relation to gender issues (Permen PPPA 4/2014). This step involves carrying out analysis of the goals and objectives of standing programs.

- ✓ Incorporate PUG in background studies and strategic plans (Renstra) for water and environmental agencies.
- ✓ **Facilitate periodic (annual or semi-annual) training sessions on Gender Analysis Pathways and requirements of PUG** for water and environmental agencies at basin, provincial, and kota-kabupaten level. At a minimum, such training should be provided to Gender Focal Points.
- ✓ **Create simplified GAP guidance** and provide a **completed example GAP analysis** for distribution to district-level environmental and water agencies.

- ✓ Support agencies to **identify inequalities and reformulate plans and programs** through facilitated preparation and review during formulation processes. Steps 3, 4 and 5 of GAP requires planners to identify factors causing inequalities based on access, participation, control and benefits and, thereafter, to identify internal (institutional) causes and causes of inequality external to the institution. These causes are to be considered in reformulation of policies and programs to address gender gaps.
- ✓ **Monitor PPRG implementation in water and environmental agencies.** A set of indicators to monitor PPRG is set out in a circular letter on PPRD (Petunjuk Pelaksanaan Perencanaan Dan Penganggaran Yang Responsif Gender Untuk Pemerintah Daerah, Lampiran 2, n.d.). In line with the prerequisites of PUG, these are summarized in Tables 4 and 5.

Table 4. General indicators of PPRG implementation

Requirement	Control (input) indicator	Evaluation (progress) indicator
Commitment and policy	Presence or absence of: <ul style="list-style-type: none"> - Regulation on GRPB issued by Governor /Regent/Mayor and / or DPRD - Guidelines or references PPRG implementation - Technical guidelines PPRG implementation (for SKPD authorized by the Governor/Regent/Mayor) Mayor) - Policy on data disaggregated data - Number of SKPDs that have practicing PPRG 	Effectiveness of implementation: <ul style="list-style-type: none"> - Regulation on GRPB issued by Governor/Regent/Mayor and or DPRD - Guidelines or references implementation of PPRG - Technical guidelines PPRG implementation (for SKPD authorized by the Governor/Regent/Mayor) - Policy on data disaggregated data - Trend in the number of SKPDs that already practicing PPRG - Challenges to encourage commitment and policy PPRG
Institutionalization	Presence or absence of: <ul style="list-style-type: none"> - Pokja PUG - Work Program / Plan of PUG Working Group - Focal Point - PUG Regional Action Plan (RANDA) - PUG Working Report - ARG Technical Team 	Work effectiveness: <ul style="list-style-type: none"> - PUG Working Group - Focal Point - ARG Technical Team - Challenges in promoting the effectiveness of PUG institutional work
Resources and budget	Presence or absence of: <ul style="list-style-type: none"> - SKPD human resource planners have the ability in implementing PPRG (in accordance with the applicable PMK or regional agreement) - Budget for PUG institutionalization 	Improved quality and quantity: <ul style="list-style-type: none"> - Human resources of SKPD planners have the ability in implementing PPRG - Budget for PUG institutionalization - Challenge to improve quality and quantity of human resources
Gender profile and gender-disaggregated data	Presence or absence of: <ul style="list-style-type: none"> - Regional gender profile - Disaggregated data related to with related programs 	Effectiveness of utilization: <ul style="list-style-type: none"> - Regional gender profile - Disaggregated data in determination of programs and activities - Challenges of preparation and utilization of gender profiles and disaggregated data
Community participation	<ul style="list-style-type: none"> - PUG forum involving civil society organizations (CSOs) - Involvement of communities, women and men in every planning process and budgeting process (Musrenbang and Public Consultation) 	<ul style="list-style-type: none"> - Trend in the number of CSOs involved in regional PUG forums - Trend in the number of women and men involved in Musrenbang - Trend in the number of women and men involved in Public Consultation RKPd, - Participation challenges community

Source: Petunjuk Pelaksanaan Perencanaan dan Penganggaran yang Resonsif Gender Untuk Pemerintah Daerah, Lampiran 2

Table 5. Document-based indicators of PPRG (select for SKPDs)

Planning Document	Control (input) indicator	Evaluation (progress) indicator
SKPD Renstra	<ul style="list-style-type: none"> - Systematics of SKPD Renstra and consistency of gender issues with RPJMD - Gender analysis of vision, mission, goals, strategies, policies, programs, and activities based on SKPD tasks and functions - Determination of SKPD performance indicators using disaggregated data 	<ul style="list-style-type: none"> - Ensuring that SKPD's vision, mission, goals, strategies, policies are gender responsive - Level of realization of the achievement of gender responsive programs and activities of each SKPD based on performance indicators and disaggregated data
SKPD Rencana Kerja (Renja)	<ul style="list-style-type: none"> - Systematics of Renja SKPD and consistency of gender issues with Renstra SKPD and RKPD and RPJMD - Gender analysis on programs and activities, performance indicators, target groups, locations and indicative ceiling and forecast 	<ul style="list-style-type: none"> - Level of realization of program achievement and gender-responsive activities based on performance indicators - Determination of group target groups and locations activities based on level of gender gap gender - Level of accommodation of alternative and new programs/activities that are more gender responsive
Rencana Kerja dan Anggaran (RKA) SKPD	<ul style="list-style-type: none"> - Use of GBS in preparation of RKA SKPD - Determination of performance indicators performance indicators in preparing programs/activities to be gender responsive - Total program/activity budget gender responsive activities - Number of programs/ activities that are made GBS 	<ul style="list-style-type: none"> - Realization rate level of program achievement and activities based on performance indicators performance indicators - Determination of group target groups and locations based on gender gap and disaggregated data - Number/trend of uptake funds that actually targeting groups and location based on gender gap and disaggregated data

Source: Petunjuk Pelaksanaan Perencanaan dan Penganggaran yang Responsif Gender Untuk Pemerintah Daerah, Lampiran 2

STRENGTHENING PARTICIPATION IN WATER QUALITY MANAGEMENT

RECOMMENDATIONS FOR REQUIREMENT #7

Engaging communities and empowering women to participate in planning, implementation, and monitoring of water quality management initiatives not only enriches the decision-making process but also leads to better designed programs and more effective and sustainable outcomes. More meaningful participation increases access to important localized and gendered knowledge that may impact, for example, the effectiveness of wastewater or solid waste management programs. Gender-sensitive stakeholder engagement involves engaging diverse stakeholders, including women's groups, men's groups, marginalized communities, and other relevant actors, in the planning process and ensuring meaningful participation and representation of women and men from different socio-economic backgrounds, ethnicities, ages, and abilities.

Increased and improved participation requires that government create **safe and inclusive spaces for participation in water quality management planning, budgeting, and evaluation**. Such spaces may include formal mechanisms of participation, such as Musrenbang and open government forums. They may also include informal channels such as community women's groups and cooperatives or faith-based prayer and discussion groups. Strengthened participation also demands **inclusive public information strategies and strengthened access to reporting and grievance mechanisms** that account for gender-differentiated patterns of communication. The following section summarizes the challenges facing women, with respect to participation and access, linked opportunities, and recommended actions.

Challenge 5: Women are under-represented in formal channels of planning and decision-making.

Because village planning is performed primarily by men, women's priorities for water and waste management are generally underrepresented in formulation, project selection, and evaluation.

Few women participate actively in formal village planning meetings such as Musrenbang, and invitation to such planning forums is often limited to leaders of PKK.

Opportunities:

A large number of established public forums and community groups (e.g., neighborhood associations, youth associations, religious schools, PKK, Musrenbang) are available channels for communication and training related to both gender mainstreaming and environmental action.

Gender mainstreaming (PUG) is already mandated in law at every level of government and supported by implementing guidance.

Survey and qualitative data show that women have (a) highest capacities to

Recommended Actions:

- ✓ **Develop curricula and materials for training in practical approaches to river health management and participation in village planning**, based on user needs and interests. Such training materials should be:
 - Developed jointly by DLH Jatim, BBWS Brantas, DP3AK, NGOs (LSMs), and universities, led by a faculty expert in participatory approaches
 - Tailored to user needs, interests, and activities (e.g., separate curricula for women's groups, school groups, and industrial / institutional users)
 - Designed with user limitations in mind (e.g., literacy levels, access to information, etc.)

manage household pollution and (b) confidence in their abilities to problem-solve for water quality and water pollution problems at the village level, including management of solid waste and use of riparian areas.

There have been many studies related to gender data and participation in the environment, including from universities located in the Brantas River area.



A spokesperson of Sekolah Perempuan Gresik speaks in a public meeting. Image source: Ecoton

- Updated / managed by a team from DLH Jatim, DP3AK, and Brantas River area university representatives with expertise in environmental management and gender
 - Publicly available on an online platform
 - Actively disseminated to through multiple public, community, and industry channels.
- ✓ **Provide training for advocacy and environmental science / management to river care communities and youth and women's groups**, including topics of:
 - Basic river ecology
 - Best practices for household management of pollution
 - Skills for advocacy, policy analysis, and proposal development for village planning
 - Rights to information, reporting, and filing grievances.
 - ✓ **Make results of village meetings** (including proposals and information on their approval / rejection) **publicly available online or in public posting at village offices**. Transparency is imperative to tracking gendered patterns in planning.
 - ✓ **Replicate the Musrenbang Perempuan** model with additional requirements for transparency, based on experiences at various administrative levels in the Brantas (including village level in Gresik, Kota Malang, Kabupaten Mojokerto).
 - ✓ Bappeda Jatim and Bappeda kota/kabupaten could **include a thematic focus on water, environmental health, and gender for the 2025 planning cycle**.

Challenge 6: Men's and women's local gender-mediated knowledge regarding environmental management is often untapped in social problem-solving.

Because of lower participation of women in formal government planning mechanisms and lower participation of men in solid waste management and village cleanliness, gendered local knowledge regarding waste and water management options may be under-represented in social problem-solving.

Opportunities:

Women in limited areas have been active participants in government-community efforts related to water quality management, including participation in water quality monitoring and sampling programs, river clean-up and waste management programs, water patrols, etc.

Men are traditionally active in community-based service and construction projects that involve physical labor, as well as in livelihoods with high river interactions (e.g., farming, fishing).

Successful community mapping models have been implemented in Indonesia to identify localized problems, root causes, and solutions.

Recommended Actions:

- ✓ Pilot village planning programs that **employ community mapping** (performed by male and female groups) to explore differences in gendered perspectives regarding local river- and waste-related problems and potential solutions.
- ✓ **Develop community-based mapping guidance** that can be disseminated to environmental NGOs (LSMs), river care communities, and village government.



Members of Wadulink Sumengko share experiences in riparian conservation and environmental advocacy, May 2022.

Image source: Schuyler Houser

Challenge 7. Women bear the overwhelming burden of waste management at the household and village levels.

Cleanliness (household and village) is generally considered a responsibility for women, but women's environmental management activities are largely voluntary. Thus, women bear the opportunity cost of foregone participation in other potential income-generating activities. Moreover, the task of improving solid waste management (and, thus, reducing the volume of garbage that enters river resources) is unduly borne by women who have limited control regarding land resources needed for terminal disposal.

Opportunities:

Many community activities already apply local knowledge to produce environmentally friendly household products and food products (e.g., Moringa leaf cakes, water hyacinth for shampoo, upcycled products from solid wastes).

Food preparation is seen as "women's business".

Riparian land may be used for environmentally friendly cultivation that also preserves riverside areas and prevents illegal dumping of garbage and illegal riverside development (building).

There is established support for the Bank Sampah models and growing interest in waste-to-energy technologies.

Recommended Actions:

- ✓ Inventory, promote, and provide resources to **support replication of successful green business models**, including those that concurrently involve the conservation of riparian areas. Such models include, for example the Wadulink Sumengko Green Belt Moringa Park and efforts to implement Green Certification programs for micro-businesses.
- ✓ **Engage men as allies in waste management** through facilitated meetings that socialize men's involvement through concrete examples of community labor for waste management. Ask female-male stakeholders about how to balance participation.
- ✓ **Require F/M village representation** in Cipta Karya, DLH kota / kabupaten, DLH Jatim, and desa-level planning for solid waste management.



Women sort waste during a community brand audit in 2022. Image source: Fully Syafi.

Challenge 8. Public concern regarding river health is low.

Because of low direct interaction with the river and available coping mechanisms for poor water quality, interest in river health and concern regarding water pollution is low. Household waste and wastewater management practices that degrade river health (e.g., illegal solid waste dumping, direct household discharge to the river, etc.) are persistent.

Many Brantas River basin residents are unaware of the available channels for filing complaints regarding environmental violations and rights to information regarding the environment and government action.

Opportunities:

Indonesia has the most active social media users worldwide (167 million) only behind China and India. Approximately 60% of the population is connected via platforms including YouTube, Facebook, Instagram, and WhatsApp. YouTube's penetration rate was 94% as of 2020, while Facebook's is at approximately 61%.

There are many existing organizations and community groups (not limited to environmental groups) that are an available network for transferring knowledge and providing support related for river stewardship and riparian conservation, waste management, participation in water planning and governance, and other topics related to community engagement in river governance.

Citizens are concerned about the quality of their groundwater and tap water. Linking river health to consumable water resource quality is an opportunity to speak to standing daily concerns.

Recommended Actions:

River health and water resource management is, in part, a "hearts and minds" issue, and growing social concern for river health is key to (a) engaging more citizens in good waste and wastewater management practices and (b) elevating river health in public planning and development.

- ✓ Develop a **public information campaign based on viral marketing** that responds to the particular aspirations and concerns of men and women that related to environmental care. Such a campaign could be developed in partnership with local universities with marketing and social media programs, in consultation with DLH Jatim and gender specialists.
- ✓ **Revive the Brantas Tuntas program** under the leadership of the Governor of East Java, with an organizing team that includes faculty with expertise in water resource management, public administration, and gender. This program can become an academic brand for a united, basin-wide focus on water with the additional value of socializing gender-mainstreaming in water management.
- ✓ **Socialize the links between health, groundwater, and river water through public education programs** that combine river water quality monitoring, groundwater water quality monitoring, and community-led mapping and policy analysis.

Challenge 9. Knowledge transfer regarding effective community-based models of river stewardship is limited and unresponsive to gendered aspects of public information.

While river care communities often collaborate and participate in joint programming, cooperative efforts are ad hoc and there is no available network for sharing effective models of community-led conservation, waste management, and river stewardship.

Limited availability of online resource and lack of a centralized repository of “how-to” guidance means that interested community organizers must bear high search costs in order to access information and support for effective models of community-led river care.

Opportunities:

Communities have demonstrated initiative and energy, even without the support / prompting of government agencies; there are already many environmental communities formed.

There is apparent demand for environmentally friendly development and community action for waste and wastewater management and conservation.

There is already a large inventory of community activities supported by government that relate to environmental issues (e.g., climate village, Zero Waste, and Smart City programs).

There are already examples of effective ecotourism activities in the Brantas River area that can engage both women and men in river stewardship.

Recommended Actions:

- ✓ **Regular (e.g., annual or quarterly) roadshows, workshops, fairs, or showcase events** would facilitate inter-community exchange regarding river health. Such meetings or events could be organized by BBWS Brantas, DLH Jatim, DP3AK, and kota / kabupaten governments (or DLH offices) and could also focus on annual themes. Themes could include community models for waste management and circular economy; riparian conservation and green development; women's empowerment in community planning and environmental management; and ecotourism.
- ✓ The **BrantaSae website** (currently being developed and maintained by Brawijaya University) should be further developed and socialized as an online platform for disseminating river water quality solutions, technologies, and data, with specific tags developed to index types of activities (e.g., ecotourism, etc.)



Women in the AKSI Brantas network share experiences and training in water quality monitoring, advocacy, conservation, and waste management, June 2022. Image source: Schuyler Houser

Challenge 10. Social and religious values related to water and the environment often do not match social practices.

While the tenets of Islamic faith support environmental conservation and sustainable water management, household, institutional, and industrial practice often do not align with stated belief or practices taught in schools and religious institutions.

Opportunities:

There are many faith-based social activism channels available in the community (e.g., recitation groups, fatayat, Muslimat, Aisyiah, etc.) as well as a large network of Islamic boarding schools. Moreover, the majority of Indonesians understand and accept that cleanliness is a part of faith.

Faith-based schools have an existing educational system that addresses gendered activities related to the river environment, either in terms of gendered activities that directly involve water resources or in relation to the gendered activities performed at the household level.

Recommended Actions:

- ✓ **Engage religious organizations** and promote **multi-stakeholder seminars or workshop on water and faith** that involves government, community, and academic representatives and religious leaders to explore integration of Islamic values and traditional knowledge and belief systems in environmental preservation, including the notion that cleanliness is a part of faith. Such an event (or series of events) could focus on (a) identifying tenets of faith that align with integrated water quality management and (b) faith-based modes of support for good waste and water management practice and teaching.

V. CONCLUSION

The Brantas Water Quality Project presents a situation analysis and accompanying framework for improving water resource management by integrating gender-sensitive approaches within environmental and river basin management of the Brantas River. This report highlights the need to identify gender-differentiated needs in water quality management and planning, address gender disparities, and increase the role of women in decision-making and knowledge-sharing related to water and river health.

The Government of Indonesia, the Government of East Java, the Ministry of Public Works and Public Housing, the Ministry of the Environment and Forestry, and the kota and kabupaten in the Brantas River basin can build upon a solid existing policy foundation to strengthen gender responsiveness and equitable participation in the water and environmental sectors. As evidenced in this report, available guidance and frameworks for gender analysis, gender-responsive planning and budgeting, and participation offer sufficient general guidance for providing institutional support, performing gender analysis, and developing plans and programs that consider and respond to gendered needs. That said, implementation of such guidance is limited in the water and environmental sectors. Key areas of development include:

- ✓ Building capacity and political support for gender mainstreaming in water and environmental agencies through training and support of Gender Focal Points;
- ✓ Offering more specialized guidance for performance of Gender Analysis, creation of Gender Budget Statements, and selection of relevant gender-disaggregated indicators;
- ✓ Developing community-level capacity, particularly amongst women, to engage more actively in village planning, solution-finding, and decision-making related to water resources.

Ultimately, the Brantas Water Quality Project proposes a renewed focus on advancing gender mainstreaming in water resource governance, both to improve the responsiveness of water management to gendered needs, and as a vehicle for closing broader gender gaps related to participation in governance processes. By enhancing political commitment, providing targeted training, and promoting inclusive decision-making processes, the Brantas River basin can serve as a model for equitable water management in other regions. The recommendations put forth aim to address key challenges while leveraging existing policies to create a more gender-responsive, effective, and sustainable approach to water quality management in the Brantas and beyond.

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APPENDIX. GENDER-DISAGGREGATED INDICATORS FOR WATER QUALITY MANAGEMENT

This appendix proposes specific indicators for (a) baseline assessment of gender-differentiated needs and concerns (b) measuring progress on gender-responsive water quality management in relation to key questions associated with gender analysis.

Key Question	Measurable / Observable Indicator	Collection method
BACKGROUND: LEGAL-INSTITUTIONAL SETTING		
What laws, policies and standards relevant to WRM promote / enable gender equality?	Number / percentage of Basin, provincial, and regional water policy and environmental strategies that include gender-sensitive analysis or gender-related goals/objectives and status of implementation (e.g., planning, early implementation)	Desk review
	Procedures for coordination between agencies that deal with water resources or environment (BBWS, PU SDA Jatim, DLH Jatim, district water or environment units) and the women's empowerment agency (DP3AK) and actions taken to improve water services as a result of this coordination	Interview
	Presence / absence of standards or guidelines to ensure women's participation in community activities related to water and the environment	Desk review / partner reporting
KEY QUESTION 1: WHO DOES WHAT IN THE CONTEXT OF WATER QUALITY MANAGEMENT?		
Who undertakes household tasks related WQ, including wastewater disposal, solid waste, and care of sick?	Percentage of (F/M) with primary responsibility for household solid waste disposal	Community survey
	Percentage of (F/M) responsibility as primary carer for sick family in the household	
	Percentage of (F/M) responsibility as primary purchaser of cleaning goods and care items (e.g., shampoo, detergents)	
What are gendered concerns related to water quality?	(F/M) satisfaction with river water quality	Community survey
	(F/M) satisfaction with the quality of waste disposal arrangement	
	Perception of household members (disaggregated by sex, age and job type) on impact of water quality on sustainability of / risks to livelihoods.	
Who undertakes water quality management?	Number of F/M staff in different job (levels) and fields in water resource and environmental agencies	Organization HR data
	Percentage (F/M) involved in NGOs active in environmental protection of water	NGO data
Who undertakes livelihoods that affect or are affected by water quality?	Percentage of (F/M) entrepreneurs operating small-scale laundries	Survey / observation
	Percentage of (F/M) entrepreneurs operating small-scale food and beverage enterprises with wastewater discharge	

KEY QUESTION 2: WHO HAS ACCESS TO AND WHO OWNS WHAT ASSETS? WHO HAS ACCESS TO FINANCIAL RESOURCES, INFORMATION, EDUCATION, AND OTHER SERVICES?

Who has access to assets, jobs, and financial resources?	Number of F/M small-scale entrepreneurs with sustainable income from provision of wastewater management services	Observation / survey
	Number and percentage of women contractors or women's groups awarded contracts for waste disposal or sanitation	
	Number of F/M small-scale entrepreneurs with sustainable income from waste management	
	Number of F/M small-scale entrepreneurs with sustainable income from circular economy enterprises / waste reuse	
	F/M access to available funding for community solid waste and wastewater organization	Survey / program data / interviews
Who has access to information regarding participation and accountability mechanisms?	(F/M) knowledge regarding options to participate in public planning meetings (e.g., Musrenbang, public meetings on water resource management)	Survey / interview
	Evidence that procedures for responding to water-related complaints (e.g., pollution incidents) are publicly available and accessible to women and that responses are implemented and monitored	Interview / desk review
	Evidence that information on water forums, community planning meetings, and other participation opportunities are publicly available and accessible to women	Interview / desk review
Who has access to information? What knowledge gaps exist?	F/M knowledge of water quality-related environmental issues	Interviews, surveys
	F/M knowledge of environmental rights and access to complaint mechanisms	Community survey
	Number of water-related publications with gender-specific content produced by regional organizations, NGOs, and academia available in the public domain	Desk review
	Number and type of gender sensitization / awareness-raising events / public communication by agencies	Agency reporting
	Number and percentage (F/M) participating in community education programs / awareness-raising events related to water quality management	Agency / NGO reporting
Who gets the opportunity to engage in professional development, capacity building, training, and education on water and waste management?	Number and percentage of women and men who receive water quality management training, by type of training (e.g., community-based early warning systems and procedures) in agencies, commissions, industry; and feedback on the usefulness of the training from F/M staff/employees.	Survey
	Number of F/M staff in different job positions participating in gender training in agencies and commissions that deal with water resources or the environment; feedback from F/M staff	
	Number of F/M community members who have received technical training related to water management from government/non-government organizations; constraints to participation; reasons and solutions for constraints	

Number of F/M members in the community who have received technical training related to water quality monitoring and are using it in their activities

KEY QUESTION 3: WHO HAS THE POWER AND CAPABILITIES TO ACT? WHO DECIDES WHAT?

Who takes decisions related to water resource management?	(F/M) membership with position in TKPSDA / other commission for water quality coordination	Coordinating body roster
	(F/M) membership with position in local institutions for managing solid waste	Organization questionnaire / agency reporting
	(F/M) membership with position in local institutions for public budgeting	
	(F/M) membership with position institutions for spatial planning	
	Participation by F/M committee members in decision-making meetings for spatial planning; reasons for participation; proportion F/M participation	Observation
	F/M participation in decision-making processes in community-based management systems; changes over time with reasons; and discriminatory practices, if any.	
Evidence and examples of improved service delivery in waste management or water resource management due to advocacy and action taken by women		
Who has the organizational and financial resources to act, participate, engage?	Number and percentage of women and men attending consultation meetings about planning, design, pricing of services, differentiated by meeting type (Musrenbang, public meetings on water resource management)	Observation
	Number and percentage of women and men in community associations on water management / waste management (e.g., user groups, self-help groups)	Observation / survey
	Number of women's organizations involved in the assessment and management of environmental hazards	Observation / desk review / reporting
	Number of women's groups engaging in national debate and analysis of environmental impacts, and climate change policy, regulatory frameworks, and programs	Observation
	Number of women's organizations and coalitions supported by project	Project information
	Description of work undertaken through civil society to establish an enabling environment for women to participate in decision making	Desk review, interviews
	Presence and role of local women's organizations receiving technical / financial support from government/non-government organizations for managing solid waste or domestic wastewater	Government / NGO reporting
Capabilities, including leadership	Number and percentage of women in leadership positions in community associations related to waste management or water, by type of association	Observation / survey
	Evidence and examples of awareness-raising and community mobilization with women on water management and participation	Observation

Beliefs and Ideas	Views of women and men regarding changes in women's household or community decision making due to their involvement in water activities	Pre- and post-surveys
	Evidence of changes in attitudes of women and men (including youth) on appropriate roles for women and their right to participate in governance and public administration	Pre- and post-surveys
	Views of female public sector and local government employees regarding respect from male colleagues and community	Survey
Self-confidence / confidence	Beliefs regarding the roles of women in WRM and community participation	Perceptions survey / focus groups
	Beliefs regarding the roles of women regarding household decision-making	
	Beliefs regarding the participation of women in science	
	Confidence to participate in public forums and planning sessions	
ADDITIONAL: CAPACITY DEVELOPMENT FOR GENDER EQUITY		
	Number and percentage of women and men in civil society organizations trained in gender analysis of environmental impacts	Event data
	Number of training sessions with environmental agencies and other stakeholders on participatory techniques to involve women and men; number and percentage F/M	Event data
	Number of training and awareness sessions with environmental agencies and other stakeholders on gender issues in environmentally sustainable water resource development; and number and percentage F/M	Event data