Gender and waste nexus

Experiences from Bhutan, Mongolia and Nepal

ISBN: 978-92-807-3760-8

Job No: DTI/2257/NO

Recommended citation
UNEP-IETC and GRID-Arendal (2019). *Gender and waste nexus: experiences from Bhutan, Mongolia and Nepal*

Credits
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Gender and waste nexus

Experiences from Bhutan, Mongolia and Nepal

Acknowledgements

In memory of our late colleague Victor Tsang, who lost his life prematurely in the Ethiopian plane crash on 10 March 2019 near Addis Ababa. Victor was a passionate and dedicated champion of gender mainstreaming and sustainable development and contributed to this report with constructive inputs as the former gender focal point of the United Nations Environment Programme. His charisma and dedication will not be forgotten. He is sincerely missed.

Special thanks are given to the country partners of the Waste and Climate Change project, namely, Mark Koenig, Ariunaa Norovsambuu and Enkhbold Erdenebat of The Asia Foundation in Mongolia, Aisha Khatoon and Karuna Adhikaree of Leadership for Environment and Development (LEAD) Nepal, and Tashi Jamtsho and Bhawana Kafley of the World Wildlife Fund (WWF) Bhutan. Thanks to all the country partners that provided their support to conduct the field research, collect information and organize consultation workshops for this report.

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Supported by:
Federal Ministry for the Environment, Nature Conservation, Building and Nuclear Safety
based on a decision of the German Bundestag

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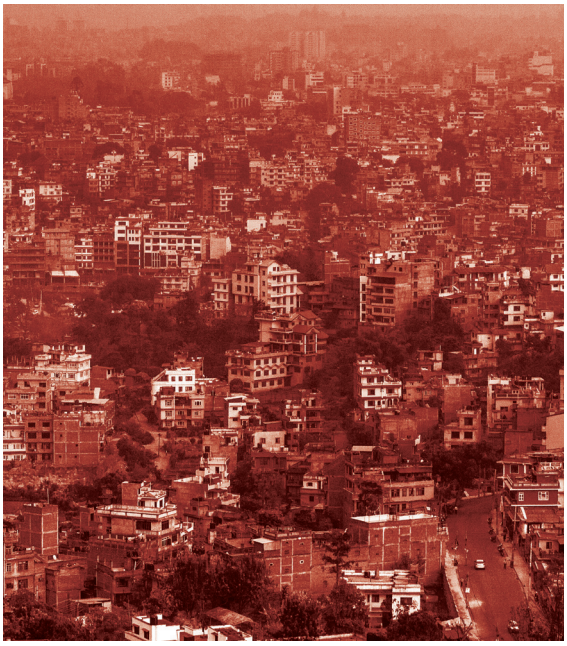

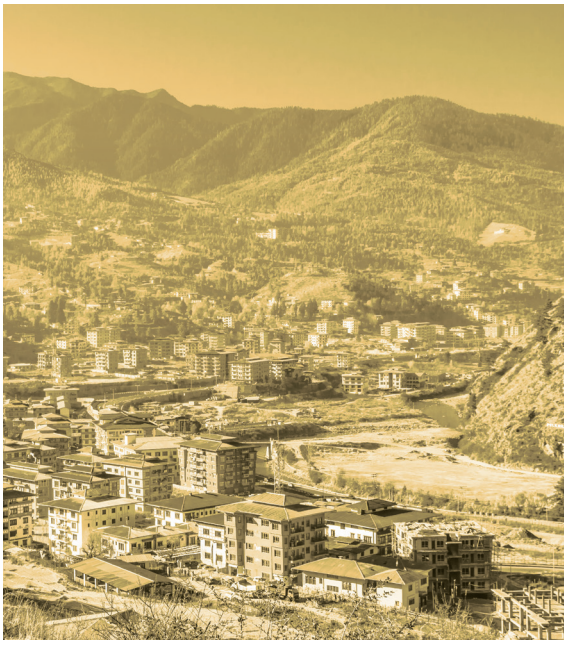

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Acronyms

BAOWE	Bhutan Association of Women Entrepreneurs
CH_4	methane
CSIR	Council for Scientific and Industrial Research
CSO	civil society organization
CSR	corporate social responsibility
EPR	extended producer responsibility
GESI	Gender Equality and Social Inclusion Working Group
GHG	greenhouse gas
GNH	Gross National Happiness
IGES	Institute for Global Environmental Strategies
IKI	International Climate Initiative
ILO	International Labour Organization
INDC	Intended Nationally Determined Contribution
IPCC	International Panel on Climate Change
ISWM	integrated solid waste management
LEAD	Leadership for Environment and Development
NCWC	National Commission for Women and Children
NDC	Nationally Determined Contribution
NEPEM	Women's Research Center
NGO	non-governmental organization
NKRA	National Key Result Areas
NPAG	National Plan of Action for Gender
OECD	Organisation for Economic Co-operation and Development
SAARC	South Asian Association for Regional Cooperation
SDG	Sustainable Development Goal
SIGI	Social Institutions and Gender Index
SLCP	short-lived climate pollutant
SME	small and medium-sized enterprise
STEM	science, technology, engineering and mathematics
SWaCH	Solid Waste Collection and Handling
UFMG	University of Minas Gerais
UNEA	United Nations Environment Assembly
UNEP	United Nations Environment Programme
UNEP-IETC	UNEP International Environmental Technology Centre
UNFCCC	United Nations Framework Convention on Climate Change
WIEGO	Women in Informal Employment: Globalizing and Organizing
WWF	World Wildlife Fund

Foreword

How to better manage waste is a key challenge for countries and cities around the world. Poorly managed waste threatens human and ecosystem health and depletes resources. It also contributes to climate change. According to the Intergovernmental Panel on Climate Change, GHG emissions from the waste and wastewater sector accounts for about 2.8 per cent of global anthropogenic GHG emissions (IPCC 2007).

While we have paid significant attention to better managing waste to address such issues, we have not been as mindful of the gendered nature of waste management and the critical role women play in achieving a pollution-free planet. This Gender and Waste Assessment underlines the positive role women can play in waste management, learning from the experiences of Mongolia, Nepal and Bhutan.

The division of labour based on conventional gender roles and stereotypes dominates various sectors. Waste management is no exception. Social and cultural stereotypes create unconscious gender bias in formal waste management operations.

Women are often left out once waste activities are formalized. In the case of Ulaanbaatar, Mongolia for instance, more men were employed when street cleaning activities were professionalized, even though women had played more active roles when the activities were voluntary or informal.

Mainstreaming gender in the waste sector can be an opportunity to drive improvements to the overall system. Women generally manage household waste and could play a valuable role in further waste reduction, segregation, composting and recycling.

Gender mainstreaming in the waste sector is also an opportunity for governments to meet their gender equality commitments, and can unlock economic benefits. Strengthening the participation of women in the waste sector can lead to more efficient and effective waste management operations.

It is my hope that this publication will inspire policymakers, businesses, communities and all other stakeholders to recognize unconscious gender biases where these occur, and create opportunities for women to take active roles in the waste sector. This will benefit us all – men and women, government, community and individuals – and help to reduce the environmental burden through sound management of waste.

Inger Andersen
Executive Director
United Nations Environment Programme

Executive summary

Waste, unwanted and discarded material, is a growing problem worldwide that concerns everyone. Waste management is a cross-cutting issue linked to socioeconomic and environmental aspects. Sound waste management can address a number of challenges, particularly those relating to health, poverty, food security, resource management, climate change and equal participation.

The Sustainable Development Goals (SDGs), which are overarching global commitments to achieve sustainable development, promote waste reforms that prioritize the reduction of waste generation through prevention, recycling and reuse and aim to achieve environmentally sound management of waste throughout its life cycle. These commitments, including the overall mandate of the SDGs to "leave no one behind", underscore the importance of the gender issues in the waste sector.

Over the past few years, the issue of gender in waste management has received increasing attention, highlighting that waste production and management is not gender neutral. In fact, existing gender inequalities, responsibilities and roles largely shape how waste is situated in many social and economic systems. This report examines the relationship between gender and waste through case studies carried out in the capital cities of Bhutan (Thimphu), Mongolia (Ulaanbaatar) and Nepal (Kathmandu).

The current gendered profile of the waste sector in the three countries is the product of people's attitudes about men and women and the associated stereotypes directly linked to everyday life. Gender inequalities and norms are embedded in almost every aspect of waste management and are distinctly evident throughout the entire value chain, mirroring existing socioeconomic structures.

Waste management is an essential utility service governed by the public sector and is often implemented in partnership with the private sector. In both the public and private sectors, men hold most upper-level administration roles, from city managers and planners to landfill operators and managers of waste collection companies. Women are more engaged in informal, household and neighbourhood activities related to waste, which are typically voluntary, unpaid or minimally compensated.

Informal labourers form an important part of the waste sector in all three countries. In Mongolia and Nepal, informal recycling activities are particularly prominent, involving waste pickers at transfer stations and landfills, small-enterprise scrap dealers and scrap traders. Even though these activities are well established in Bhutan, Mongolia and Nepal, their governments do not recognize or protect this informal sector. As modernization progresses, actors in the current informal sector may find themselves at risk of losing their livelihoods.

The shift towards a more technological and engineering-based waste sector is under way in all three countries, and higher levels of education and training will therefore be required. At present, more men enrol and complete studies within science, technology, engineering and maths (STEM) than women. If education opportunities and not equal for both genders, women will be excluded from the sector's critical entry points.

Households, which currently have the least formal engagement with the waste sector's power and policy structures, could be a fundamental area to reform, as household management and separation of waste supports the entire waste management chain. As of yet, neither the social and monetary value of households' services, nor the unpaid labour of women managing waste within households has been measured or even officially acknowledged. The alienation of men and boys from domestic and community waste management activities has significant social and economic costs, which will undermine any waste sector reforms if left unaddressed.

Equal opportunities and recognition for both women and men is needed to move the waste sector forward. Gender-based quotas, affirmative action or training opportunities for women in jobs with the biggest inequalities – entrepreneurship, administration, finance, trade, engineering, truck driving – may lead to better representation of women and somewhat alleviate the imbalance. Similarly, regulatory and policy support, awareness-raising campaigns, training and incentives could encourage men to redistribute their time towards housework and to participate in informal and community-based waste management and mitigation practices.

Gender mainstreaming activities are only available at upper administrative levels, if at all. Training on gender mainstreaming for all staff in district and local offices related to waste management would build knowledge on the concept and benefits of the approach that could be shared and implemented within the sector at all levels.

Waste collector, Kathmandu. Photo by iStock/Kristin Greenwood.

At present, Bhutan, Mongolia and Nepal do not collect gender-disaggregated statistics and information on the waste sector in any systematic way, though this is a change needed if they are to develop evidence-based and gender-sensitive policies. Collecting gender-disaggregated data for all relevant waste sector indicators in order to measure impacts and results will provide important benchmarks against which any changes within the sector can be assessed.

Gender norms and inequalities exist within, and in turn structure, almost all aspects of waste management. Waste sector reforms will therefore only be effective and sustainable if they adopt a gender perspective and are committed to ensuring gender equality. Implementing policies to bring about such reforms within the waste sector will not only accelerate the three governments' ability to meet their broader international and national equality commitments, but will also encourage other economic and social sectors to focus on achieving gender equality.

Introduction

Waste management is closely linked to action on climate change, as unsound disposal and treatment of waste contributes to the emission of greenhouse gases (GHGs). Within the waste sector, the largest source of GHG emissions is methane (CH_4), including from landfills and open dumps. According to the Intergovernmental Panel on Climate Change (IPCC), GHG emissions from the waste and wastewater sector accounted for about 2.8 per cent of global anthropogenic GHG emissions in 2004 (Intergovernmental Panel on Climate Change [IPCC] 2007).

Improvements in waste management activities are a priority at both the global and national levels due to their links with climate change as well as the considerable health and pollution damage resulting from poorly managed waste systems. The United Nations Environment Programme (UNEP) Governing Council highlighted the importance of waste management in a number of decisions developed at one of its recent sessions,[1] as did the fourth session of the United Nations Environmental Assembly (UNEA),[2] which adopted several resolutions related to waste management.[3]

Several of the Sustainable Development Goals (SDGs), which are the global commitments to achieve sustainable development by 2030, include waste reform as an action needed. One specific goal, namely SDG 12, prioritizes the need to "by 2030, substantially reduce waste generation through prevention, reduction, recycling and reuse", as well as the aim to "by 2020, achieve the environmentally sound management of chemicals and all wastes throughout their life cycle".

The SDGs also provide a powerful global framework for eliminating gender disparities across all sectors and socioeconomic domains. Gender equality and women's empowerment are integral throughout the SDGs and are at the heart of SDG 5, which focuses on the commitment to "end all forms of discrimination against all women

Recycling facility, Ulaanbaatar. Photo by Joni Seager.

and girls everywhere". SDG 5 also includes more specific gender targets that are relevant to the waste sector, such as to "ensure women's full and effective participation and equal opportunities for leadership at all levels of decision-making in political, economic and public life". Global commitments to the SDGs, including the overarching SDG mandate to "leave no one behind", underscore the importance of understanding the gender and waste nexus. These broad commitments establish the need for ensuring gender equality in the waste sector, the progress of which will in turn contribute to the implementation, and consequently achievement, of multiple SDGs.

In consideration of these mandates, the UNEP International Environmental Technology Centre (UNEP-IETC), together with partner organizations from Bhutan, Mongolia and Nepal, has initiated the Waste and Climate Change project funded by the International Climate Initiative (IKI), which focuses on climate mitigation and the reduction of GHG emissions from the waste sector by:

- developing waste management strategies at the national and city levels, which have explicit links to mitigation opportunities related to GHGs and short-lived climate pollutants (SLCPs)
- identifying environmentally sound technologies for the waste sector based on UNEP's Sustainability Assessment of Technologies Methodology
- strengthening the capacity of policymakers to access green financing for large-scale investments in technologies in order to mitigate GHGs and SLCPs in the waste sector
- raising awareness among government officials, waste sector operators and the general public on the potential mitigation benefits in the waste sector.

The purpose of this technical report is to assess current gender and waste linkages through three case studies – Bhutan, Mongolia and Nepal – and to bring a gender perspective to the Waste and Climate Change project. More specifically, the study was developed to:

- identify linkages between gender, waste and climate change in Bhutan, Mongolia and Nepal
- advance gender mainstreaming in the waste management sector[4]
- propose targeted actions to mainstream gender in activities carried out as part of the Waste and Climate Change project.

Interviews in Bhutan, Mongolia and Nepal were conducted at the household, municipality, formal operational and informal waste management levels. The full methodology can be found in annex 1. In addition, UNEP-IETC, in collaboration with the national partner organizations, organized stakeholder consultations to provide further feedback, particularly on policy recommendations. These consultations were carried out in all three countries in April 2019.

> Gender is the result of socially constructed ideas about the different roles, behaviours, rights and responsibilities of men and women, and the relations between them. Gender relations themselves are also created by a range of institutions, such as family, legal systems or the economic context. As a result, the understanding of gender and gender relations differs between cultures and societies, and also changes over time. Gender difference is usually connected to unequal power and access to choices and resources. The different positions of women and men are influenced by many aspects, such as historical, religious, economic and cultural realities, as well as the environment.
>
> This gender assessment acknowledges and identifies, to the extent possible, "intersectionality", specifically the different power and hierarchical relations that result from the combined effects of gender, race, ethnicity, caste, class, age, ability/disability, religion, ethnicity and other social identities.

The focus of this report is on household municipal solid waste. This waste typically comprises materials discarded in everyday life, such as food and organic waste, paper and packaging, durable materials and plastic containers, though it can also include hazardous waste, such as batteries or household electronic equipment.

Since urban households generate more waste per person, the report focuses on the countries' capital cities: Thimphu (Bhutan), Ulaanbaatar (Mongolia) and Kathmandu (Nepal).[5] These capital cities are the single largest urban agglomeration in each country, and due to their outsized cultural, demographic and economic presence and influence, qualify as primate cities. Household waste problems are more severe and significant in primate cities than in other settlements, and as a result, mitigation solutions and policies developed for such cities will generally set national standards, especially in rapidly urbanizing countries such as Bhutan, Mongolia and Nepal.

Recycling, Kathmandu. Photo by iStock/DimaBerkut.

PART 1

Gender, waste and climate change

Waste is an issue that concerns everyone worldwide. Generally understood as unwanted and discarded material that has lost value from its original form, waste includes gaseous, liquid and solid materials. Views of what constitutes waste are highly individual and vary from culture to culture. According to the Global Waste Management Outlook, the growing concern for proper waste management is linked to other global challenges, such as health, poverty, food security, resource management and climate change (United Nations Environment Programme [UNEP] 2015).

Climate change impacts are intertwined with the problems of overproduction and overconsumption, and their resulting waste. This is both an existential and ecological crisis, especially given that production, consumption and waste are continuing to increase everywhere in the world. These trends are partly driven by urbanization, though the largest driver may be the effects of global circuits of capital on local economies.

Since waste contributes to GHG emissions, efforts should be made to limit these through promoting more sustainable use of natural resources, as well as the prevention, reuse, recycling and recovery of waste. UNEP (2015) estimates that global GHG emissions could be reduced by 10–15 per cent if waste is properly managed using a life cycle approach (including recycling, turning waste into energy and landfill mitigation), which could potentially increase to 15–20 per cent with appropriate waste prevention.

The long-term goal of mitigating the waste management sector's climate change impacts requires a clear understanding of the broader local, regional and socioeconomic and political structures and conditions that establish the fundamentals of the industry and the functioning of the sector, as well as the gendered relationships throughout. Certain large-scale socioeconomic structures within each country, such as the distribution of education and literacy, economic sectors (e.g. consumption and production), political frameworks, urbanization and global trends, have specific and more general relevance to waste management in terms of gender. Areas to be addressed in the waste management sector therefore follow the waste management hierarchy, starting with the most preferable activities, such as waste prevention, through to the least preferable activities, such as unregulated landfill disposals and leakages into the environment

The waste management hierarchy

The waste management hierarchy prioritizes waste management practices from the most to the least preferred option based on how each practice contributes to minimizing the waste sector's potential environmental impacts. Prevention, reuse, recycling and recovery of waste can lessen pollution, reduce GHG emissions and advance the sustainable use of natural resources.

Stakeholders throughout the sector carry out activities linked to the different levels of the waste management hierarchy. Reforming the waste sector will require policies and practices that consider the current gender representation, which can help forge a path towards achieving gender equality in the sector.

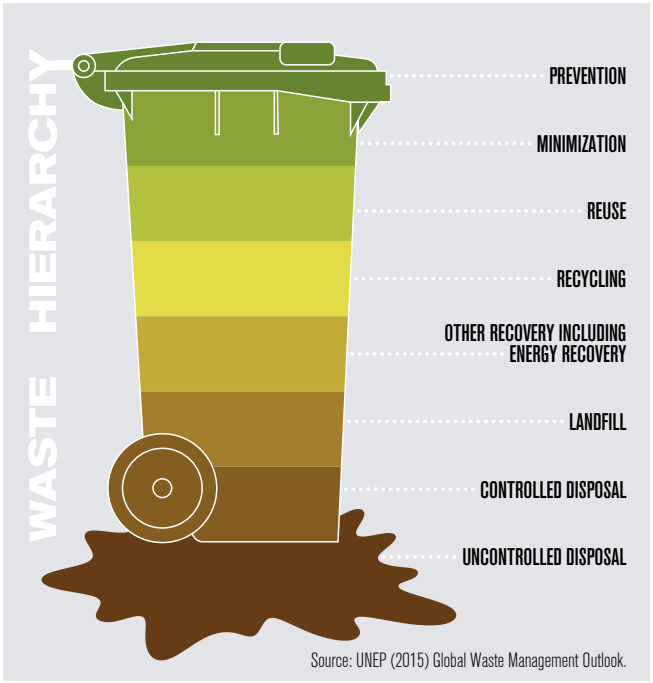


Figure 1. Waste hierarchy

Garbage collection in Kathmandu, Nepal. Photo by iStock/NatanaelGinting.

Stakeholders and structural characteristics of the waste sector

The structural characteristics of the waste sector engage actors and stakeholders across a range of implementing and decision-making levels. Gender inequalities exist at all levels, as do the opportunities to move towards gender equality.

Households and communities

Household waste is a significant proportion of the total solid waste generated. The success of current waste management systems therefore largely depends on how well such waste is managed. Households, which currently have the least formal engagement with the waste sector's power and policy structures, may be a crucial area for reform in the waste sector. Understanding the creation and management of household waste is particularly important, due to their tremendous capacity for reducing the flow of waste through household consumption, segregation and recycling practices.

Community structures, such as neighbourhood associations or informal community groups, particularly in smaller urban settings, can also play a pivotal role in the waste sector. Communities are involved in the early stage of the waste management chain (as are households) and can therefore contribute to successful waste management implementation.

Policy and governance

Policymaking, legislative framework development, budgeting and priority setting are all part of governance. The public sector has the legislative and administrative authority and responsibility of the waste sector, sets the sector's strategic direction and is key to driving its development and improvement at both the national and local levels. Policymakers are responsible for finding the best solutions to sustainably finance waste-related services.

Operational level

Formal

Waste management is an essential utility service coordinated by the public sector, though the actual operations may rely heavily on the private sector or public–private partnerships. As a result, there are often double layers of administration, both in public and private structures.

As a labour-intensive sector, waste management creates many job and business opportunities for professionals, including engineers, repair and maintenance technicians and traders, as well as for those performing practical low-skilled work, such as waste pickers, waste collectors, drivers, recyclers and sweepers.

Recycling, as a secondary resource economy, is one of the most economically valuable activities in the entire waste value chain. Recycling not only generates revenue for individuals, but also contributes to national economies. In addition, it promotes sustainable management through following circular principles to recover and regenerate materials. Both formal and informal actors within the waste sector can engage in recycling.

Informal

Informal labourers are often crucial in running waste management operations, particularly in lower-income countries. The services of informal workers often complement those of the formal waste sector, but at times play a major role. Many people are able to earn a living from performing informal waste-related activities, such as waste picking, sorting and recovery of recyclables, which are then sold to intermediaries for further recycling.

Informal workers often perform their duties with lower technical means and limited or no safety equipment, receiving low remuneration. It is not uncommon for informal workers to have to carry segregated waste on foot with bundles strapped to their backs, or to transport it using wagons, bicycles or private cars.

Upcycling, which is turning waste into new products or finding innovative ways to recycle materials, can contribute to a cleaner environment and provide financial independence for communities. Such opportunities are available throughout the waste sector and there is a clear trend showing that a growing number of social entrepreneurs are looking at waste as a resource. These activities often start as informal and on a small scale but can grow into a business recognized within the formal sector.

Gender and waste management

Over the past few years, academics and practitioners have paid increasing attention to the issue of gender in waste management, which has highlighted a myriad of ways in which waste production and management are not gender neutral, either in concept or in practice (UNEP 2016; International Environment Technology Centre [IETC] 2015; UNEP 2015).[6] Existing gender inequalities, responsibilities and roles shape the position of waste in social and economic systems, which is inevitable to a certain extent, as social and institutional structures are formed by social constraints such as gender norms. It would be unreasonable to image that the waste sector would be separate from gender attitudes and perspectives that shape all other socially constructed activities and economic sectors.

This study contributes to and builds on the growing literature on gender and waste by mapping the many gender-related aspects of waste in Bhutan, Mongolia and Nepal, including:

- waste-related livelihoods, both formal and informal
- impacts of the formalization and professionalization of waste management
- exposure to waste-related health risks
- perceptions and views of what constitutes waste
- preferences about waste handling and management
- assumptions and attitudes about the nature of "women's" and "men's" jobs.

Mapping the gendered nature of waste management has an important cascade effect that expands policy prospects and approaches, pointing them in directions that could enhance gender equality in the waste sector through introducing goals, which in turn, could produce a ripple effect into broader social domains.

Recycling in Bhutan. Photo by Ieva Rucevska.

Although each country's waste management practices are linked to broader gender relations and policies, specific actors and presumptions construct the sector's profile in terms of gender. Within the informal waste economy, studies show that women are often limited to lower-income tasks, such as waste picking, sweeping and waste separation, whereas men are able to assume positions of higher authority, dealing with the buying and reselling of recyclables for example (Dias and Ogando 2015; Dias and Fernandes 2012; Horn 2010; Beall 1997; Huysman 1994). When informal or voluntary waste-related activities become formalized with pay, men often engage in the work, thereby displacing women (IETC 2015; UNEP 2015). Throughout the formal waste economy, women are typically excluded from higher-income, decision-making and policymaking positions (Nzeadibe and Adama 2015; Samson 2003), indicating that gender norms and opportunities clearly shape people's livelihood options within the sector (Dias and Ogando 2015; Horn 2010; Beall 1997; Huysman 1994). Health impacts and safety needs also differ between women, men and children, since the labour involved in formal and informal waste management and task handling is differentiated by both gender and age, thus exposing these populations to different health risks (Amugsi et al. 2016; IETC 2015; Thomas-Hope 2015; McAllister et al. 2014; Loan and Thu 2003).

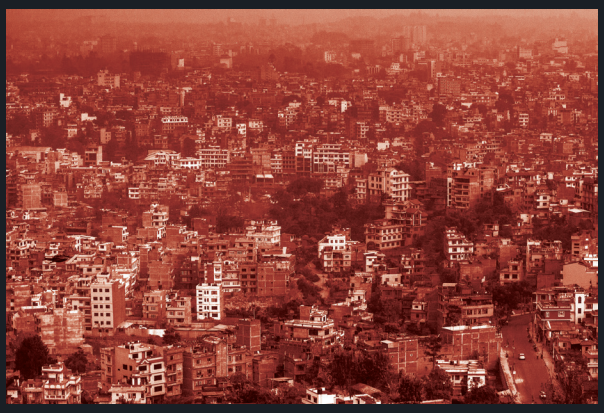
At the household level, several studies demonstrate how women tend to be responsible for care and maintenance activities, which also extend to managing household waste (UNEP 2015; Gani et al. 2012; Fredericks 2008; Poswa 2004). In many places this responsibility also falls on women in public spaces, putting them at the centre of community cleanliness (Macawile and Su 2009; Fredericks 2008; Gonzenbach and Coad 2007; Huong 2003). In many societies, men and women have different perceptions of what is considered waste, which can influence preferences for waste management services (IETC 2015). Such findings underscore the need to consider households' social and economic aspects when planning waste management systems that provide services, as well as how these intersect with the neighbourhoods and cities in which they are located (Beall 1997). Unfortunately, the participation of women at the policy and governance level, and in planning and decision-making activities, remains low in most places in the world.

The past few decades have seen a rise in the formation of cooperatives, movements and initiatives working on waste management in the informal sector, some of which also focus on gender. Many of these are run by, and for, workers directly engaged the sector, such as Solid Waste Collection and Handling (SWaCH), a cooperative of self-

employed waste pickers in Pune and Pimpri-Chinchwad, India. Emerging from a trade union of waste pickers formed in 1993, SWaCH has evolved into a door-to-door pick-up service, working in close collaboration with the municipality (Solid Waste Collection and Handling [SWaCH] n.d.). Another Indian company representing waste pickers is Hasiru Dala, which has secured stable income and legal recognition for thousands of waste pickers in Bangalore, providing them with identity cards, skills training and access to financial and health services (Hasiru Dala 2015). In Latin America, the Gender and Waste project, launched by Women in Informal Employment: Globalizing and Organizing (WIEGO), the Women's Research Center (NEPEM), the Federal University of Minas Gerais (UFMG) and the Latin American and Caribbean Recyclers Network (Red LACRE), has been working to increase the political and economic empowerment of female waste pickers (Women in Informal Employment: Globalizing and Organizing [WIEGO] 2018). The project is focused on equality and respect among men and women waste pickers, and aims to increase the efficiency of waste management. Based on field lessons from the project, a toolkit for teachers, researchers and practitioners was published in 2017 (Dias and Ogando 2017). Another publication focused on gender mainstreaming in waste sectors across Latin America is the guidebook "Gender and Recycling: Tools for Project Design and Implementation" (Regional Initiative for Inclusive Recycling [IRR] 2013). This toolkit was developed to provide guidance on incorporating gender perspectives in projects that aim to integrate informal workers into the recycling value chain.

Garbage collection in Bhutan. Photo by Tina Schoolmeester.

Ulaanbaatar, Mongolia. Photo by iStock/LHKPhotography.



Kathmandu, Nepal. Photo by iStock/DKart.

Thimphu, Bhutan. Photo by iStock/Kateryna Mashkevych.

PART 2

Country analyses

The Governments of Bhutan, Mongolia and Nepal all have constitutional and national legal commitments to gender inclusion and equality. All three have ratified the global Convention on the Elimination of All Forms of Discrimination against Women and are committed to the SDGs. In addition, all three governments are signatories to the Paris Agreement, which is the central treaty within the United Nations Framework Convention on Climate Change (UNFCCC), and have developed (intended) Nationally Determined Contributions (NDCs) for GHG emissions and mitigation targets. Each country has included the waste sector in its NDC, even though waste contributes little to their total climate change emissions.

Mongolia 21 Nepal 41 Bhutan 57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Mongolia

Country context

Mongolia is a landlocked country in north-eastern Asia, bordered by Russia to the north and China to the south. With a population of just over 3 million in 2017 (Karev and Chhetri 2018), which is 1.78 people per km^2, Mongolia is one of the most sparsely populated countries in the world. In the last two decades, the country has experienced strong rural-to-urban migration: the capital, Ulaanbaatar, is now home to around half of the country's total population. In this position as a primate city, Ulaanbaatar tops the urban hierarchy and has an outsized cultural, demographic and economic presence and influence. In primate cities typically, and Ulaanbaatar specifically, household waste problems are more severe and significant than in other settlements. Migration solutions and policies developed for primate cities will therefore set the standards for the whole country.

Climate change context

Mongolia's ecosystems and ways of life are highly threatened by climate change. Changes already evident include an increase of 2.1˚C in average temperature between 1940 and 2008, increased dust storms, shifts in precipitation patterns, which have decreased in winter months and increased in summer months, desertification and erratic extremes in winter temperatures.[7]

Mongolia is a minor contributor to global climate change, with its total GHG emissions representing around 0.02 per cent of global emissions. As regards its per capita carbon emissions, however, Mongolia is above the global average, which is largely due it its coal-based energy sector, energy-intensive extractive industries and animal-based agriculture sector.[8] The energy sector contributes 50 per cent of Mongolia's emissions, while agriculture contributes 49 per cent. The waste sector is a minor contributor, accounting for just 0.7 per cent of Mongolia's total emissions in 2010, which is predicted to drop slightly to 0.6 per cent by 2030.

The Mongolian Government has ratified the Paris Agreement and established Intended Nationally Determined Contribution (INDC) commitments to reduce its GHG emissions by 14 per cent compared with a business-as-usual scenario by 2030.Nearly all reductions in emissions are planned to come from the energy sector.

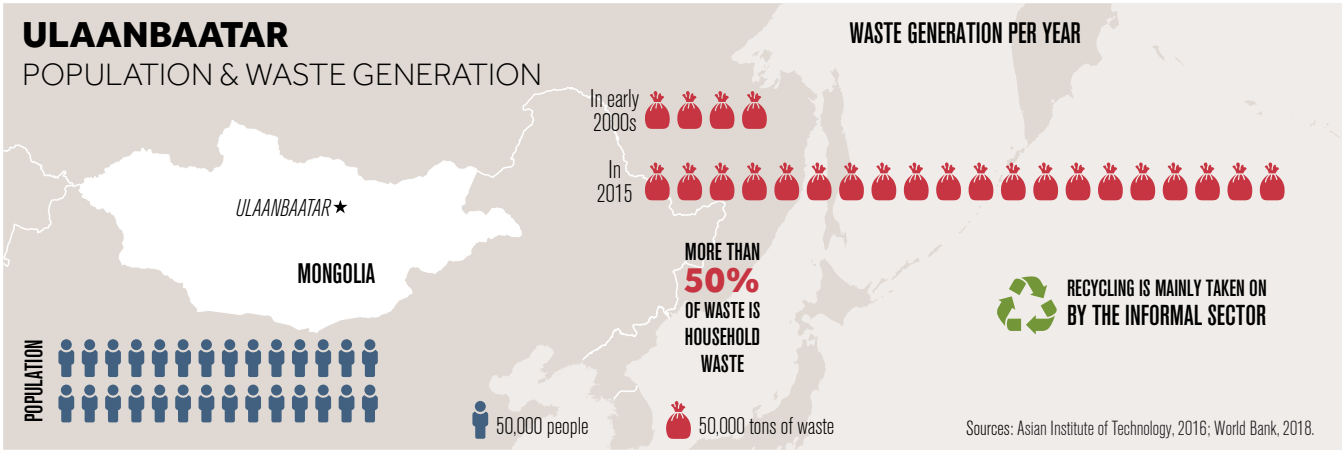


Figure 2.

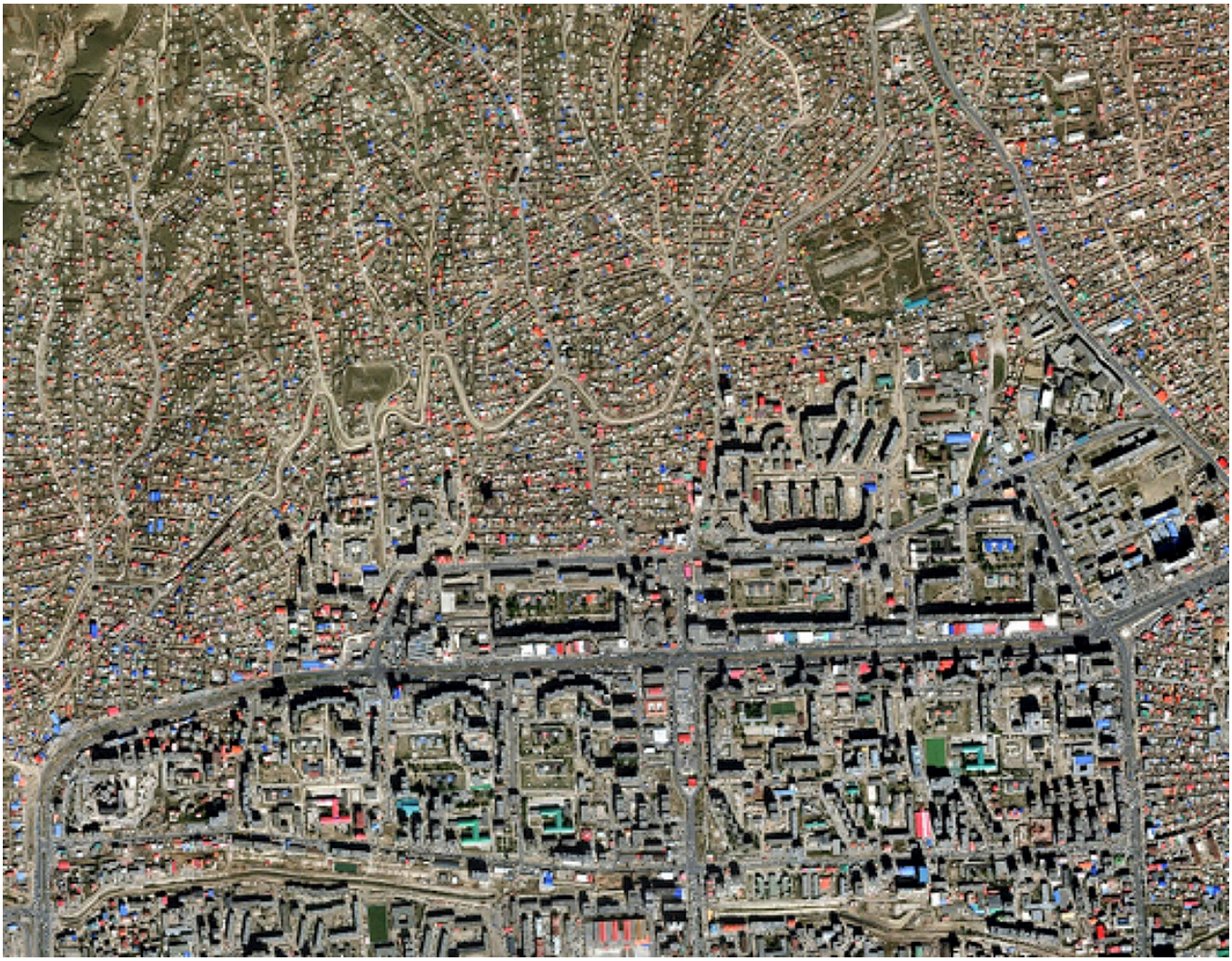


Figure 3. Satellite image of north-west Ulaanbaatar. Satellite images show the stark division between Ulaanbaatar's ger area (top) and apartment buildings (bottom). Source: Google Earth Version 7.3.2.5491. 30 September 2018. Ulaanbatar, Mongolia. 47°55'40.30"N, 106°52'26.63"E. Digital Globe (2018).

The new law on energy and renewable energy aims to increase the share of renewable energy in total primary energy sources to 30 per cent by 2030. Renewable energy targets have been set in two primary policy and legal documents: first, the Green Development Policy, adopted in 2014, which set the goal of increasing Mongolia's share of renewable energy used in total energy production to 20 per cent by 2020 and 30 per cent by 2030, and second, the State Policy on Energy 2015–2030, approved by parliament in 2015, which outlined short- and medium-term development scenarios and set a similar goal of increasing the contribution of renewable energy to the country's total installed power-generation capacity to 20 per cent by 2023 and 30 per cent by 2030.

In Mongolia's INDC, mitigation of waste sector emissions is mentioned only as an additional action, with respect to the "development of a waste management plan, including recycling, waste-to-energy, and best management practices".[9] No commitments were made in terms of gender, nor did any take a gender perspective.

Waste context

The effectiveness and challenges of waste management in Ulaanbaatar vary depending on area and season. Around 40 per cent of Ulaanbaatar's population lives in apartment buildings, while the remaining 60 per cent lives in ger districts surrounding the city centre.[10] In ger districts, the main types of dwelling are gers, which are Mongolian portable tents traditionally used by nomadic herders, and detached houses, built by those living in them.

In 2011, most of the 40,000 people migrating to Ulaanbaatar settled in ger areas, a pattern that is expected to continue and which poses major challenges for urban planning and specifically the waste management sector (Asian Institute of Technology 2016). Most parts of the ger districts do not have electricity and are not connected to many services, including sewerage systems. Poor road infrastructure (unpaved, narrow, steep roads and paths that are icy in winter) makes it challenging for waste companies to

Informal recycling site in the outskirts of Ulaanbaatar, 2018. There is no formal recycling collection system or large-scale processing facility in Ulaanbaatar. A few private recycling companies have established collection points and recycling facilities such as this informal site. Many of these sites are adjacent to the city's landfills, which makes it easier for landfill pickers to sell their goods. Pickers are paid in cash for their goods at recycling centres, which is a much better situation that at construction sites or at many private companies, where there are often delays (and fraudulent practices) in receiving payments. Overall, pickers can make more money than street sweepers, but being on the landfill is a dirty and dangerous job that has a considerably lower social status. Photo by Joni Seager.

A waste chute in an older apartment building in Ulaanbaatar. Photos by Joni Seager.

Photo by Joni Seager.

Waste snapshot, Ulaanbaatar

There is no comprehensive database on waste in Ulaanbaatar and statistics vary widely depending on the source. However, a snapshot of the most recent data show:

- As of 2015, Ulaanbaatar generates about 1 million tons of waste a year. This is a sharp increase from the early 2000s when only around 200,000 tons of waste were generated per year (Asian Institute of Technology 2016).
- Household waste accounts for about 50 per cent of Ulaanbaatar's total waste stream.
- A 2018 study on waste composition (see Figures 4 and 5) found that the largest waste components in Ulaanbaatar are food waste and ash, which echoes the findings of other reports.
- Consumption in Ulaanbaatar is rapidly rising as Mongolia becomes more globalized and part of global circuits of capital, following the explosive increase in transnational extractive and mining industries. Several individuals interviewed for this study reported that an increase in waste is seen as a sign of affluence and were of the perspective that consuming more is better, and that littering is a right and expression of freedom.
- There are three authorized open-waste dumpsites (landfills) in Ulaanbaatar, as well as four illegal dumpsites that have been officially recorded (Asian Institute of Technology 2016). However, the actual number of illegal dumpsites is unknown, as many small, local, informal dumpsites have also been found in ravines and streambeds throughout ger districts.
- In Ulaanbaatar, there is no formal recycling collection system or large-scale processing facility, and all waste is therefore mixed. A few small private recycling companies have established collection points and facilities, and a considerable share of recyclables is shipped to China. In January 2018, the Chinese Government enacted global restrictions on plastic imports, which is problematic for Mongolian waste handlers and recyclers, as Mongolia has a limited domestic market for recyclables.

access these districts. Waste collection in ger districts therefore only takes place once or twice a month on average and does not always cover entire areas. The infrequent and somewhat unpredictable nature of the ger waste collection process is contributing to an illegal dumping problem.

Apartment buildings in Ulaanbaatar's city centre, in which 40 per cent of the population resides, have their own challenges. Most old buildings built during the Soviet era have convenient waste chutes on each floor, a feature that newer buildings tend to lack, which are typically built without an internal waste management plan. Rather, waste bins are

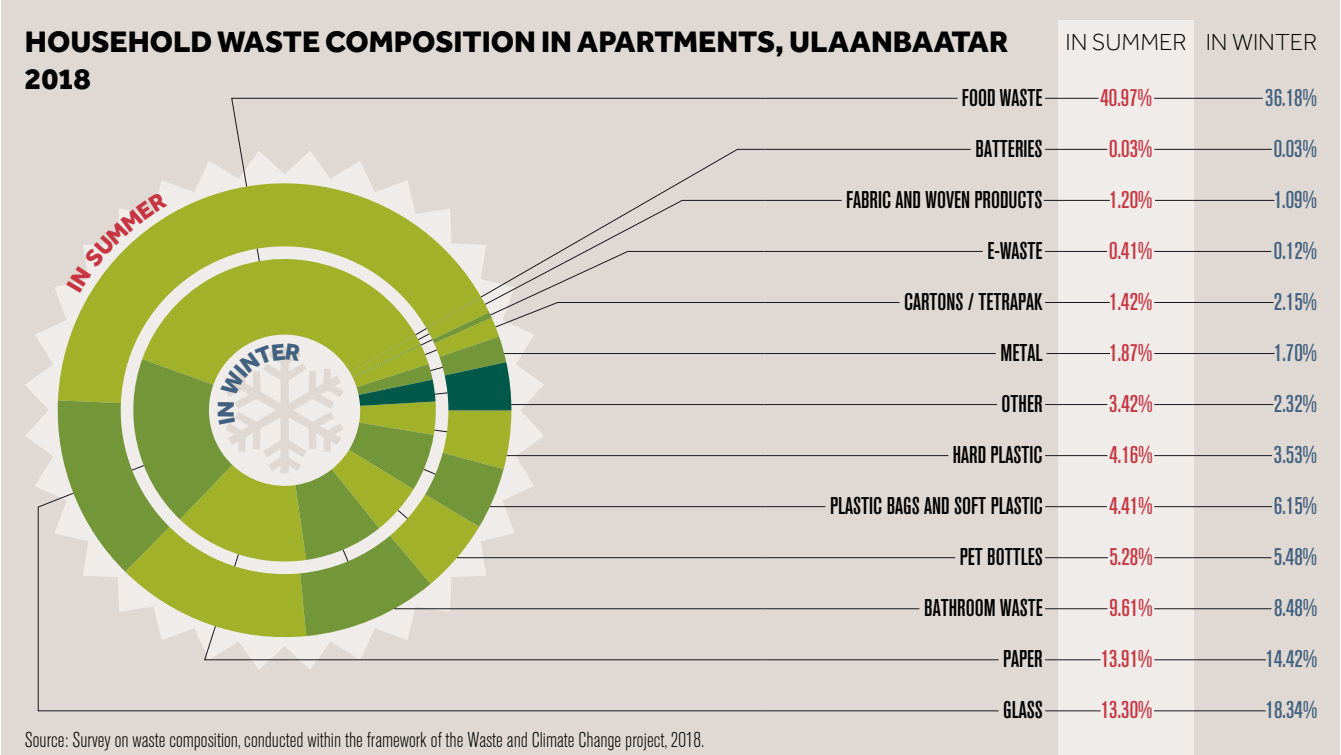


Figure 4

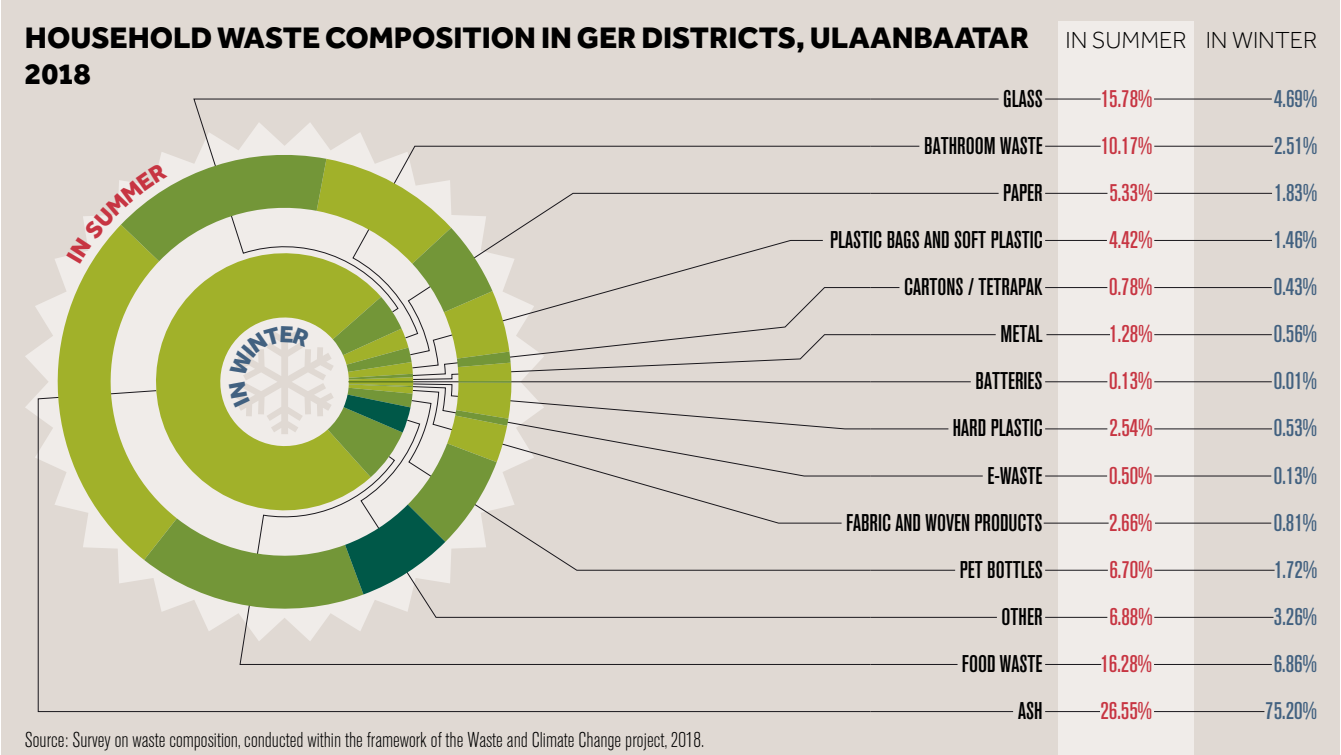


Figure 5

located at the entrance of these newer buildings, though they often overflow, which results in waste being dumped outside. Residents often complain that the waste smells and pickers and dogs have been known to search through it at night. Several reports observe that waste management is a low priority for most real estate developers.

Household waste production varies from season to season. In the winter, ger residents depend on coal for heating and cooking, which produces ash as the main type of waste. Ash is a significant waste issue, as it is heavy, non-recyclable and sometimes still hot when waste collection trucks arrive for collection. Figures 4 and 5 show Ulaanbaatar's waste distribution from households living in apartments and ger districts in both summer and winter months.

Due to its inhabitants' high reliance on coal burning, Ulaanbaatar tops global ranks as a city with severe air

Landfill pickers at the Tsagaan Davaa landfill, Ulaanbaatar 2018. Photo by Joni Seager,

Manager of Tsagaan Davaa landfill, Ulaanbaatar 2018. All of the managers of landfills are men. Photo by Joni Seager.

Tsagaan Davaa landfill, Ulaanbaatar, 2018. The second largest landfill in Ulaanbaatar, Tsagaan Davaa is in the north-east of the city next to a fringing ger district nearby a cemetery. Photo by Joni Seager.

pollution and has dangerously high levels of particulate matter during winter months (Edwards 2018).

A new waste law passed in 2017 shifts the responsibility for waste management and handling to waste producers and enables authorities to issue fines to households and individuals for illegal behaviour, such as waste dumping. District officials are currently awaiting the development of specific rules and policies to implement this law effectively. Mongolia's new waste law does not have a gender perspective.

The waste management sector in Ulaanbaatar is heavily subsidized. At present, a modest waste tax is collected through electricity bills that amounts to approximately US$ 1 per month per household. Some households in ger districts do not pay electricity bills as they are not connected to the network, and therefore do not pay the waste tax. Plans have been developed to change tax collection methods and to shift from a household fee to an individual fee in order to increase the waste management budget.

Private and public waste collection and transportation companies operate in the city, collecting and transporting waste from households and businesses to three main dumpsites in the city, including Tsagaan Davaa landfill. The cleaning of major streets and public spaces is organized by Ulaanbaatar TUK,[11] a public-owned company operational in the city, whereas the cleaning and collection of waste from smaller streets and roads is handled by district waste collection and transportation companies. Streets and public spaces are cleaned manually by street sweepers most of the time, who have limited tools to carry out their work, such as shovels, spades and small snow cleaning equipment..

Gender context

The Mongolian Government inscribes gender equality in its Constitution as well as in national law, specifically the 2011 Law of Mongolia on Promotion of Gender Equality. In 2016, the Government amended and passed the Law to Combat Domestic Violence, initially approved in 2004. These national instruments prohibit discrimination in political, economic, social and family spheres. At present, there are no gender laws specific to the waste sector and the 2017 waste law does not include a gender component.

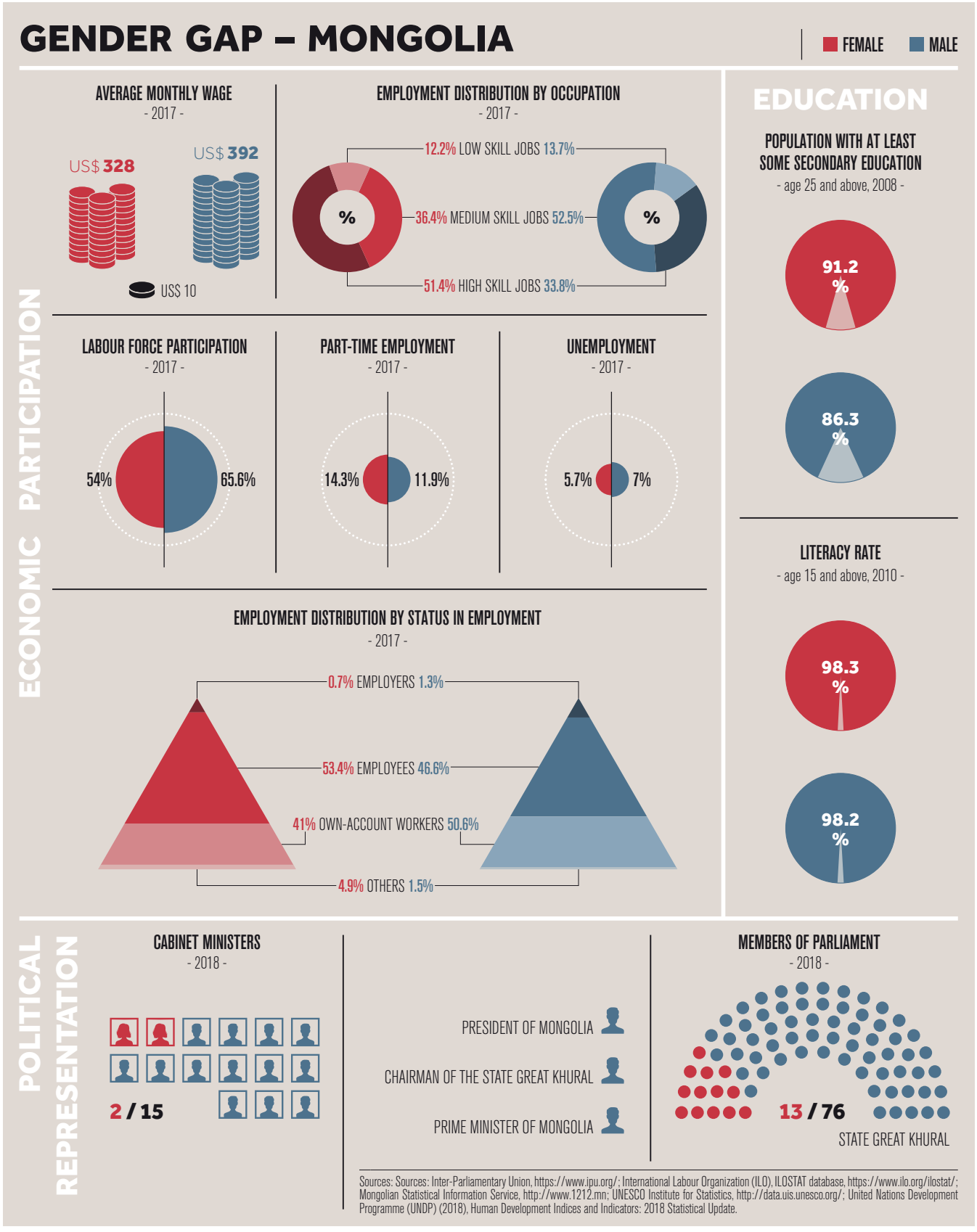


Figure 6

Mongolia is a signatory to all major international instruments pertaining to women's rights and gender equality, including the Convention on the Rights of the Child, the Convention on the Elimination of All Forms of Discrimination against Women and the Convention on the Political Rights of Women. The Government has also endorsed the 2030 Agenda and the SDGs, thereby implicitly embracing the SDG mandate to "leave no one behind". Furthermore, the Mongolia Sustainable Development Vision 2030, released in 2016, reiterates the Government's objective to ensure gender equality as part of its sustainable social development.

Many metrics measuring gender equality indicate that it is more advanced in Mongolia than in Bhutan and Nepal. Women in Mongolia are generally educated to a higher level and are proportionally more active in the workforce. Men have lower rates of participation in education, reflecting the perspective that men are workers and do not need an education to enter the manual labour sector. Despite their higher levels of education, women are paradoxically at a disadvantage, as they are unable to convert their education into higher income, as demonstrated by the persistently high unemployment rate of women with higher education and the earnings of those in work, which is often lower than men's earnings (Begzsuren and Aldar 2014). Although Mongolia ranked 58 out of 149 countries in the 2018 Global Gender Gap Index, it ranked 109 out of 149 for women's political empowerment (World Economic Forum [WEF] 2018).

Gender-based violence also remains high in Mongolia. According to the national study on gender-based violence conducted in 2017, 57.9 per cent of ever-partnered women have experienced one or more of forms of violent behaviour, including physical, sexual and emotional, economic or controlling, while 31.2 per cent have experienced physical and/or sexual violence in their lifetime (National Statistics Office of Mongolia [NSO] and United Nations Population Fund in Mongolia 2018).

The Social Institutions and Gender Index (SIGI) of the Organisation for Economic Co-operation and Development (OECD) measures the extent to which a country's social institutions and structures discriminate against women in broad terms, such as

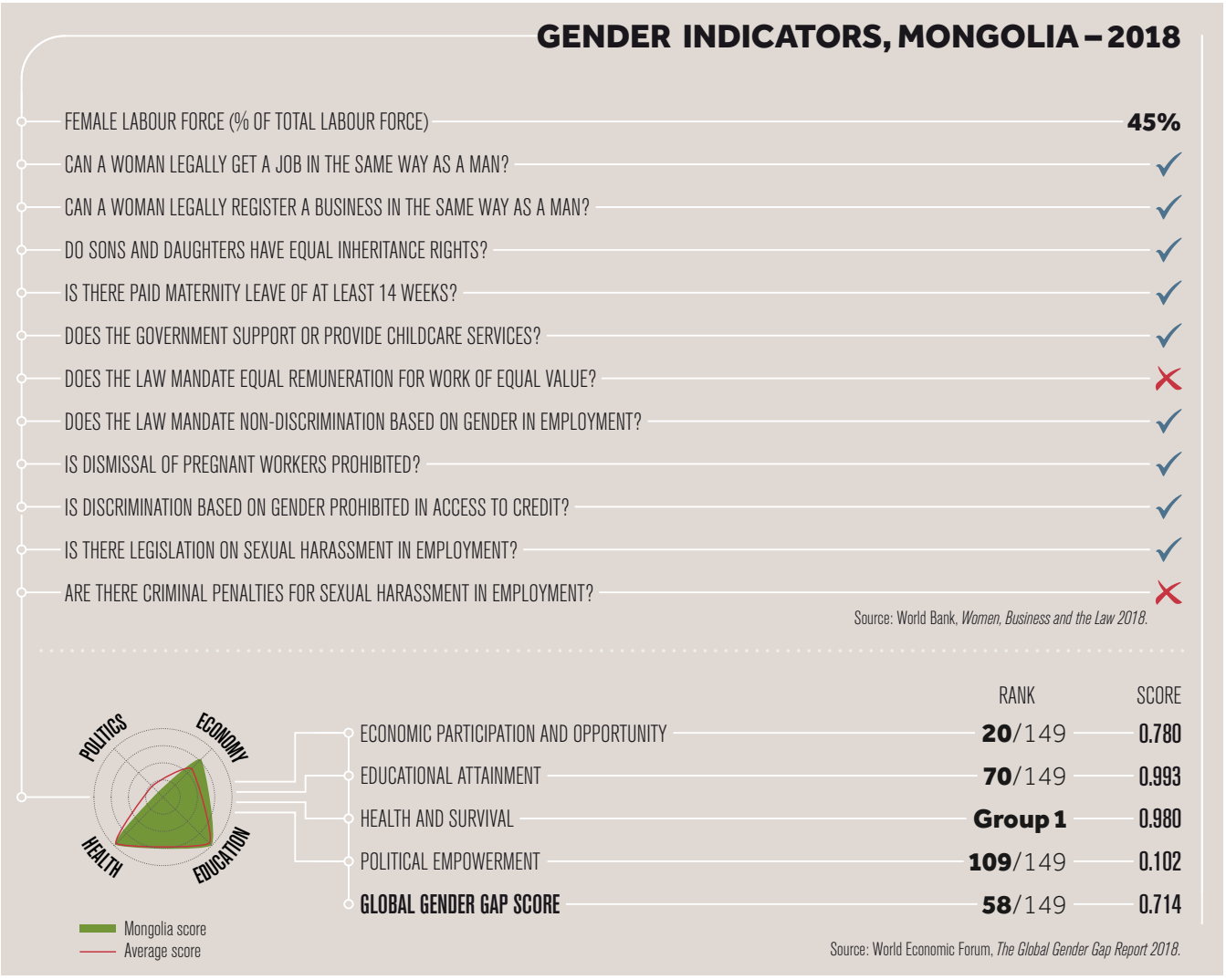


Figure 7

equality laws, institutional protection for equal access to resources, assets and employment, and protection from violence. In this index, Mongolia ranks as having "very low" levels of social institutional discrimination against women.

Gendered landscape of waste management in Ulaanbaatar

Households and communities

Given the State's relatively weak waste management capacities, much of the responsibility is devolved to the local, informal and voluntary spheres.

Despite the relative gender equality in Mongolia, women and men still occupy traditional roles. Field research conducted for this study show that overall, women are primarily responsible for carrying out the unpaid labour that maintains their household, including childcare and meal preparation. Cleaning domestic spaces, and therefore managing waste, also typically falls to women and is a role that places them at the heart of the household waste nexus.

The normative and traditional allocation of domestic labour to women was, in some cases, used as a reinforcing explanation as to why women should not participate in the formal waste sector.

> *"Women can't be truck drivers because it is dirty work. How would she cook for her family in the evening with dirty hands?"*
> – Public TUK office director responding to a question about whether women could be waste truck drivers.

Stakeholder snapshot

Households and communities

- Women are the household waste managers – men are seldom involved.
- Women are the community and volunteer waste managers – they organize community clean-up days and attend public meetings on waste (and other) issues.
- Women are mostly the heads of apartment councils (local associations for each building).

Policy and governance

- Men are largely in positions at the highest levels of city management responsible for overseeing waste management.
- Women are mostly social organizers known as "kheseg leaders" at the sub-district level (khoroos).

Operational levels

Formal

Formal sector laborers (waged)

- Until recently, women mostly took on the role of street sweepers. However, since the position became professionalized and the salaries increased, women have been losing these jobs.
- Only men work as waste collection truck drivers and loaders (usually one driver per truck plus one or two loaders).
- Only men work as landfill operators (at the three formal landfill sites).
- Men are mostly the managers of the private waste collection business that have contracts with the city.

Administration

- Men are mostly managers in the municipal departments responsible for overseeing waste management, as well as in the private waste collection businesses that have contracts with the city.

Small-scale enterprises

- Women run several of the private sector small-enterprise recycling operations, as well as "green art" companies.

Informal

Informal sector laborers (unwaged)

- Waste pickers at the landfills: no firm data are available, but reports indicate that most of the pickers are women. They are also mostly poor, recent rural-urban migrants, who live near or at the landfills.
- Street pickers are mostly men who also live on the streets.

Small-scale enterprises

- "Junk shops", where street pickers sell their recyclables, are almost exclusively run by men.

Ulaanbaatar. Photo by Joni Seager.

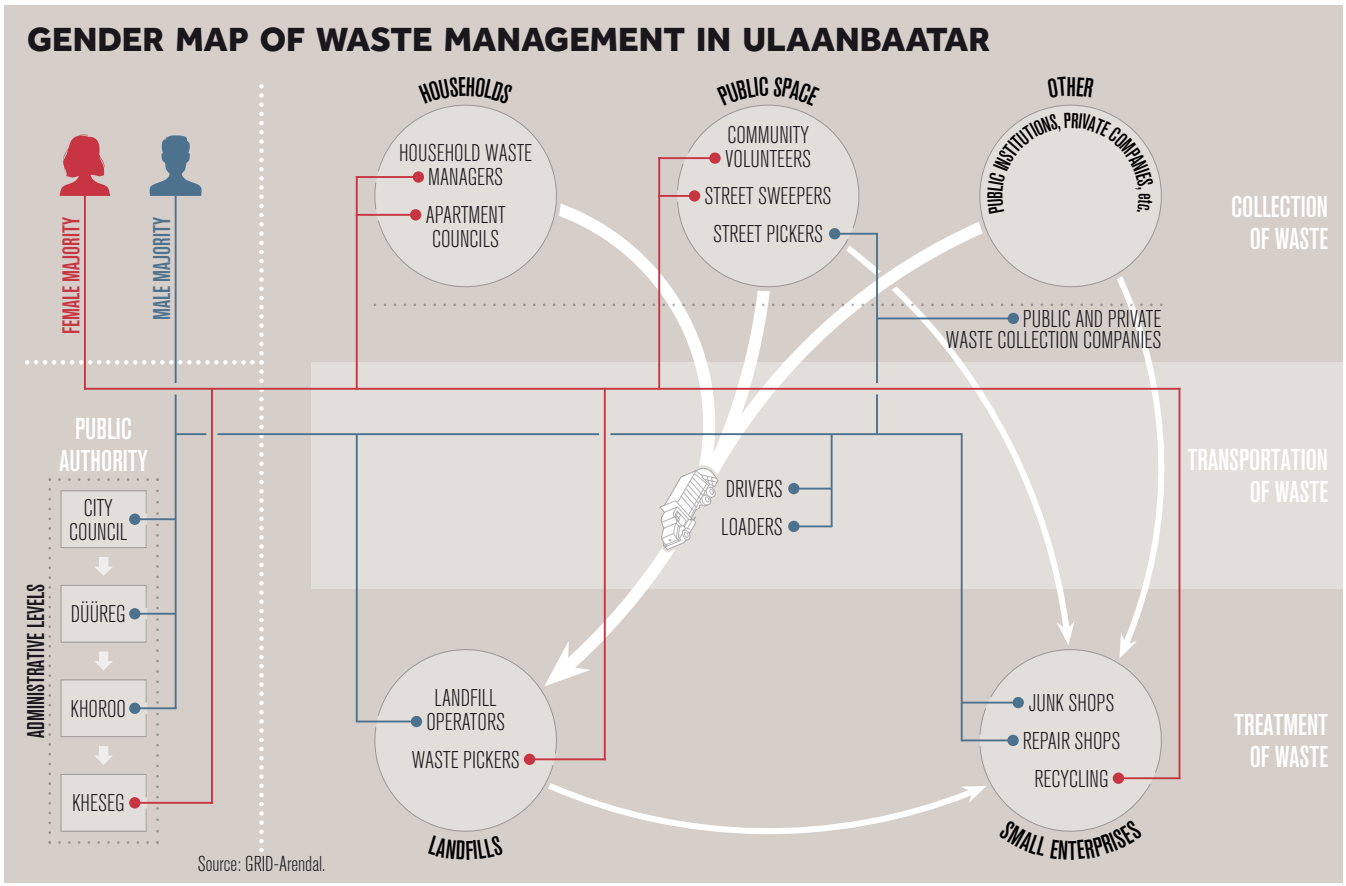


Figure 8. Note: The figure shows the relative authority of men and women with respect to the flow of waste in Ulaanbaatar. Women manage household waste, serve on apartment councils and volunteer as community waste managers, organizing community clean-up days and attending public meetings.

Although this observation about the women, waste and cleanliness nexus was offered by a male TUK office director, many other interviewees, both men and women, expressed similar opinions.

Women's traditional roles are not confined to their households and extend into the community, where they are largely responsible for participating in voluntary and informal activities, such as local clean-ups, neighbourhood association meetings and other related activities.

This gender configuration is not only resulting in time poverty among women,[12] but is also reinforcing negative stereotypes that are confining women to domestic and informal spheres. This in turn is alienating men from household, local and community issues, and their lack of knowledge on such issues means they are engaging less with the everyday well-being of their communities.

In ger districts, where waste needs to be brought directly to the waste collection trucks as they pass through on their routes, women tend to be mostly responsible for taking waste from the household, although some men are also involved in this task. Both men and women have been reported as saying that women need to remain at home (or were "mostly" the family member at home) when the waste is collected. This information is difficult to reconcile with other data indicating women's high rates of formal employment.

Policy and governance

Women's participation in political, administrative and economic leadership is much lower than that of men. Within national instruments, discrimination in political, economic, family and social spheres is prohibited, but there are no gender laws specific to the waste sector. At the highest levels of city management, men hold most managerial roles in the municipal departments responsible for overseeing waste management. However, women are more prominent in social organizer roles, specifically the position of "kheseg leader" at the sub-district level (khoroos). Although kheseg leaders are not formal civil service positions, the role involves working very closely with khoroo governors and staff to deliver public services to residents.

Operational level

Men typically assume the manual labour positions in Mongolia's waste sector, thereby reflecting assumptions about physical strength and men's social role in general. During the field research, interviewees often described men as workers who did not need an education to find

Tserenjav Sodnompil (pictured), a former school accountant, opened her own recycling facility in 2009. It is now one of the largest collection sites for recyclables in Ulaanbaatar. She views recycling as an important pillar of sustainability. Photos by Joni Seager.

work in the manual labour sectors. Schooling for girls and women, by contrast, was considered more necessary, due to the prevailing assumption that women need credentials to obtain work.

Street sweepers

In Ulaanbaatar, street sweeping is considered a good, stable job, although it can be somewhat dangerous, especially in the winter months. Street sweepers interviewed reported taking pride in their work and feeling that they contribute to the betterment of the city. Each street sweeper is responsible for around 800 m^2 and will typically pass the same area twice a day. The streets in central Ulaanbaatar are noticeably clean and litter free.

Street sweepers in Ulaanbaatar earn approximately MNT 650,000 per month (US$ 265) and are paid the same, regardless of gender. In comparison, the average monthly salary for all workers in Ulaanbaatar in the last two quarters of 2017 and first two quarters of 2018 was MNT 1,240,000 (US$ 466) for men, and MNT 1,006,000 (US$ 378) for women (Mongolian Statistical Information Service [MSIS] 2019).

Until recently, street sweeping was mostly carried out by women, though this started to change once the work was professionalized, offering higher wages, uniforms and better protective equipment. Young people are increasingly applying for this type of job, which is now less stigmatized. Since street sweeping is now a more prized position of employment, women are losing what was once their niche.

For example, in 2017, one private waste collection TUK company employed 44 women and 10 men as street sweepers. When their contract for street cleaning was sharply reduced in 2018, they dismissed 41 women and no men. When asked why the men were disproportionately retained, the TUK director stated that men did the best work, referring in particular to the cold weather and harsh conditions. However, this contradicted a later assertion made by the director that women cared more about cleanliness and were more conscientious workers.

The public waste collection offices in Ulaanbaatar employ 137 female sweepers and 142 male sweepers. Both women and men expressed the view that men were more careless about waste and threw it on the street, often out of car windows too, as if it was their right and an expression of their freedom.

Truck drivers and loaders

Truck driving and loading is easier in apartment districts than the ger districts, which have narrow, unpaved, hilly roads. Waste loading is dangerous and strenuous, especially in ger districts during the winter months when most of the waste is ash. Trucks assigned to ger routes tend to be open pickups without loading lifts. Loaders are provided with new gloves four times a month.

Overall, the category of "transportation drivers" is the most male-dominated occupation in Mongolia, with 93.6 per cent of the positions filled by men across all sectors (Begzsuren and Aldar 2014). Waste truck driving in Ulaanbaatar is almost exclusively carried out by men. A kheseg administrator reported that one woman worked in the district as a waste truck driver, which seemed to be the only case for all public and private waste management offices. During the Soviet period, more women were reportedly employed as waste truck drivers, perhaps as many as 30, though no data have confirmed this. The same is true of women loaders: in one public office of 112 loaders and drivers, there was only one female employee. The director of the Bayanzurkh district public waste collection office reported that they had received applications from women to be drivers, though no women had been hired in the positions yet.

During the field research, both men and women expressed stereotypical opinions regarding women and their ability to drive waste trucks or the desirability for women to drive them, such as:

- women are not supposed to drive (any vehicle)
- women are worse drivers than men
- women are unable to drive large or heavy vehicles
- women do not know how to drive large or heavy vehicles
- women should not drive large and heavy vehicles
- drivers sometimes have to assist with lifting the waste into the trucks, which is heavy work that women cannot or should not do
- truck driving is a man's world and women should not be working that closely with men
- waste collection is dirty work; it would be both unhygienic and inappropriate for women to go home after doing such work to prepare meals for the family.

Truck drivers and loaders are paid by distance and weight, but a typical wage is around MTN 1 million per month (US$ 408).

Waste collection companies

Men are in most of the managerial positions of the private waste collection businesses that have contracts with the city. In public waste collection companies, several women are directors. Overall in Mongolia, recent studies have found that employment sectors with the most women are often those with the lowest salaries and that are typically paid through state budgets (Begzsuren and Aldar 2014). This is also seen in the waste sector, as reflected in the staffing of a relatively small private waste collection company contracted by the city and a large public TUK (Table 1).

Table 1. a) Staffing of a small private waste collection company, Ulaanbaatar

Classification	*Men*	*Women*	*Total*
Administration	8	8	16
Drivers and loaders	18	0	18
Sweepers and greeners*	10	3	13
Clean-up assistants	5	4	9
Totals	*41*	*15*	*56*

b) Staffing of a large public TUK, Ulaanbaatar

Classification	*Men*	*Women*	*Total*
Management	4	0	4
Administration (budget, HR, logistics, secretaries)	8	30	35
Drivers, loaders and truck repairers	119	1	120
Sweepers and greeners*	189	184	373
Landfill managers, drivers and support admin	51	21	72
Totals	*371*	*236*	*604*

*greeners undertake minor landscaping services.
Source: Data provided by company managers, 2018

Truck waste collection being carried out in a ger district, Ulaanbaatar, 2018. Photo by Joni Seager.

An artist-entrepreneur making materials from recycled paper, Ulaanbaatar, 2018. Upcycling (turning waste into commercial products) is a growing entrepreneurial activity that also contributes to cleaner environments for communities. A growing number of social entrepreneurs are looking at waste as a resource. In Ulaanbaatar, crafts artisans (mostly women) working with waste materials have formed a loose association. Photos by Joni Seager.

Mongolia has gender focal points in all ministries, but at district waste management levels, there seems to be limited gender training and few materials available.

Landfill operators and supervisors

In the landfills, all of the operators are men, as are the on-site supervisors. Landfill operators provide safety guidelines and training for waste pickers and have expressed support for their pickers and concern about their futures if landfills are closed. However, there is also a certain level of discontent between landfill operators and informal pickers, for example, over illegal fires that pickers start on landfills to keep warm, which pose safety hazards.

Recyclers

The city of Ulaanbaatar does not provide recycling services, a gap that has provided opportunities for entrepreneurs. Small and medium-sized enterprises (SMEs) that recycle goods have emerged in recent years and women are seizing the opportunity to create their own well-paying jobs in the waste sector. Women are providing strong leadership in the recycling sector, based on their experience of dealing with waste in their households, engagement in environmental events, work in non-profit organizations and environmental awareness. Three female entrepreneurs from the recycling sector reported that they are well aware of the contribution that their businesses make to improve the environment and mitigate climate change.

The facility accepts different types of goods, including metal, used cans, plastic, glass bottles, paper and car batteries. She sells the recyclables to Chinese and some locally owned recycling companies. However, since China has banned waste imports, the price of some goods has plummeted. Plastic PET bottles for example, which she used to buy at MNT 400 (US$ 0.15) a kilo, are now bought for only MNT 200 (US$ 0.08), as there is not a good market for them.

Within the recycling SMEs surveyed, female entrepreneurs and managers mostly hire men to carry out labour-intensive work. Managers noted that a challenge for their businesses is access to recyclables, as they often need to rely on their own networks for material, due to the lack of recycling at the household level.

Upcycling (turning waste into commercial products) is a growing entrepreneurial activity that also contributes to cleaner environments for communities. A growing number of social entrepreneurs are looking at waste as a resource. In Ulaanbaatar, crafts artisans (mostly women) working with waste materials have formed a loose association.

Landfill pickers

Tsagaan Davaa, Ulaanbaatar's second largest landfill site, is in the north-east of the city next to a fringing ger district nearby a cemetery. Nearly 200 waste pickers (all adults) work at the landfill, around 60 per cent of whom are women. Landfill picking is a flexible, seasonal job, which is advantageous for many of the workers, as they often either have to work other jobs, take care of their parents or children or fulfil other responsibilities, which limits their availability. Until recently, most landfill pickers were women, though men are now participating in increasing numbers.

When a truck arrives at the site, the landfill coordinator directs the driver where to dump the waste. There is competition among the pickers to get to the truck's load so they can take as much recyclable waste as possible, which is mostly plastic and glass. Women tend to take less than men per day (1–2 bags compared with 2–3 bags, each 1 cm3), which may be because they are less aggressive or competitive in the physical scramble.

> Landfill pickers report that women can earn around MNT 10,000 per day (US$ 4) and men around MNT 30,000 per day (US$ 12).

At recycling centres, pickers are paid in cash for their goods. This is a much better situation than at construction sites or many private companies, where there are often delays (and fraudulent practices) in receiving payments. Overall, pickers can make more money than street sweepers, but being on the landfill is a dirty and dangerous job that has a considerably lower social status.

It is unclear what will happen to pickers as waste management processes modernize and what the options will be for replacing their income. Landfill operators (and pickers themselves) hope that pickers will be transitioned into work within the modernized landfills and recycling centres, offering no view as to whether they believe men or women would specifically be given the new jobs.

Summary of main findings and policy considerations

The following is a summary of main findings from the gender and waste country analysis for Mongolia, which includes relevant policy considerations. Further to this work, UNEP-IETC and the national partner organizations carried out stakeholder consultations. Annex 3 includes a list of elaborated policy implications summarized after the stakeholder consultations.

Households and communities

Households are key to the success of waste management systems. The ways in which waste is created and managed at the household level is key to the success of current waste management systems. It will therefore be an extremely important aspect of any proposed waste reforms. Households have tremendous capacity to reduce the flow of waste into the system both through its consumption practices and waste management and recycling strategies.

Policy considerations: Households, which currently have the least formal engagement with the waste sector's power and policy structures, may be a pivotal site for reform in the waste sector. One recommendation is to install waste segregation infrastructure in order to facilitate and promote household waste segregation at the source. Involving both men and women in household waste segregation should be encouraged. Knowledge about recycling and its importance should be provided to both women and men.

Women's role in household waste management is largely unacknowledged. To date, there have been no efforts to assess the value of sustainable services provided on an unpaid basis by women managing waste in households and communities. Notions of the waste sector's value chain are therefore underestimated and distorted.

Policy considerations: Methodologies should be developed to assess the value of sustainable services that are currently provided on an unpaid basis by women managing waste in households and communities. This will enable policies to be based on a more accurate view of the waste value chain.

Food waste composting has huge potential. Food waste is one of the largest components of household waste in Ulaanbaatar. There is no organized composting capacity.

Policy considerations: Providing infrastructure and education for household food composting could potentially reduce the amount of waste that the municipality has to collect and transport to landfills or that would be openly burned or dumped. Assuming no radical shifts in gender norms would enable women to have a more formalized, recognized role in waste recycling. Women could establish small-scale composting operations or use compost on soil in household gardens and public spaces.

Policy and Governance

There is limited or no gender training available at upper waste management administration levels. All ministries have gender focal points, but at the district and sub-district waste management levels there is limited, if any, training or materials provided.

Policy considerations: Gender mainstreaming can be strengthened if local level implementers are informed, trained and engaged as partners in the process. Training on gender mainstreaming for policymakers and other stakeholders in the waste sector should be organized. Waste management decision-making bodies should strive to have gender-balanced representation at all levels, including at the district and sub-district levels. Internal rules and regulations on gender mainstreaming should also be developed for stakeholders working in the sector. In addition, developing a policy for waste segregation that considers gender mainstreaming could create positive efforts to reduce waste and mainstream gender in the waste sector.

Limited structural support and citizens' behaviour are identified as key waste management challenges. Experts, city officials in the waste management sector and private and public managers at waste collecting companies identify the behaviour of Ulaanbaatar residents as their main waste-related challenge, citing issues such as illegal dumping. However, structural supports that would facilitate better behaviour, such as recycling facilities, regular and reliable waste collections and street-level waste bins, are largely lacking.

Policy considerations: The emphasis on poor behaviour shifts attention away from policies and policymakers, despite the fact that the behaviour may be closely linked with a limited access to utility services. Reviewing waste management services and infrastructures to identify key gaps and areas for improvement in the short term should be a priority. Raising public awareness and providing the public with information on the importance of gender mainstreaming in the waste sector via social media is also an effective measure that should be

encouraged. Training on waste segregation in work environments would also help employees learn how to separate waste both at work and at home.

The professionalization of some waste activities is displacing womenn. In recent years, the Ulaanbaatar municipal government has taken steps to professionalize street sweeping. Before becoming professionalized, street sweeping was mostly carried out by women, who are now being replaced by men. To date, this process of excluding women has been enacted in small, incremental, separate steps, which has made the made the overall consequences of this displacement largely invisible.

Policy considerations: Collecting gender-disaggregated data about the labour force throughout the waste sector will enable changes and trends, such as women's displacement, to become more visible. Commitments towards equal employment opportunities could be incentivized to prevent women being excluded from this increasingly desirable job sector.

There is a lack of gender-disaggregated data. In Mongolia, gender-disaggregated data are not collected in a systematic way for the waste sector.

Policy considerations: Collecting gender-disaggregated data at every level of waste management could support the development of evidence-based and gender-sensitive policies. For example, it would be useful for researchers and policymakers to conduct detailed studies at the household level that focus on waste and gender in order to determine a baseline.

Operational level

Consumption in Ulaanbaatar is rising rapidly as Mongolia becomes more globalized and integrated into global circuits of capital.

Policy considerationss: Since actors and stakeholders in the waste sector play different roles in creating and managing waste, engagement across the entire sector is the only path towards sustainable waste management.

Waste management is likely to become more reliant on high technology and engineering. Higher reliance on technology and engineering is likely to intensify the consequences of the gender disparities in those fields.

Policy considerations: While overall education rates for girls and women in Mongolia are equal to or even exceed that of boys and men, the STEM fields remain the most unbalanced educational domains as regards gender. Programmes to actively engage girls in STEM subjects will be needed. Current presumptions that boys and men do not need an education to obtain manual labour jobs will not be the case in modernizing waste sectors. Boys and men may need to be encouraged to pursue their education further through to higher education levels.

Modernization of the waste sector may threaten the livelihoods of actors who earn their living in the current informal waste sector. Although modernizing the waste sector can help mitigate health and climate change problems, it may threaten the livelihoods of actors engaged in the current informal sector, especially informal scrap and recycling dealers and landfill pickers.

Policy considerations: Taking a socioeconomic and gender perspective when modernizing waste practices may enable a transformation that "leaves no one behind" – a core SDG commitment. This means considering gender equality in staffing and appropriate training for individuals to transfer to upgraded systems.

Attitudes, stereotypes and perceptions about appropriate gender roles drive the gender and waste nexus in Mongolia (as elsewhere). For example, women are assigned traditional family-based roles, which is then used as an explanation for why they cannot take on certain jobs. Gender norms and biases are also repeatedly given as explanations as to why women should not be truck drivers.

Policy considerations: Encouraging changes in attitudes about gender and perceptions of appropriate feminine and masculine behaviour may be as important as technological or structural changes in reforming the waste sector in a gender-sensitive manner. Information-sharing and awareness-raising on gender mainstreaming should also be promoted widely.

Recycling seems to be a successful pathway for women to develop waste sector enterprises..

Policy considerations: It is worth exploring how some women have managed to succeed in the recycling sector as business owners and why this seems to be an exception compared with other waste professions. Such an assessment may lead to useful findings, which could be used to form policies for strengthening gender equality in the waste sector. For example, it might be that it is more socially acceptable for women to manage recycling businesses, since it could be considered an extension of their role in managing and segregating waste in the household. If this is proven to be the case, the recycling sector may be an entry point for women to gain formal, well-paid jobs in the waste sector.

Nepal

Country context

Nepal is a landlocked country of an estimated 30 million people, which has a moderately average annual population growth rate of around 1.35 per cent (World Population Review 2018). As an agricultural country, most of Nepal's population lives in rural mountainous and Terai areas (lowlands in southern Nepal), with only 19 per cent living in urban environments. Nepal struggles with a high rate of poverty and is experiencing high levels of rural-to-urban migration. The annual rate of urbanization is 3.08 per cent (Nepal and United Nations Development Programme [UNDP] 2016).

Some of the people migrating to cities find employment in the informal waste sector. The difference between urban and rural areas in earnings and expenditures that are directly linked to waste generation is large, as urban households consume around 1.7 times more than rural households (Nepal and UNDP 2016). With almost 1 million inhabitants, Kathmandu is Nepal's main city and is therefore the focus for the current state and major challenges of the country's waste sector.

Nepal faces considerable challenges with regards to waste management, including unorganized dumping and open burning, which are common methods used to solve increasing waste generation (Nepal, Ministry of Federal Affairs and General Administration [MoFAGA] 2018). These challenges were heightened following the earthquake in 2015, which generated around 14 million tons of additional waste. This is just one element of the disaster that stretched Nepal's overall capacity to address the extraordinary emergency (Nepal, MoFAGA 2018). The waste resulting from the earthquake remains an important issue.

Climate change context

Emissions from the waste sector accounted for 2.7 per cent of all national GHG in Nepal for 2000 to 2001 (Nepal, Ministry of Science, Technology and Environment 2014). The total emissions from the waste sector rose from 12 GgCH4 for the 2000¬–2001 period to 16.7 GgCH4 for the 2010–2011 period, an increase explained by population growth and a general increase in consumption (Nepal, Ministry of Science, Technology and Environment

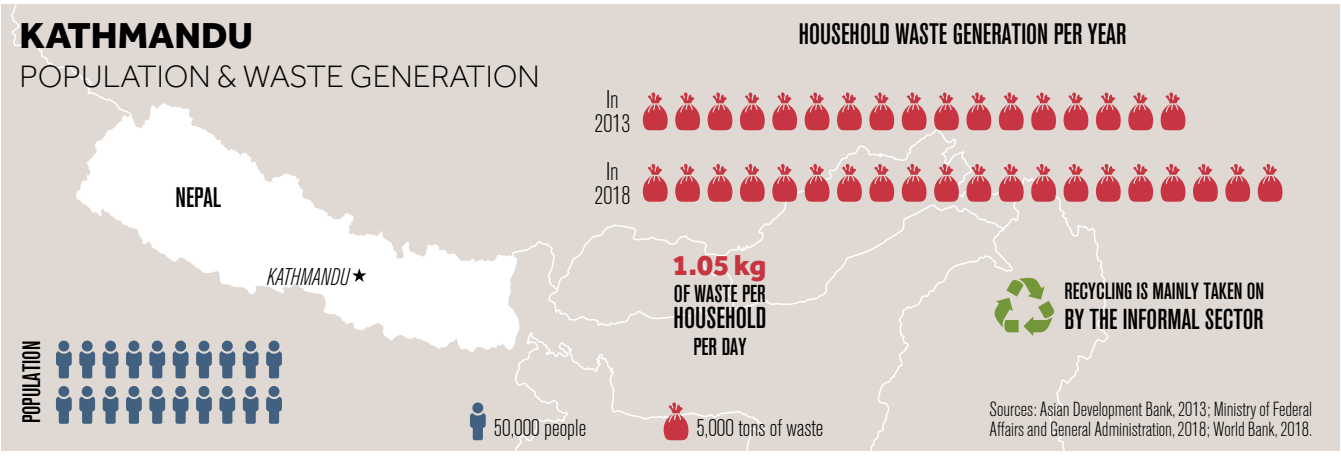


Figure 9

2014). This linear growth is predicted to continue in the absence of effective mitigation measures.

The waste sector also uses significant energy, particularly through transportation. Waste service vehicles in Kathmandu are old and consume fuel inefficiently. Transporting recyclables to sites also adds to the problem, as a significant amount of waste segregation also occurs once the recyclables have reached landfills, which means each drop-off and collection requires a trip to the landfill site.

Nepal has ratified the Paris Agreement and has set concrete commitments. Among the country's commitments are enhanced waste management through environmentally sound technologies and energy generation from waste (Nepal, Ministry of Population and Environment 2016).

Nepal's INDC commitments do not include gender, nor do they consider a gender perspective.

Waste context

The Government has developed a draft solid waste strategy which aims to steadily reduce its waste by diverting 60 per cent of total waste from landfills by 2030.[13] The long-term target is to produce zero waste. This strategy – to be adopted as a national strategy and action plan for 2020 to 2035 – is expected to help Nepal approach waste management holistically rather than through stand-alone activities, and to begin establishing the concept of a national circular economy.

Greenhouse gases are emitted from leachate at the Sisdole sanitary landfill. Many waste pickers work at the landfill and are exposed to high levels of pollution and the physically unsafe environment. The landfill was estimated to reach full capacity in 2008. Photo by Tina Schoolmeester.

Household waste collection services in Kathmandu occur twice a week, with household payments generally averaging less than US$ 3 per month in a regular period. During festival seasons, there may be some cost differences. This is a significant improvement compared with previous years, when rubbish was left out in the streets or dumped on riverbanks in the capital. These improvements are thanks to the involvement of the private sector. Waste collection organized by a whistle system has been largely

Waste snapshot, Kathmandu

The most recent waste management analysis comes from the baseline report prepared within the framework of the Waste and Climate Change project funded by the International Climate Initiative (IKI).

- Each household generates about 1.05 kg of waste per day.
- In 2018, 276.74 tons of solid household waste were generated per day in Kathmandu (Nepal, MoFAGA 2018), which is an increase from the amount reported in 2013 of 233.07 tons per day (Asian Development Bank 2013). This reflects the rising level of consumption – a continuing trend.
- Waste is collected in the capital, which is a significant improvement from the previous years. After collection, it is delivered to Sisdole sanitary landfill, which was due to be closed in 2008. Recently, the Government established a public–private partnership with a Nepalese–Finnish joint venture to facilitate waste management operations, including a new landfill.
- Most household waste generated is organic (78.6 per cent) and the rest is recyclable material – paper and cardboard (10.31 per cent), plastic (7.73 per cent), glass (1.31 per cent), metal (0.65 per cent), rubber and leather (0.13 per cent) and others (1.26 per cent) (Nepal, MoFAGA 2018).
- There is limited official segregation at the source and recycling is carried out entirely by the informal sector. Rates of recycling are unknown but are assumed to be high.

successful, with some exceptions, when collections fail to occur. The municipality and the private sector both manage waste. In 2014, the Government established a large public–private partnership with a Nepalese–Finnish joint venture. At present, the agreement involves the services of 65 waste management companies and is set to cover all municipalities throughout Kathmandu Valley.

In Kathmandu, household waste is currently collected and delivered to waste transfer stations, where informal waste pickers – working independently or together – select material of value. The remaining waste is then moved to the Sisdole sanitary landfill site, which is located 26 km from the city and remains operational, despite estimates suggesting that it would reach its capacity by 2008. The municipality manages the landfill, which receives deliveries of waste from open and covered trucks that travel over poor roads which deteriorate further in the monsoon season. The municipality operates 60 primary vehicles or small collection cars, as well as 20 secondary vehicles or large trucks that together make approximately 17 trips per day. Private companies that dispose waste collections at Sisdole landfill pay a tipping fee per truck.

Valuable materials are then segregated for a second time at the landfill site. As of yet, official recycling systems, both public and private, are lacking. Most recycling occurs in the informal sector and is carried out by scrap collectors, dealers and traders. The rate of recycling is high and there is immense competition for secondary resources. In addition to scouring the transfer station and landfill site for recyclable material, informal collectors carry out door-to-door collections.

The total population of Kathmandu is around 1 million people, a figure which is set to increase due to the country's economic conditions, which are encouraging rapid urban in-migration. Some of the new arrivals find work in the informal sector. In Kathmandu, the traditional family structure of different generations living together as one household is slowly changing to a smaller nuclear family of wife, husband and children. Improvements in waste services should therefore consider these demographic changes.

Social structures specific to Nepal set the context for its waste management practices. Ethnicity and caste affiliations determine particular roles in Nepalese society and have shaped the composition of waste occupations. Nepal's numerous ethnic groups and castes have divided the population into complex hierarchical social structures that are deeply connected to the Hindi values of purity and impurity (Dahal 2014). While the number of caste and ethnic groups varies according to different sources, there are three distinct caste-origin groups: i) caste-origin Hill groups, ii) caste-origin Terai groups, and iii) caste-origin Newar groups (Dahal 2014). Within these groups, people belong to different socioeconomic levels, high, middle or low, which determines their opportunities. Lower castes are often referred to as Dalits (the "untouchables") and have high representation in the informal waste sector. Although caste-based discrimination was abolished in 1963, the practice is deeply ingrained within the culture and has continued to shape occupational and cultural structures (Wagle 2017). However, this is beginning to change and thanks to the support of the recent legislation on caste-based discrimination,[14] the gap between castes is slowly narrowing. Many individuals, mostly from the Newar (low) Pode caste, work in the waste sector, though this situation is changing and there is increasing representation of other castes in the waste sector.

Gender context

Although the Constitution of Nepal (2015) clearly envisions an inclusive State and equality for all, gender inequality remains high and a large proportion of the Nepalese population continues to face discrimination. In response,

Young woman picking up recyclables at a transfer station. An interview with her co-worker revealed that a picker manages to collect about 50-60 kg plastic and 20 -30 kg of textile a day. Photo by Ieva Rucevska.

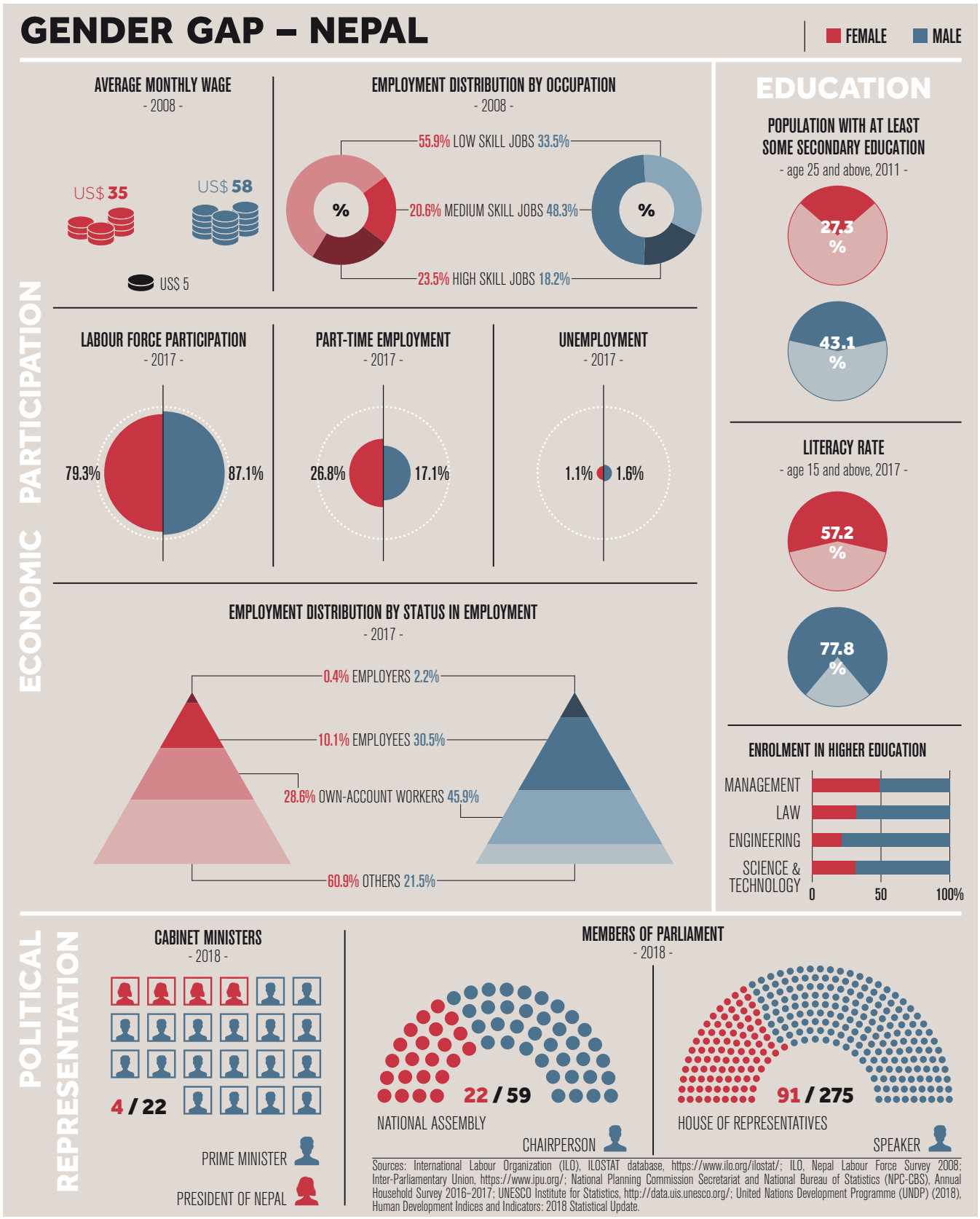


Figure 10

the International Development Partners Group has set up the Gender Equality and Social Inclusion (GESI) Working Group, which aims to ensure the coordinated collective support of the Nepalese Government. So far, seven major ministries including those on agriculture, education, forests, health, local and urban development (which includes waste), and water and sanitation have accepted the policy and guidelines (Gender Equality and Social Inclusion [GESI] Working Group 2017). Specially trained staff or dedicated units established in those ministries monitor results.

Nepal is party to the Convention on the Elimination of All Forms of Discrimination against Women and supports the SDGs.

Woman weighing segregated scrap plastic at a transfer station. Around 35 waste picking jobs have been given exclusively to young women. At the transfer station, the pickers work seven days a week and are paid at the end of each month. Men oversee their work and monitor their performance. Photo by Tina Schoolmeester.

A scrap yard in Kathmandu. Photo by Ieva Rucevska.

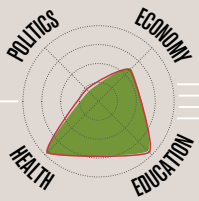
Recently adapted domestic regulations[15] address the equality of all citizens and the Government is developing a national gender equality policy that is expected to cover health, employment, education and social security (Nepal, Ministry of Women, Children and Senior Citizens 2018). In waste-related legislation, only the Solid Waste Management Act (2011) calls for a gender balance on the Solid Waste Management Council, which is the body that formulates solid waste policy.

Nepal has a high number of incidents of gender-based violence (Karev and Chhetri 2018). Reported cases of domestic violence are sharply increasing and totalled 9,398 cases in 2015/2016 (International Federation of Red Cross and Red Crescent Societies [IFRC] 2017). A study of the International Labour Office indicates that a high number of violations occur at workplaces in Nepal. Data on gender-based violence in the waste sector are not available. However, since such violence occurs

GENDER INDICATORS, NEPAL – 2018

FEMALE LABOUR FORCE (% OF TOTAL LABOUR FORCE)	**52%**
CAN A WOMAN LEGALLY GET A JOB IN THE SAME WAY AS A MAN?	✓
CAN A WOMAN LEGALLY REGISTER A BUSINESS IN THE SAME WAY AS A MAN?	✓
DO SONS AND DAUGHTERS HAVE EQUAL INHERITANCE RIGHTS?	✗
IS THERE PAID MATERNITY LEAVE OF AT LEAST 14 WEEKS?	✗
DOES THE GOVERNMENT SUPPORT OR PROVIDE CHILDCARE SERVICES?	✗
DOES THE LAW MANDATE EQUAL REMUNERATION FOR WORK OF EQUAL VALUE?	✗
DOES THE LAW MANDATE NON-DISCRIMINATION BASED ON GENDER IN EMPLOYMENT?	✗
IS DISMISSAL OF PREGNANT WORKERS PROHIBITED?	✗
IS DISCRIMINATION BASED ON GENDER PROHIBITED IN ACCESS TO CREDIT?	✗
IS THERE LEGISLATION ON SEXUAL HARASSMENT IN EMPLOYMENT?	✓
ARE THERE CRIMINAL PENALTIES FOR SEXUAL HARASSMENT IN EMPLOYMENT?	✓

Source: World Bank, *Women, Business and the Law 2018.*



	RANK	SCORE
ECONOMIC PARTICIPATION AND OPPORTUNITY	**110**/149	0.608
EDUCATIONAL ATTAINMENT	**123**/149	0.926
HEALTH AND SURVIVAL	**128**/149	0.966
POLITICAL EMPOWERMENT	**66**/149	0.185
GLOBAL GENDER GAP SCORE	**105**/149	0.671

Source: World Economic Forum, *The Global Gender Gap Report 2018.*

Figure 11

partly as a result of gender-associated normative roles not being fulfilled, it can be assumed that the violence is present in both domestic and professional waste sector operations.

The gendered landscape of waste management in Kathmandu

The waste sector includes different stakeholder groups, which are all equally important to sound waste management. Figure 12 shows the relative domains of the primary authority of men and women with respect to the flow of waste in Kathmandu.

Households and communities

Households and communities are principal stakeholders in solid waste management and their participation is of vital importance if Nepal is to meet its waste reduction targets. Despite this, households in Kathmandu are rarely given formal recognition in terms of waste management and they do not feel part of the waste management system. In Nepal, women have traditional domestic roles and responsibilities and largely carry out household and community waste activities.

Women also perform most unpaid household labour as part of their domestic role. National surveys show that the number of female-headed households is growing, often as a result of male outmigration. In addition, women head more households in urban environments than in rural areas, where waste generation is lower (Nepal and UNDP 2016). These findings, together with the observations of the field investigation, confirm that women overall hold more responsibility for waste management at home, especially since it often ties in with their other domestic responsibilities. For example, women usually bear the primary responsibility for cooking, therefore making them the principal managers of organic food waste. Some households compost their organic waste, though the scale of this practice is difficult to estimate.

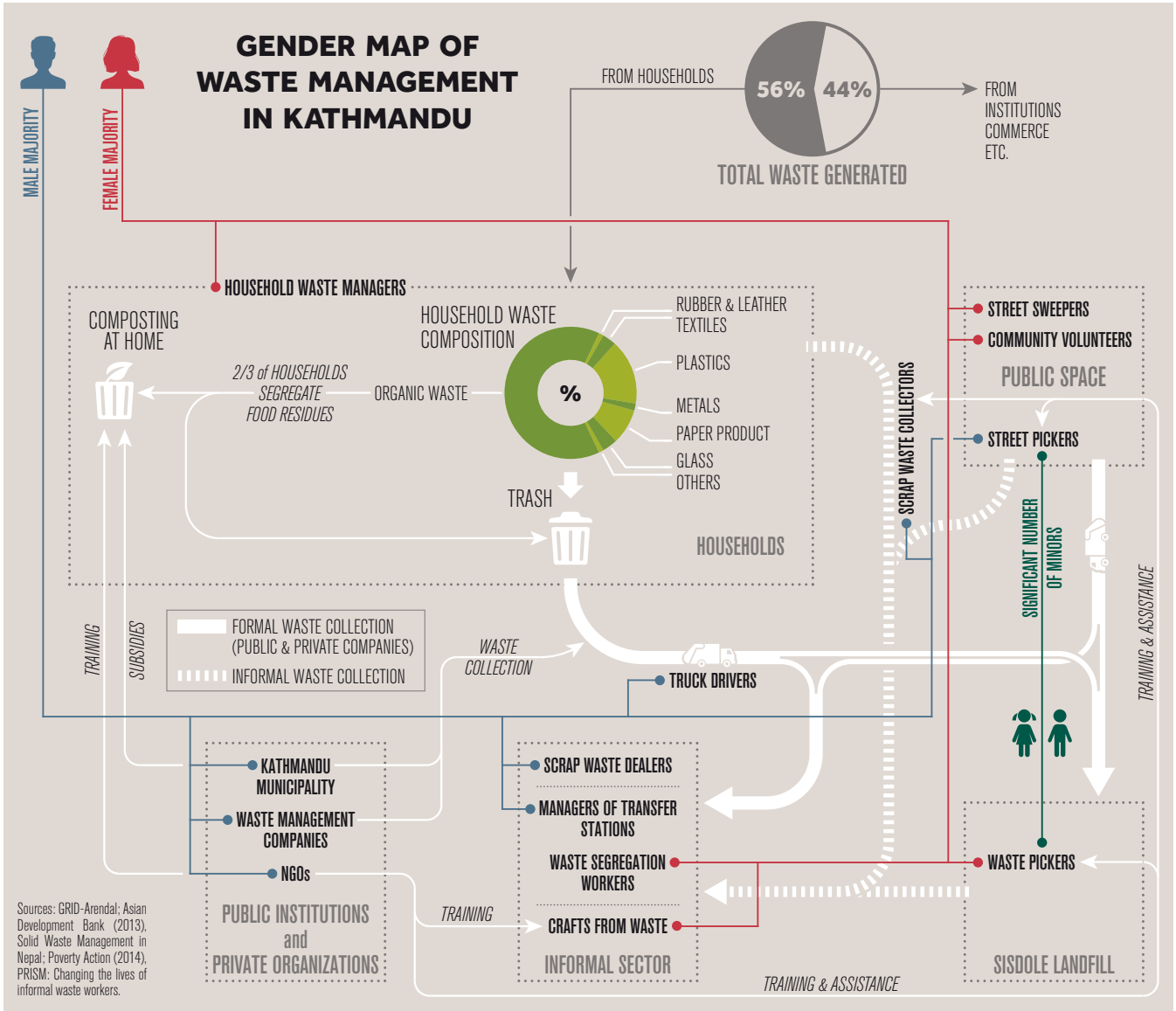


Figure 12

Stakeholder snapshot

Households and communities

- Women are often responsible for cooking and are also the main household waste managers.
- Women are more active in community initiatives.
- Women are more open to waste management initiatives, such as composting.

Policy and governance

- Men are largely in high decision-making positions at the national and municipal levels.
- Women's participation at the political, administrative and economic leadership levels is limited.

Operational levels

Formal

Formal sector laborers (waged)

- Women collect money for waste services.
- Women mostly fill the role of street sweeper.
- Men are exclusively truck drivers, loaders and mechanical maintenance workers.
- Men monitor and oversee the landfill and are landfill operators.

Administration

- Managers, advisors, supervisors and other similar positions are mostly filled by men.

Small-scale enterprises

- Small-scale enterprises, such as composting, are mostly taken on by women.
- Crafts from waste materials are mostly created by women.

Informal

Informal sector laborers (unwaged)

- Waste collectors by bicycle are exclusively Indian men.
- Waste pickers at landfills tend to be women.
- Waste pickers at the transfer station are predominantly women.

Small-scale enterprises

- Scrap dealers that sell goods from street pickers are run by men.

A recent waste minimization project in Kathmandu offered training and provided 8,000 subsidized compost bins to households. Although the available data are not disaggregated by gender, the general observation was that women were the principal target group and participants of the project.

> *"Women are more efficient."*
> – Municipality representative talking about participation in community-based training.

Several non-governmental organizations (NGOs) have promoted composting among households. The Federation of Women Entrepreneurs' Associations of Nepal has trained about 1,000 individuals (men and women) on a specific organic decomposition method known as vermicomposting. According to the federation, most trainees were women. As the result of the training, 25 women and 10 men were encouraged to start their own vermicomposting enterprises.

Women's responsibilities also extend into the public sphere, where they are active in community initiatives. The Nepal Pollution and Control Environment Management Centre, a non-profit organization, provides capacity-building and training for community leaders and has implemented various pilot projects. The training varies from simple awareness-raising about waste disposal to waste segregation practices and composting. Some of the centre's work is aimed solely at women, since women are more willing to carry out such practices than men.

Voluntary household waste segregation is well under way in Kathmandu Valley and is mainly stimulated by reimbursement schemes. Door-to-door scrap waste collectors account for about 41 per cent of the total recyclables collected (Luitel and Khanal 2010).[16] This huge contribution of household waste in Nepal's recycling efforts, driven by informal workers, could be an incentive for the Government to recognize and/or formalize the informal sector's contribution towards achieving the national target of zero waste.

A recurring problem in Kathmandu is the mixing of hazardous household waste, such as batteries, domestic chemicals and mercury-containing goods with other non-hazardous waste. The awareness of these waste streams remains low among most people, though there are insufficient data available to establish whether women are more exposed to hazardous wastes

Managers at their scrap yard in Kathmandu where PET bottles get collected and baled before exporting for recycling in India. They employ three young boys to bale the bottles. Photo by Tina Schoolmeester.

at home. Such exposure increases in the later stages of the recycling process, particularly in cases when rudimentary recycling methods are used.

Policy and governance

In Nepal, women's participation in political, administrative and economic leadership is limited. According to the International Labour Organization (ILO), women are employed in only 18.8 per cent of legislator, senior official and managerial roles at the national level, compared with 81.2 per cent for men (WEF 2018). Men are more dominant in the waste sector, especially at high decision-making levels in both the public and private sectors, with women tending to occupy the lower paid supporting positions.

Waste-related legislation in Nepal makes minimal reference to women's participation. The main domestic legal document for the waste sector is the Solid Waste Management Act of 2011. Gender considerations are only mentioned in terms of the balance (number of members) in some positions of the Solid Waste Management Council, which is the body responsible for formulating solid waste policy.

Waste management was and still is a significant challenge in Nepal. At present, landfills are at maximum capacity and dumping practices have become dangerous, signalling the need for immediate change. In principle, the Government is committed to finding solutions to the growing waste problem. However, in practice, the allocation of resources does not align with its efforts.

Despite Nepal's waste management ambitions, Kathmandu has recently experienced budgetary cuts, reducing the budget for waste services from 35.9 per cent of total budget allocations in 2016–2017 to 22.4 per cent in 2017–2018 (Nepal, MoFAGA 2018). Meeting the country's waste goals will likely involve moving from manual to mechanized work, recognizing and/or formalizing the informal sector and finding land for composting and transfer stations, all of which require governmental support..

Operational level

Waste collection companies

Big changes in waste management are expected in Kathmandu Valley following the new arrangement with the Nepalese–Finnish joint venture, NepWaste, which will provide door-to-door waste collection services, street sweeping, riverbank clean-ups, recycling services and final disposal management. NepWaste, which is managed by four male senior managers and

a staff of mostly male supervisors, is building a waste management scheme for the next 20 years, after which it will hand operations over to the Government.

> *"There is a lot of potential if waste management is viewed as a proper business."*
> – NepWaste operations director on starting the first public–private partnership initiative.

The 65 waste management companies that are currently operating independently in Kathmandu Valley will come under the supervision of NepWaste. Few women are in decision-making roles at these companies. Nepsemyak Sewa, a private company providing waste collection, transportation and waste disposal services to 40,000 houses in Kathmandu, is just one example of the gender-imbalance within a company's managerial and administrative positions (Figure 12).

Manual Labourers

Nepal's waste management practices are labour-intensive and require hard manual work, though at present, only rudimentary technical equipment is used. Socioeconomic status, gender and basic working conditions determine access to jobs in the waste sector, both the formal and informal sectors. Caste, poverty, education and gender, among other factors, prevent individuals from participating in a wide range of jobs, with labour heavily divided and polarized according to gender and nationality in Nepal. Comprehensive research is lacking, but field observations carried out in Kathmandu revealed that drivers, waste collectors, mechanical maintenance workers, landfill operators, sweepers and door-to-door money collectors for waste services are the most gender polarized positions.

Men are exclusively the drivers of vehicles, including light waste collection transport, such as mini-trucks or tractors, as well as heavy vehicles, in both the public and private sectors. This is due to two primary reasons: the traditional nature of the role (e.g. the work is too hard for women) and the level of education (e.g. women's limited access to driving licences and their participation in vocational education). Men are also employed more than women in other related positions, such as mechanical maintenance and waste loading.

The gender-disaggregated data from a private waste management company suggest that their street sweepers are exclusively women. However, the data from Kathmandu municipality show that both genders can equally be employed in the position.

The Sisdole sanitary landfill is solely managed by men. The working conditions and pay of these landfill managers are better than the landfill's other labourers, as they are provided with shelter and basic furniture for resting, such as tables and chairs, whereas pickers for example, are exposed to sun or rain for the entire working day. However, in general, the landfill is an equally unsafe environment for all working there, both waste pickers and operators alike.

Household waste service fees are collected door-to-door on a monthly basis. Women usually perform this work, receiving a minimum salary. During many of the fieldwork interviews, women were described as being preferred money collectors because they were precise and accurate.

Informal waste pickers

Both men and women work as informal waste pickers, though bicycle waste collectors are exclusively Indian men. Informal waste workers operate in structured environments and self-organized geographical territories. An estimated 10,000–15,000 waste pickers work in Kathmandu Valley (Practical Action 2014). Some of the workers are more vulnerable than others. Waste pickers working independently in landfills or on bicycles appear to be the most independent, as they set their own working hours and answer to no authority. Men, women, girls and boys all work on landfill sites. During the field visit to the Kathmandu landfill, it was observed that around 80 people mostly from the Janajati group (originating from the mountains) work on the landfill daily, around 50 of whom are women. Landfill pickers are increasingly vulnerable to the closure of the landfill and loss of their income, as has been the case in other countries (Thakur 2017).

In the waste sector, the most vulnerable workers may be the pickers directly employed by scrap dealers, most of whom are Indian men. These pickers are heavily supervised and under pressure to perform. During the field visit to Nepal, the solid waste transfer station of a private company was visited. At this station, the right to segregate recyclables was given to an Indian manager, who runs the business informally. There are around 35 waste picking jobs, all of which have been given to young women who are mostly from Limbu and Rai castes, belonging to middle and low caste groups. The waste pickers' wages at the station are between NPR 10,000–20,000 per month (US$ 90–180) and are paid at the end of each month. The pickers work seven days a week and in the event of any absence must report to the owner of the operation.

Most waste workplaces, particularly in the informal sector, are characterized by poor health, cleanliness and sanitation standards. Workers are routinely exposed to unhealthy and dangerous conditions, including direct contact with hazardous waste (e.g. medical waste mixed with household residues), sharp objects, toxic fumes and physical danger. The level of awareness of the unhealthy working conditions among workers appears to be low.

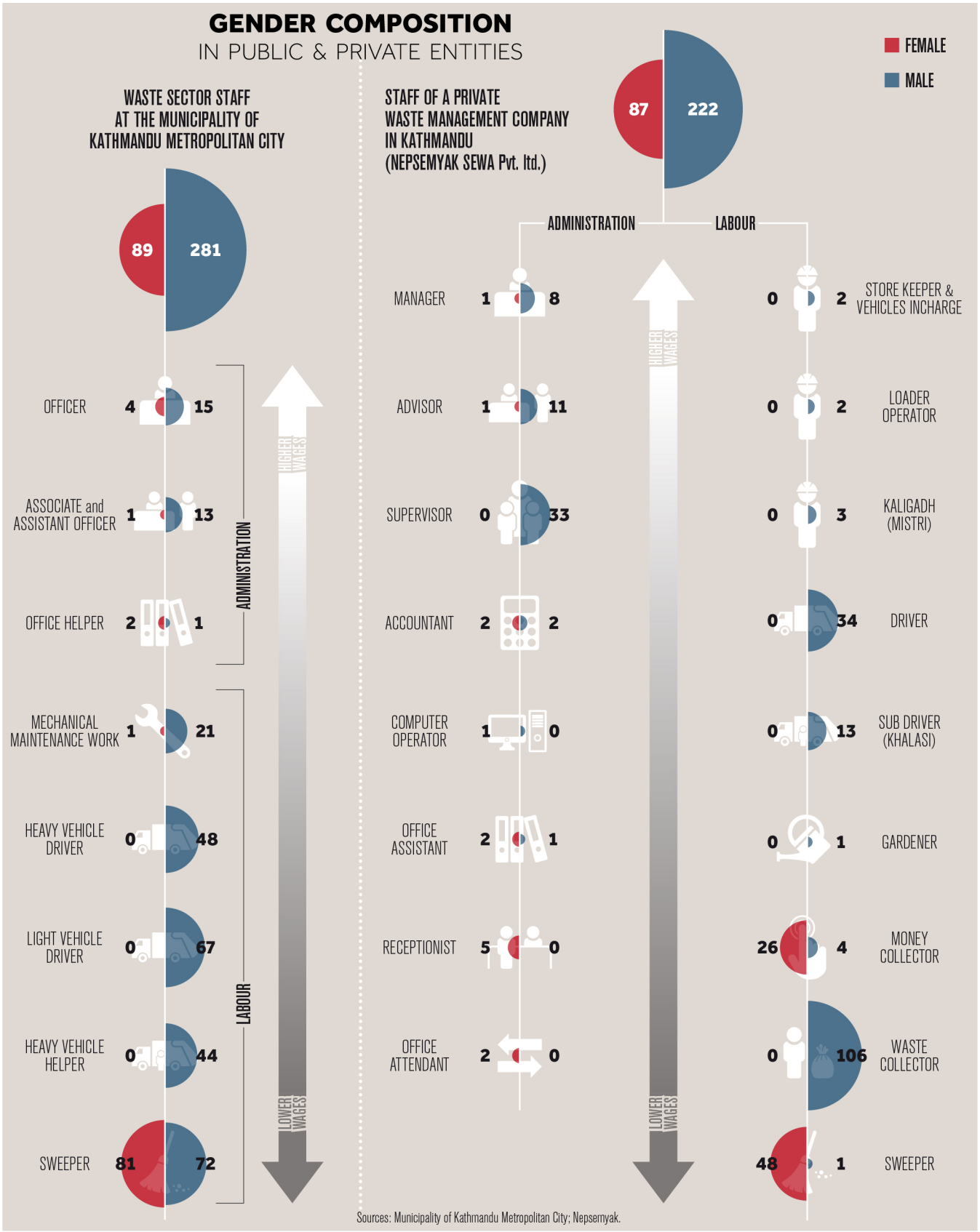


Figure 13

Social protection for informal sector workers has been low until recently. The new Labour Act, enacted in 2017, provides workers in both the formal and informal sectors, including the waste sector, with some social protection and benefits. Since this vitally important legal support has only been enacted recently, its practical application may take some time and will also require serious communication and monitoring efforts. The Contributions Based Social Security Act adopted in 2017 is another key legal framework for the informal sector, as it allows informal workers to be part of social security plans.

A scrap yard in Kathmandu. There are about 700-800 kabaddis or waste dealers assumed to be unregistered. Photo by Ieva Rucevska.

Recycling

Waste trade is a booming business. Nepal is familiar with recycling principles, both historically and culturally. While there are no official data about the rate of recycling in Nepal, it was observed that a lot of waste is in fact recycled, indicating that the percentage must be high. In Nepal, recycling mostly occurs through the informal waste sector. A study published by Kathmandu University estimates that Nepal recycles or reuses roughly 53 per cent of its scrap waste (Luitel and Khanal 2010). A large amount of scrap is exported, mainly to India. Since this activity is informal and managed by the Indian community, it creates economic loopholes as money flows out of the country.

> *"The value associated with waste is so lucrative."*
> – Young entrepreneur from Kathmandu.

It is difficult to identify how many scrap dealers operate in Kathmandu or Nepal in general. The Office of the Company Registrar has 152 scrap dealers on file in Nepal (Nepal, MoFAGA 2018). A 2010 study reported that there were 178 scrap shops in the country (Luitel and Khanal 2010), while the recent PRISM project reported that there are an estimated 700–800 unregistered kabadis or waste dealers. Most scrap yards belong to Indian men living in Nepal, whose families remain in India.

> *"You find a scrap yard every five minutes, similar to temples in Kathmandu."*
> – Young entrepreneur from Kathmandu.

The waste recycling business is also built on social stereotypes associated with the roles of men and women. An interview revealed that it is extremely unusual to find women in charge of recycling businesses. While there are many women involved in the waste sector, their role is more linked to upcycling rather than recycling businesses.

There is no existing analysis about the value chain in the waste trade system. Interviews conducted as field research only revealed that informal scrap dealing is a lucrative business, which at times is carried out by syndicates. Waste trading can be dangerous and have life-threatening risks, particularly in selected areas of Kathmandu, which may be a reason for women's limited involvement.

Before scrap reaches its final recycling destination, a minimum of four transactions are usually carried out between waste pickers, scrap collectors, scrap dealers and middlemen. This informal waste trading scheme inevitably creates large tax evasions throughout the value chain.

Summary of main findings and policy considerations

The following is a summary of main findings from the gender and waste country analysis for Nepal, which includes relevant policy considerations. Further to this work, UNEP-IETC and the national partner organizations carried out stakeholder consultations. Annex 4 includes a list of elaborated policy implications summarized after the stakeholder consultations.

Households and communities

Women are the main handlers of household waste management. At present, women take more prominent waste management roles at the household level in line with their traditional roles and responsibilities. This responsibility also extends to the public sphere, where women are more active in community initiatives. In addition, these roles are typically voluntary, unpaid or minimally compensated.

Policy considerations: The alienation of men and boys from domestic and community waste management is neither socially nor structurally healthy. These roles can be taught and communicated in schools or encouraged through social entrepreneurship activities. Initiatives to encourage social entrepreneurship schemes – for example, a small-scale financial activity that benefits society – for both men and women can provide incentives to engage men and boys in waste management at the community and household levels. This would also contribute to the recognition of women's unpaid work.

Segregation materials at the source contributes to recycling. Currently, there is limited official segregation at the source, but recyclables collected informally from households through door-to-door collection, which are then segregated at transfer stations and landfills contribute to a large share of the Nepal's recycled materials. This contribution could increase if basic official segregation is established for wet and dry waste at the source. Nepal is historically and culturally familiar with recycling principles, particularly when these concern glass, paper, metal and plastic.

Policy considerations: Policy initiatives can support current household contributions to recycling and recognize the importance of households in achieving the zero waste target. Recognizing households' role in waste management implies that women can be agents of change in performing basic source segregation functions. Household, community and larger composting schemes may be alternatives to organic waste landfills. These reforms require long-term and widespread awareness-raising campaigns.

Households are crucial in securing effective waste management systems. Although the involvement of households is essential throughout the entire waste management chain, households do not perceive themselves as part of the waste management system in Kathmandu. In general, there is good awareness of recyclables, though there is little awareness of household hazardous waste, such as batteries, domestic chemicals or mercury-containing goods.

Policy considerations: Households may be a crucial area for reform in waste management. Establishing early and good communication and participation mechanisms, such as involving local community members in the development of municipal waste management plans, may overcome this obstacle and increase household awareness and participation through the entire waste hierarchy. Such consultations should be attentive to including women as household representatives.

Policy and governance

The Government of Nepal has launched a zero waste strategy. The Government is planning to set the high-level target of diverting 60 per cent of waste from landfills by 2035 as part of its aim to ultimately reach zero waste. The national strategy and action plan for 2020 to 2035 will include concrete actions to reach these commitments. New structures are emerging in the waste sector based on public–private partnership principles.

Policy considerations: There is an opportunity to explicitly consider gender in national strategies and action plans, as well as to include provisions for gender mainstreaming and propose concrete targets to achieve gender equality in the sector. For example, quotas could be created for female managerial positions or employment processes could facilitate equal access to various jobs. Enforcement of existing anti-discrimination laws could also be strengthened.

The safety level of waste labourers remains very low in Nepal. Safety is linked to cultural stereotypes, which stigmatize waste labourers.

Policy considerations: The Government of Nepal should establish necessary policy frameworks for waste management in order to undertake practical implementation measures, such as safety guidelines, and should also oversee their implementation.

Gender-disaggregated data are not collected in a systematic way or are completely lacking in Nepal.

Policy considerations: Collecting gender-disaggregated data is necessary for implementing evidence-based, gender-sensitive policies in the waste sector, as well as for integrating gender-monitoring mechanisms into policies and activities. There is also a need to proceed with studies on gender-based discrimination and violence in the waste sector.

Operational level

The gender gap is high across the waste management sector in Nepal. The social stereotypes and roles of women and men, as well as cultural behaviours, such as the caste system, dictate access to opportunities, despite the inclusion of gender mainstreaming and gender balance in some guidelines and acts. Together, these factors distort the representation of women and men in the waste sector.

Policy considerations: Attitudinal changes with regards to gender norms and their intersectionality with caste are important as these will enable gender-sensitive reforms of the waste sector. Increased awareness of the gender and cultural stereotypes and roles and responsibilities within waste sector management is needed and should lead to more attractive and secure jobs in the sector. The operation level should introduce all possible measures to ensure safe and healthy work environments, such as organizational guidelines and code of conducts. Promotion of these standards and possibly improved work performances would improve the image of the entire sector.

Men dominate high-level administrative and decision-making positions in waste management in both the public and private sectors.

Policy considerations: Specific and targeted equal-opportunity labour practices, laws and training programmes would facilitate attitudinal and structural shifts, enabling women to be more involved in decision-making. There is also a need to encourage women to engage with businesses throughout the waste hierarchy (e.g. developing alternatives for plastic products).

The crucial role of the informal sector in waste management is largely unacknowledged. Waste recycling is largely a function of the informal sector throughout the entire value chain, with segregation carried out at transfer stations and landfills. Labourers in this sector are often marginalized and vulnerable to external factors, such as landfill closures. Moreover, workers are excluded from social protection schemes and health benefits. This differs to waste dealing, which is a lucrative business with immense economic loopholes in value chain operations.

Policy considerations: Recognizing and/or formalizing the informal sector may provide protection for vulnerable and marginalized informal labourers, particularly where mechanisms and tools are in place to enforce implementation regarding access to social protection and benefits. If the informal sector is formalized, it should be ensured that women do not lose their jobs as the profession becomes more highly recognized.

Bhutan

Country context

Bhutan is a small, mountainous and landlocked country bordering China to the north and India to the south, west and east. Bhutan is similar in size to Switzerland, with a land area of around 38,394 km^2. The population of Bhutan was estimated at 727,145 in 2017, of which 346,692 were female and 380,453 were male. Between 2005 and 2017, the population growth rate was 1.3 per cent per year (National Statistics Bureau [NSB] 2018). Bhutan remains one of the world's least developed countries and still depends heavily on foreign aid. As is the case in most developing countries, urbanization is rapidly increasing in Bhutan. The capital city Thimphu is the country's main centre and has the highest population density at 67.1 people per km^2. Almost 40 per cent of Bhutan's population lives in urban areas (NSB 2018). As of 2017, the primary reasons for people moving to urban areas in Bhutan are family moves, employment and education, in that order (NSB 2018), though reasons differ between men and women. For men, the main reason is employment, followed by family and then education, while for women, family is the main reason, followed by education and marriage. Employment does not come into the top three reasons for women moving from rural to urban areas (NSB 2018).

Climate change context

With more than 70 per cent of its land covered by forest, its low population density, limited industry and clean energy from hydropower, Bhutan is one of the greenest and most unspoiled countries in Asia. At present, Bhutan is considered carbon negative in terms of emissions and states in its INDC that it aims to remain carbon neutral by ensuring that its GHG emissions do not exceed the sink capacity of its forests.[17]

Due to the vulnerability of high-altitude glaciers and ice caps melting as a result of global warming, Bhutan is at risk of experiencing glacial lake flooding. Erratic rainfall over the years has also caused flash floods in some parts of the country, as well as droughts in other parts. The effects of global warming are putting Bhutan's ecosystems, economy and civilian health at risk.

With a steadily increasing population and rising urbanization, Bhutan has more and more cars, buildings and roads. Although the country's overall standard of living is rising, it is not immune to the ever-increasing offers of packaged food and consumerism. All of this

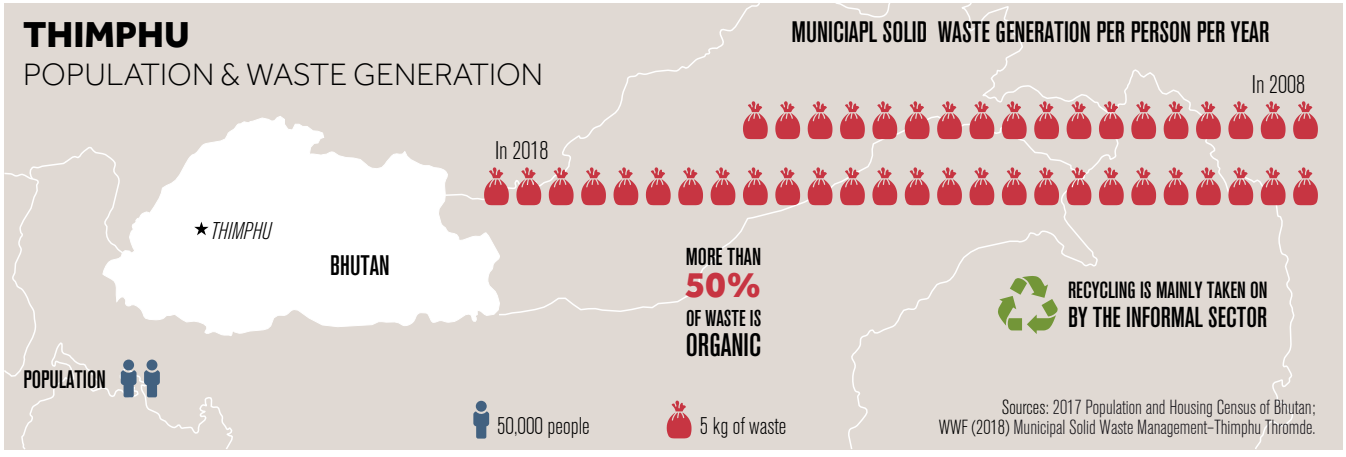


Figure 14

Figure 15. Urbanization and construction in Thimphu, January 2003 (top) and December 2017 (bottom). Source: Google Earth (screenshots).

is causing Bhutan's waste and emissions to steadily increase. Higher levels of waste will in turn contribute to more GHG emissions, mainly due to inefficient transportation, emissions from landfills and the burning of waste, which is the main waste handling procedure in rural areas. In urban areas, all non-valuable waste ends up in landfills, which over time become a major source of CH_4 emissions.

In addition, Bhutan's largely unplanned urban expansion could worsen the impact of climate hazards, and although air pollution and carbon emissions may not be a big local issue, pollutants may blow in from regions to the south and west of Bhutan (transboundary air pollution).

In its INDC commitments, Bhutan particularly mentions minimizing waste sector emissions, though these do

Prayer wheels made out of PET bottles on the hiking trail to Taktshang (one of the famous monasteries in Bhutan). Photo by Tina Schoolmeester.

not take a gender perspective. However, in Bhutan's most recent State of the Environment Report (Bhutan, National Environment Commission [NEC] 2016), the country embraces the idea that long-term climate change strategies should incorporate cross-cutting issues, such as gender and health.

Waste context

The Government of Bhutan acknowledges that waste is emerging as a major environmental issue (Bhutan, NEC 2016) and is taking several steps to solve its overall increase and ensure that different types of waste are handled adequately. The existing national legislation on waste management is the Waste Prevention and Management Act (2009), which was amended in 2016. Other important waste sector documents include the National Integrated Solid Waste Management (ISWM) Strategy (2014), National Environment Protection Act (2007), Water Act (2011) and Environmental Assessment Act (2000). Currently, ISWM is not being fully implemented, due to a lack of funding.

According to the ISWM Strategy, Bhutan is aiming to move towards zero waste by maximizing resource recovery to create sustainable waste management systems and protecting the country's unique natural ecology. Bhutan's INDC also mentions applying the zero waste concept and sustainable waste management practices, in particular through converting waste into resources and through improving the current waste management system and infrastructure. Bhutan's waste management, especially its waste collection practices, has improved significantly in recent years. However, not all efforts to improve the situation have been successful, such as a government ban on plastic in 1999, which was never enforced as it proved impossible to implement in shops and markets.

With growing urbanization and a more open attitude towards global trade, Bhutan has increased the volume of goods imported into the country, which along with the changing lifestyles and increased consumption of its citizens, has led to an increase in solid waste generation. The rapidly growing number of rural migrants in urban areas, with their rural habits and attitudes, are creating challenges on how best to handle the increasing waste.

Unsound management of waste is an emerging issue in Bhutan's largest cities – Thimphu and Phuntsoling

(Phuntsho et al. 2010). Surveys of the country's urban areas found that households generated between 0.6 kg and 1.2 kg of solid waste per day, with an average of 0.96 kg per household per day and 0.25 kg per person (Phuntsho et al. 2010). A 2018 study found that municipal solid waste in Thimphu had increased to 0.35 kg per person per day (World Wildlife Fund [WWF] Bhutan 2018). According to more recent data from Thimphu Thromde, 58.2 per cent of the municipal solid waste in Thimphu is organic. Other major categories include paper and cardboard (9.2 per cent), plastics (13 per cent), glass (2.2 per cent), textiles (7 per cent), leather and rubber (4.3 per cent), wood (2.1 per cent), disposable diapers (3.7 per cent), metals (0.2 per cent), and e-waste (0.2 per cent) (Thimphu Thromde 2018).

Statistics on other kinds of municipal solid waste are hard to locate, as municipal solid waste refers to all household waste in Bhutan. Office e-waste and medical waste are not included in this category because they are considered insignificant. Construction waste is also not counted.

The current population of Thimphu Thromde is around 115,000 people, a figure which is increasing as a result of the in-migration from rural areas (NSB 2018). The floating population, however, is quite high and variable – seasonal workers and tourists can raise the city's total to 150,000.

In Bhutan, citizens can only vote where they are registered, yet many individuals moving to urban areas, in particular Thimphu, do not officially register there. Some people have lived in Thimphu for over 20 years or are second-generation citizens, but still vote in their former villages. Only around 9,000 inhabitants in Thimphu are registered, which means that less than 10 per cent of the city's population votes in local elections. Thimphu's population therefore has little influence on decision-making, despite all being users of public services, such as water supply, waste collection and transportation.

The Environment Division of Thimphu Thromde is responsible for managing and monitoring waste in Thimphu. This department receives between 18 per cent and 25 per cent of the homeowner's tax, which produces an annual budget of about US$ 272,000. Thimphu Thromde employs around 100 people in waste services, most of whom are street sweepers. Although Thimphu Thromde has a few trucks, it outsources waste collection and transportation to two private companies, which costs around 87 per cent of the municipality's total budget. In recent years, waste collection has greatly improved in Thimphu.

The Government considers waste a societal problem and therefore provides incentives to public–private partnerships for waste management initiatives. These subcontractors receive the status of social entrepreneurs and are given better loans and benefits than private companies. Their task is to collect and segregate waste in Thimphu. Although these companies should not generate profits, they are permitted to sell valuables to buyers both inside the country and in India. Ideally, segregation should happen at transfer stations. Greener Way, a private waste management company, has recently established such a station. The leftovers or non-valuable material is transported to the city's landfill, where pickers recover anything else that is recyclable. At the time of researching, operations at the transfer station were only partly in place, with Greener Way sending their own waste pickers to the landfill two to three times a week.

One major positive aspect of waste collection in Thimphu is that wet and dry waste are segregated at the household level and collected separately. Some of the organic waste is taken to a compost pit, which has a noticeable effect on the landfill. There are plans for large-scale composting of organic waste from hotels and markets, and the Thimphu Thromde Office is educating people on how to compost at home.

Some paper, glass and plastic recycling occurs inside the country, for example, some glass bottles are reused, while some plastics are used for road construction. However, most other valuable scrap is sold to India through scrap dealers or private companies. Glass cannot be sent to India and there are no provisions for hazardous waste, so these usually end up at the landfill with other non-valuable waste. As of recently, construction waste is now sent to specific landfill sites, though unfortunately there are also many dumpsites for this waste. Medical waste should be treated in dedicated areas, yet some also ends up at the landfill. Household e-waste is still low, as people tend to still be using their first refrigerator, TV or computer, which are generally repaired and/or sold when they break down. Scrap dealers mainly sell their e-waste in India. E-waste from government offices is normally stored and auctioned, but there seems to be no control over where the waste goes; if scrap dealers buy it, they may opt to sell it in India.

An incomplete inventory from the landfill operator suggests that between 24 and 30 truck deliveries occur per day. According to Thimphu Thromde, about 58 per cent of the waste is dry and 42 per cent is wet. The Thimphu landfill at Memelakha has long exceeded its capacity and is facing problems with leaching and waste management.

The waste management system does not have enough collection trucks and the ones that are available are old,

inefficient and have dirty diesel engines that break down regularly. Replacement parts are hard to find.

The national and municipal level administrators acknowledge that waste management in Bhutan needs improvement and have expressed their willingness to do so. However, resources are often lacking and even if the urgency is high, an integrated plan and proper assessment are needed to ensure that measures are not stand-alone and do not have any adverse effects in the long-term.

National policymakers do not yet recognize waste as a resource, nor do they see it as a potential revenue stream, mainly because the volumes are too small. The municipal level recognizes waste as a resource mainly for the informal sector. So-called social entrepreneurs and scrap dealers understand the value of waste, but their earnings are unknown.

The streets of Thimphu are much cleaner now and less waste is visible in neighbourhoods. While this is positive, it is causing Thimphu's inhabitants to assume that waste generation is not a significant issue. This assumption, combined with the authorities' belief that there is little revenue to be earned within the waste sector, is contributing to a laissez-faire attitude towards both the informal sector and private waste companies.

Waste snapshot, Thimphu

The most recent analysis of waste management is summarized in the baseline study which was compiled within the framework of the Waste and Climate Change project, funded by the International Climate Initiative (IKI) (WWF Bhutan 2018). However, it should be noted that the baseline study concentrates on household waste. Information on all other municipal waste is mostly qualitative. Since there is no comprehensive database on waste available, the data are unreliable and are not disaggregated by gender.

- Municipal solid waste generation in Thimphu has increased, reaching 0.35 kg per person per day. More than half of this is organic waste.
- Thimphu generates around 40.3 tons of municipal solid waste per day.
- Waste collection has improved drastically in recent years because of outsourcing to private companies.
- Wet and dry waste are segregated at the source, though some becomes mixed at the landfill site as large-scale composting does not exist. Hazardous waste and some medical waste also end up at the landfill.
- Some composting takes place, but this could be increased.
- Construction waste is transported to a dedicated dumpsite.
- E-waste from households ends up in repair/second-hand shops or with scrap dealers. E-waste from government departments is auctioned – after it is sold, it is not clear where it ends up, but it is possibly sold in India.
- There are not enough vehicles to carry out more segregation at the source.
- There is increasingly more segregation at transfer stations before waste reaches the landfill.
- Thimphu landfill has long passed its maximum capacity.
- Private companies are mostly in charge of collection and segregation.
- Some recyclables are used inside Bhutan, others are sold in India.
- Scrap dealers are mostly in charge of selling waste.
- Collection trucks are old, dirty (high emissions from diesel engines) and break down often – parts are hard to obtain.
- Increased urbanization and consumption will increase the waste stream.
- The authorities have not made an assessment on the value of waste and waste flows.
- Most people do not understand the risks associated with bad waste management and think it is limited to proper collection and clean streets.

Gender context

Women and men are considered equal in Bhutan and the Constitution and several national policies and action plans refer to gender equality and gender mainstreaming. The National Commission for Women and Children (NCWC) is an independent government organization that was established in 2004 to protect the rights of women and children and to promote gender equality. A network of gender focal points is instituted in all ministries, agencies and dzongkhags,[18] including civil society organizations (CSOs) and the corporate and private sector, to assist the NCWC in implementing gender equality initiatives. These focal points are responsible for mainstreaming gender issues into sectoral plans, policies and programmes. The NCWC coordinates and trains the gender focal points (female and male) on a regular basis.

Bhutan ratified the Convention on the Elimination of All Forms of Discrimination against Women and the Convention on the Rights of the Child in 1981 and 1990 respectively. It also ratified the South Asian Association for Regional Cooperation (SAARC) Convention on Preventing and Combating Trafficking in Women and Children for Prostitution and the SAARC Convention on Regional Arrangements for the Promotion of Child Welfare in South Asia on 4 September 2003, as well as the SAARC Code for the Protection of on Breast Feeding and Young Child Nutrition in August 2003. Furthermore, Bhutan remains committed to achieving the 2030 Agenda for Sustainable Development.

Bhutan is currently drafting a national gender equality policy. The National Plan of Action for Gender (NPAG) 2008–2013, which coincided with the Tenth Five Year Plan provided an overall strategy for gender mainstreaming in seven critical areas: good governance; economic development; education and training; health; ageing, mental health and disabilities; violence against women; and prejudices and stereotypes. Both Bhutan´s Eleventh Five Year Plan (2013–2018) and Twelfth Five Year Plan (2019–2024) include specific commitments to gender equality. Among the 17 National Key Result Areas (NKRAs) in the Twelfth Five Year Plan, NKRA 10 is focused on promoting gender equality in the country. NKRA 10 "Gender Equality Promoted and Women and Girls Empowered" identified three indicators: women's representation in parliament, the gender parity index in tertiary education, and violence against women and girls. Gender and children issues are integrated into other NKRAs, including NKRA 6 "Carbon Neutral, Climate Change and Disaster Resilient Development Enhanced". With its Twelfth Five Year Plan, Bhutan aims

Restaurant and hotel staff come to the waste truck to empty their waste bins. Photo by Tina Schoolmeester.

to eradicate poverty, reduce inequality, address the needs of vulnerable groups and end Bhutan's status as a least developed country.

During the previous plan period, the Government made a number of gender-responsive interventions, such as increasing the maternity and paternity leave for civil servants (not for the whole country), implementing a strategic approach to gender-responsive planning and budgeting (in four pilot ministries), enacting the Domestic Violence Prevention Act 2013, including gender mainstreaming in climate change and disaster risk reduction planning, and developing a set of national guidelines for gender mainstreaming. The waste management acts and strategies, however, do not mention gender.

In addition, Bhutan, which has free education, has seen a tremendous increase in girls' enrolment in education at all levels: primary, secondary and tertiary (Japan International Cooperation Agency [JICA] and IC Net Limited 2017; Bhutan, Ministry of Education, Policy Planning Division 2017). This progress is reflected in very high literacy rates and high school completion rates among the generation under 24 years of age. While there is gender parity in primary and secondary education, there are fewer women (46 per cent) than men enrolled in tertiary education (Bhutan, Ministry of Education, Policy Planning Division 2017). The gap is especially high in science and technology (26 per cent female), engineering (33 per cent female), medicine at postgraduate level (30 per cent female compared with 39 per cent female at the graduate level) and in technical and vocational training (34 per cent female). Fewer women than men also study abroad (43 per cent female) (Bhutan, Ministry of Education, Policy Planning Division 2017). Most students abroad are privately funded (80 per cent), but there are also more scholarships issued to male students than to female students (43 per cent female). Housework duties for girls are identified as the main reason for poor academic performance and consequently lower tertiary enrolment (Bhutan, National Commission for Women and Children [NCWC] and World Bank 2013).

In primary and secondary education, most teachers are male (58 per cent), while in tertiary education, the teaching staff is overwhelmingly male (71 per cent).

Men and women enjoy equal inheritance rights. In west and central Bhutan, Buddhist populations practice a matrilineal system, whereby women usually inherit the property and become head of the household (Bhutan, NCWC and World Bank 2013). In the rest of Bhutan, and among the Hindu population, men tend to inherit the family's property.

The fleet of collection trucks is old and needs constant repair. Photo by Ieva Rucevska.

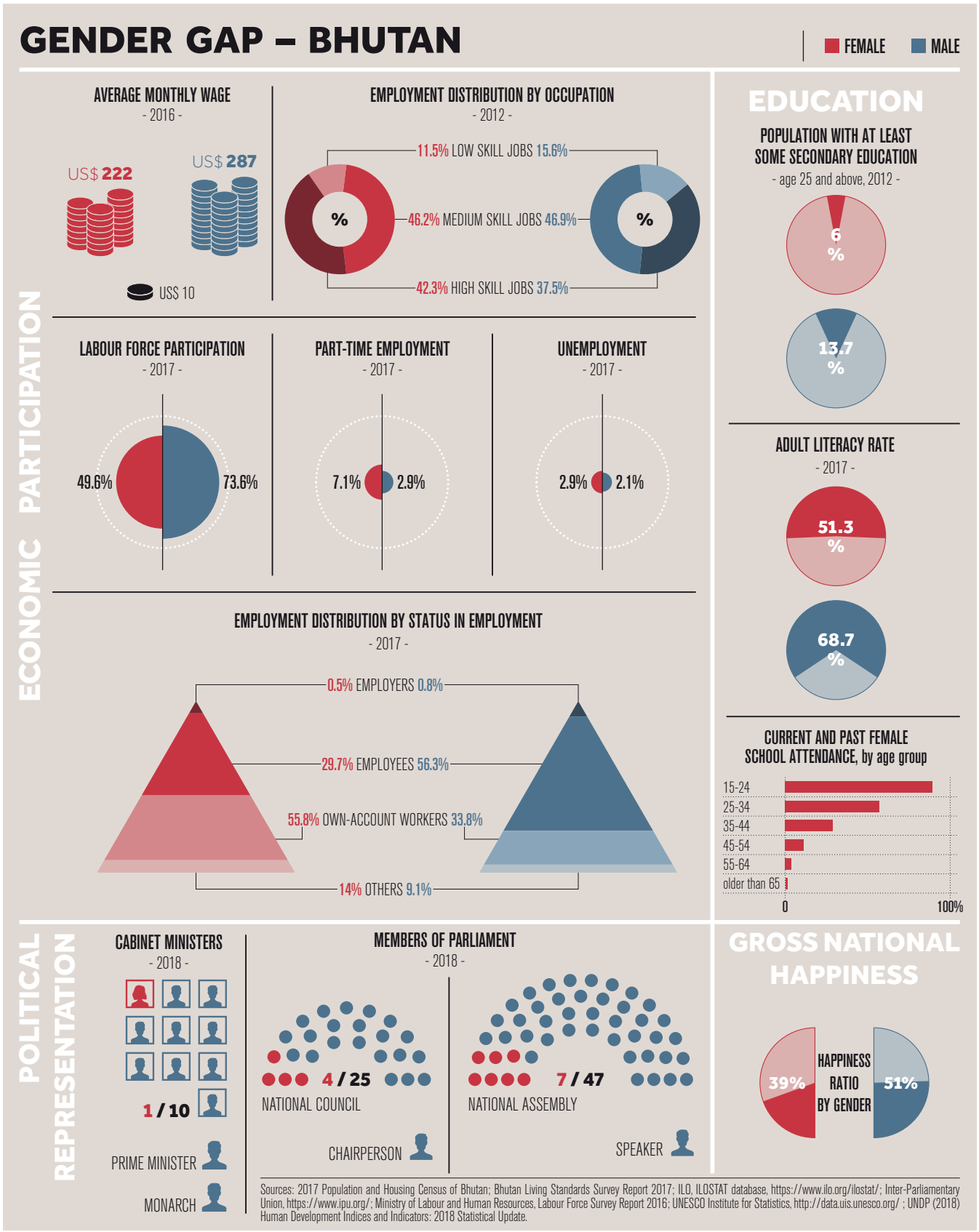


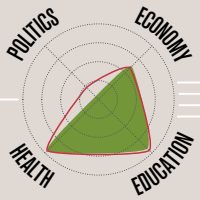
Figure 16

According to the National Statistics Bureau (2018), women's participation in the labour force has increased in recent years, but the rates are still considerably lower for women (52 per cent) than for men (73 per cent). In urban areas the discrepancy is smaller than in rural areas because women are more engaged in subsistence farming. Women are employed in practically skilled, low-profile, lower-paying jobs, and on average earn 22 per cent less than men (Bhutan, Ministry of Labour and Human Resources 2016). Women spend a lot more time on family and household work than men do and have less free time and even less time to sleep. Time poverty,

GENDER INDICATORS, BHUTAN - 2018

FEMALE LABOUR FORCE (% OF TOTAL LABOUR FORCE)	**40%**
CAN A WOMAN LEGALLY GET A JOB IN THE SAME WAY AS A MAN?	✓
CAN A WOMAN LEGALLY REGISTER A BUSINESS IN THE SAME WAY AS A MAN?	✗
DO SONS AND DAUGHTERS HAVE EQUAL INHERITANCE RIGHTS?	✓
IS THERE PAID MATERNITY LEAVE OF AT LEAST 14 WEEKS?	✓
DOES THE GOVERNMENT SUPPORT OR PROVIDE CHILDCARE SERVICES?	✓
DOES THE LAW MANDATE EQUAL REMUNERATION FOR WORK OF EQUAL VALUE?	✓
DOES THE LAW MANDATE NON-DISCRIMINATION BASED ON GENDER IN EMPLOYMENT?	✓
IS DISMISSAL OF PREGNANT WORKERS PROHIBITED?	✓
IS DISCRIMINATION BASED ON GENDER PROHIBITED IN ACCESS TO CREDIT?	✗
IS THERE LEGISLATION ON SEXUAL HARASSMENT IN EMPLOYMENT?	✓
ARE THERE CRIMINAL PENALTIES FOR SEXUAL HARASSMENT IN EMPLOYMENT?	✓

Source: World Bank, *Women, Business and the Law 2018*.



	RANK	SCORE
ECONOMIC PARTICIPATION AND OPPORTUNITY	**104**/149	0.619
EDUCATIONAL ATTAINMENT	**125**/149	0.917
HEALTH AND SURVIVAL	**141**/149	0.960
POLITICAL EMPOWERMENT	**138**/149	0.056
GLOBAL GENDER GAP SCORE	**122**/149	0.638

Sources: World Economic Forum, *The Global Gender Gap Report 2018*; Royal Civil Service Commission, *Bhutan Civil Service Rules and Regulations 2018*.

Figure 17

particularly due to women's household responsibilities, is often a barrier to the development of career ambitions.

Gender parity in the employment of men and women without education could be achieved, but in general, the higher the education, the larger the level of disparity. For example, at the bachelor's level, twice as many men are employed as women, while at the master´s level, only 15 per cent of all employed people are women (Bhutan, Ministry of Labour and Human Resources 2016).

Despite its recent steps to close the gender gap, Bhutan ranks only 122 out of 149 on the Global Gender Gap Index (WEF 2018). While this ranking is disproportionally low compared with some of the advances made in educational attainment in recent years, it is mainly attributable to gaps in labour participation and to the low participation of women in politics. Of the 188 candidates that stood in the 2018 primary elections for the National Assembly, only 19 were women (down from 31 in 2013). In the second round, only 10 women remained (compared with 11 in 2013). In 2013, four women were eventually elected but in 2018, seven of the 10 female candidates were elected (Dorji and Wangmo 2018). While this progress is important, only 15 per cent of the elected members are women.

Even though women and men enjoy the same legal rights in Bhutan, women are increasingly very well educated (especially the younger generation) and enjoy quite a large degree of freedom, thanks to the significant protection for them in national legislations. However, this does not translate into the job market, nor in the representation of women in decision-making positions and politics. A recent study suggests that a "glass ceiling" explains the dearth of women in high political positions (Verma and Ura 2015), and that gender perspectives remain under the influence of older behaviours and stereotypes that suggest women do not make good leaders. Strong cultural rules bind women to the cleaning, cooking and caretaking roles they have always held.

The Government of Bhutan collects data on Gross National Happiness (GNH), an indicator of the population's collective well-being and happiness.

According to the national GNH statistics, women are less happy than men. Almost 51 per cent of men report that they are deeply or extensively happy compared with 39 per cent of women. Women sleep less and have less leisure time.

The gendered landscape of waste management in Thimphu

Employment in the waste sector is largely segregated by gender. Women mostly carry out unpaid tasks and there are more men than women in paid employment. As Figure 18 shows, in positions with higher salaries or decision-making authority, the gender disparity is large, with the top positions in the waste sector primarily occupied by men.

Households and communities

The greatest gender differences in Bhutan's division of labour occur in unpaid household work. Women are by far the main caretakers of the household and are responsible for childcare, cleaning, shopping and cooking. As a result, they are generally considered best suited to managing household waste, which in practice means waste segregation and home composting where possible. This in turn is reinforcing gender stereotypes.

More women are now starting to participate in the labour force – a trend which is increasing. Among households where men and women have both received tertiary education and are in paid employment, the share of household responsibilities appears to be more evenly distributed. However, it is still more common for women to be required to perform their household and caregiving duties in addition to their daily jobs. This acceptance of traditional roles carried out by women puts extra pressure on them and makes men even more estranged from household tasks. In addition, children grow up observing this example from their parents, which may make it difficult to change such attitudes and behaviour patterns later in life.

The full responsibility for household waste management is yet another demand affecting women's already limited free time and their ability to accept opportunities such as income-generating work, after-hours meetings, overtime or travel.

Community leaders have the potential to improve the waste management in their areas and can mobilize and encourage the people living in their community to deal with household waste effectively. These community leaders are elected by the community (most of whom are men, elected both by men and women) and act as their spokesperson with the municipality (Thimphu Thromde). These leaders

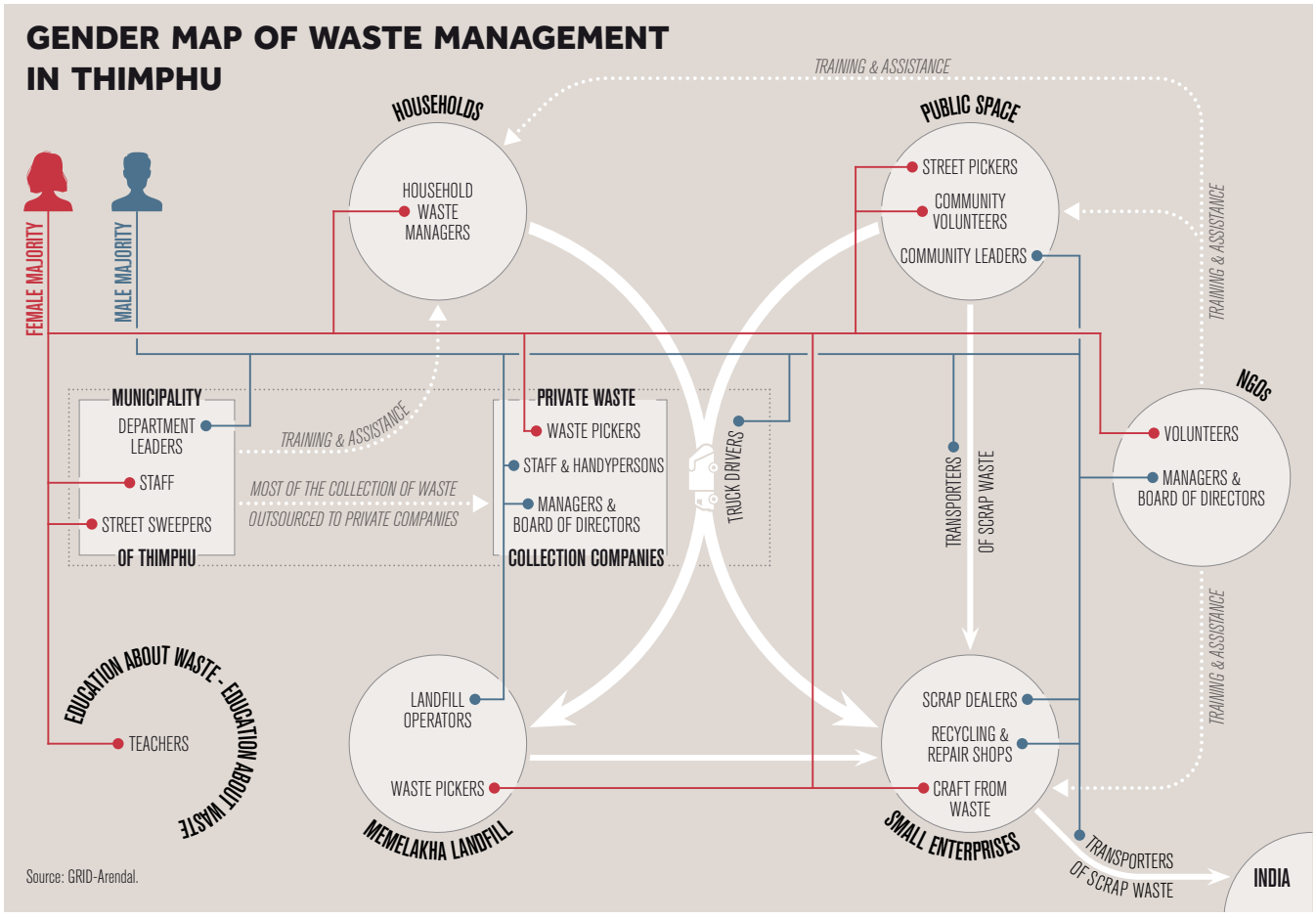


Figure 18

Stakeholder snapshot

Households and communities

- Women are by far the main household waste managers.
- Women are mostly active as volunteer waste managers in their communities (sometimes because they do not work outside the house or are homemakers).
- Community leaders are mostly male.

Policy and governance

- Men occupy high decision-making positions both at the national and municipal levels and also on boards of directors.
- Women have a limited role and little participation at the political, administrative and economic leadership levels.

Operational levels

Formal

Formal sector laborers (waged)

- Street sweepers are mostly women.
- Office cleaners are mostly men.
- Waste collection truck drivers and handypersons are exclusively men.
- There is gender parity among waste pickers that work with contracts.

Administration

- Managers are predominantly men in both the public and private sectors.
- Office staff are more often women or gender parity is better, especially within public administration.
- Boards of directors have more men than women.

Small-scale enterprises

- Social entrepreneurs in the waste sector are mainly men.
- Some higher technological recycling (e.g. plastic for road construction) is mainly run by men.

Informal

Informal sector laborers (unwaged)

- Waste pickers are mainly women.
- Recycling in the sense of weaving baskets or making flowers is typically seen as being a female activity.
- Both men and women work at scrap yards.

Small-scale enterprises which are both formal and informal

- Second-hand/repair shops are mainly run by men.
- Scrap yards are mainly run by men.

are respected in their communities and often consult with community members, affording them great potential to improve their community's waste management, in part through increasing their role as a waste sector stakeholder. Community leaders can, for example, organize training on composting and waste segregation, and mobilize community members to attend. Women mainly attend such courses, which often occur mid-morning, though some women may take time off from work to attend.

In practice, women play an important role in ensuring that streets are clean and that waste is properly segregated and collected. Several recommendations and plans are in place that indirectly target women on issues related to waste segregation, composting and recycling. Clean Bhutan, a CSO, and the Tarayana Foundation, a public benefit organization, both have programmes to build the capacity of women and youth and to provide them with training.

Clean Bhutan employs about 11 staff members, 80 per cent of whom are women, including project coordinators, finance managers and trainers of trainers. Clean Bhutan informs citizens about good waste management practices and behaviours, and also organizes clean-ups. Recycling is a main concern: one programme teaches participants how to make baskets from plastic using traditional weaving techniques. Although both men and women can join the courses, men, if they do start, usually do not complete them. Reasons for men quitting include having found a job, though this sometimes proves not to be the case. This behaviour suggests a lingering stigma related to waste and/or activities that are thought to be suited to women. However, women realize that they can sell some of valuable waste items to make extra income, which incentivizes them to be even better at segregation.

The Memelakha landfill: a closer look at the above picture reveals that despite the segregation of wet and dry waste at the source (household, or restaurant, or market), they get mixed at the landfill. The red and green bags are medical waste (see detail below with gloves, needles, and bloody compresses) which just gets mixed with the other waste. Photo by Ieva Rucevska.

> *"Some people want to increase waste because they love to recycle. We don't like recycling – we call it vicious-cycling. Our main objective is to reduce at the source through advocating behaviour change through local knowledge."*
> – Nedup Tshering, Clean Bhutan.

Clean Bhutan also provides skills training for the unemployed wives of officers from the armed forces and economically disadvantaged rural and urban women. Although these programmes have some merit, making baskets does not offer a long-term solution to the waste problem. Providing access to different skills – whether mathematics, driving or smart farming – may result in better outcomes.

The Tarayana Foundation also focuses on women's empowerment but takes a much more practical and enabling approach. Since women are often not able to leave their farms to attend community meetings or workshops, Tarayana provides its courses to women at their homes on a one-to-one basis to ensure they receive information directly. By talking to women only, Tarayana is able to understand women's perspectives on an issue where men's points of view tend to dominate. The foundation concentrates on rural communities and contributes to establishing gender equality and enabling conditions for women. Thanks to Tarayana's efforts, women who are often not used to working outside their homes and who may lack self-esteem are able to gain technical skills and the confidence to start their own small-scale operations.

Programmes such as these not only play an important role in promoting a bigger role for men in housework and household waste management, but also promote women as good decision makers and train women in social skills to positively increase their presence within their families and communities.

The National Environment Commission runs a programme in schools to build civic responsibility related to waste management. In Bhutan, teachers have their students' respect and schools can therefore play an active role in educating students about recycling, segregation, waste management and waste prevention. Schools also provide an opportunity to break down some gender roles and patterns and to promote the participation of men in household work and the participation of women in leadership..

Policy and governance

Women hold less senior job positions than men in Bhutan and are almost invisible in politics or decision-making positions. This is also the case in Bhutan's waste

The bags from this biohazard waste are then used again to put the segregated material in. Photo by Ieva Rucevska.

sector. In both the public and private sectors, men predominate as heads of departments and managers. Despite being the backbone for waste management in families and communities, women have very limited opportunities to take part in decision-making.

> *"There is more trust given to men than women when it comes to the decision-making process. Men receive more votes than women. There is a need for intense awareness."*
> – Ugyen Tshomo, Chief, Women's Division, National Commission for Women and Children (NCWC).

Interviewees reported that the Government tries to prioritize women and empower them, but that only a few are qualified for high-level positions. There are of course exceptions and a handful of women are in top positions, such as, for example, the division head responsible for waste management at the Ministry of Works and Human Settlement and the business adviser (the highest position in management) at Greener Way. The Minister of Works and Human Settlement (2013–2018) was Bhutan's first female minister and worked to boost the opportunities for female engineers as the first female civil engineer in the country. The new Minister of Health of the current government formed in 2018 is currently the only female cabinet member.

Operational level

The stigma attached to working with waste means that jobs in this sector are among the least prestigious and are held by the poorest people. Gender bias is evident in the distribution of men and women across job types: drivers are exclusively men, while street sweepers and waste pickers are overwhelmingly women. The stereotype that women are less physically strong than men is used to justify the preference for men as drivers. The hardships related to working the land or picking waste apparently carry no implications for women's ability to work the jobs commonly held by men.

Thimphu Thromde employs about 75 street sweepers, 71 of whom are women. They are provided with safety equipment and work Monday to Friday, as well as half a day on Saturday. The street sweepers earn less than US$ 90 a month, which is very close to the national minimum wage. Many women segregate some valuable items, such as bottles, and can sell these separately. Scrap dealers report that those who sell waste to them are almost always men. Street sweepers are not provided with a work contract, though office cleaners (who are usually men) tend to receive one. This indicates that male cleaners not only have more job security than the female street sweepers, but also work in safer and more protected environments.

A group of men at Greener Way are compressing PET-bottles at the transfer station. Photo by Ieva Rucevska.

A waste picker from Greener Way at the Memelakha landfill (Thimphu´s landfill) earning around 100 US $ per month and working about three days per week at the transfer station and three days per week at the landfill (Greener Way organises transport). Photo by Tina Schoolmeester.

Greener Way employs about 20 truck drivers and 19 waste pickers to segregate waste at the transport station or landfill. The drivers are all men, while the pickers are evenly divided (nine men and 10 women). A representative of the company's management reported that these waste pickers earned around US$ 150 per month, but women at the landfill reported that they only received around US$ 95 per month. Drivers earn more at around US$ 240 per month.

> *"There are only men in collection because women cannot handle emptying the heavy dustbins."*
> – Rinzin Dorji, Greener Way.

At the landfill, the operator was a man and there were another eight pickers working on the site (three men and five women), in addition to those employed by Greener Way. Competition between the Greener Way waste pickers and those working independently creates friction in the resulting picker hierarchy. This is not surprising as the independent pickers earned considerably more than the women employed by Greener Way (one couple earned about US$ 314 per month between the two of them, while another female picker claimed she earned US$ 230–280 per month) and had a lot more freedom. As a result, the independent pickers are required to wait until the Greener Way pickers have finished before they can begin work. Usually, the independent pickers opt to work on the slopes of the landfill where it is more dangerous. None of the waste pickers regarded the work on the landfill as unhealthy. Some reported that they get headaches that pass, but none of the women discussed or seemed aware of the dangers and health implications of working on the landfill.

Administration

Among office staff there is more gender parity in the public sector, but in the private sector there are still more men than women. Office staff in CSOs and public benefit organizations are mostly female. The few women that do make it into top positions could play an important role in promoting women as good leaders, as could the media.

Although the waste sector provides opportunities for women and men to start small-scale businesses, innovative solutions are still needed. In Bhutan, entrepreneurs are mostly male, though female entrepreneurs represent 46 per cent of the service sector in hotels and restaurants (Dorji 2018). Loans and other informal credit appear to be the biggest obstacles to women-owned enterprises (Dorji 2018). Given that women contribute less to the labour force, it would be beneficial to promote women entrepreneurship since it could increase their participation in the formal economy. This could be at all levels of the waste hierarchy and at all enterprise sizes.

The head of the Waste Management Division, National Environment Commission Secretariat and his four staff members. Photo by WWF Bhutan.

Currently, no entrepreneurship training course targets women only. The Bhutan Association of Women Entrepreneurs (BAOWE) helps women set up small businesses, mainly to sell their farmed goods.

Most board members of CSOs and private sector organizations are men. Women are reportedly more likely to decline this responsibility because of commitments at work and home. However, one interviewee reported that despite one woman's refusal to be an official board member, she still provided informal feedback which was better and more abundant than some of the actual board members. There is a widespread view that board members need to be senior in age because they are more strategic thinkers. However, young women and men may be more innovative thinkers and could therefore be valuable board members despite having fewer years of experience. This is especially important in the waste sector where innovative solutions are needed.

Recycling and scrap dealers

Several companies use or recycle waste, such as plastics (for constructing roads) and paper primarily, though some recyclables are sold to scrap dealers and repair shops. Only some of these dealers and shops are registered, but all typically employ several people on an informal basis, including family members. Owners often buy recyclables from households that store their waste at home for collection by scrap dealers from social entrepreneurs or auctions, who then drive truckloads of valuable waste to India at least twice a month. The incomes of the workers and the owners are unknown.

Considerable amounts of e-waste end up with scrap dealers who sell it in India. Photo by Ieva Rucevska.

Given the relatively small population of Thimphu, the number of scrap dealers and second-hand and repair shops is low. Still, there are quite a few formal (registered) and informal (not registered) scrap dealers. All of these engage several informal or family workers. All dealers and shops visited during the field visit were owned by men. Women sometimes worked in the scrap yards, some of which were home to the scrap yard owner's family. In general, scrap dealers earn the following from recyclable waste:

- good quality plastic: US$ 0.2/kg
- low quality plastic: US$ 0.14/kg
- paper cardboard: US$ 0.06/kg
- PET bottles: US$ 0.18–0.2/kg
- beer bottles: US$ 0.04–0.07/bottle.

Recycling materials into crafts and artisanal objects, such as baskets and bags using plastic wrappers or Tetra Pak, is typically seen as being a female activity, even though men were weavers traditionally.

There are a number of second hand and electronic repair-shops in Thimphu. Photo by Tina Schoolmeester.

Everything is recycled – workers at a scrap yard remove copper wires from electric wires, which were bought by the scrap dealer at US$ 3.6/kg. Workers did not know the selling price after segregation, but the remaining plastic was sold at US$ 0.07/kg. The young woman pictured is 20 years old: she only attended school until first grade, as she was needed at home following the death of her father. She is paid about US$ 43 per month because she lived at the scrap yard owner's house and did not have to pay for food or rent. The man pictured is older and receives US$ 115 per month – he lives independently. The owner travels to India once every month or two months to sell goods. Photo by Ieva Rucevska.

Many people live at the scrap yards or at building sites, using the scrap to create some privacy. Photo by Tina Schoolmeester.

Summary of main findings and policy considerations

The following is a summary of main findings from the gender and waste country analysis for Bhutan, which includes relevant policy considerations. Further to this work, UNEP-IETC and the national partner organizations carried out stakeholder consultations. Annex 5 includes a list of elaborated policy implications summarized after the stakeholder consultations.

Households and communities

Women are the main handlers of household waste management. Women are the main caretakers at the household level and are therefore responsible for the management of household waste. These responsibilities can hinder women's full participation in work outside the home.

> **Policy considerations:** Research shows that it is easier for women to pursue a career when desired if there is a more gender-equal division of household chores. Awareness-raising campaigns could encourage men to redistribute their time towards housework to achieve a more gender-equal division of household chores. Policies on childcare and maternity/paternity leave for both parents may improve opportunities for women to join the labour force, as well as the working environment for both women and men.

Segregation at the source is key to successful waste management. As an important link in waste management, segregation at the source of all materials should be taught to both men and women to ensure an efficient waste management sector. However, men and women may have different views on disposing methods, recycling and what is considered waste. More efficient and consistent segregation of waste that is better aligned with the needs of the entire waste management system will lead to the development of improved waste handling strategies, a reduction in waste and more recycling.

> **Policy considerations:** More widespread and consistent education, awareness-raising and advocacy is required on waste segregation. There is also need for segregation to be meaningful so that segregated waste is not mixed together again at the landfill. As of yet, there has not been an in-depth assessment of the waste sector value chain and notions of this are therefore underestimated and distorted.

Food waste composting has huge unlocked potential. Thimphu segregates wet and dry waste, with around half of all household waste being food waste. However, since there is no large-scale composting facility and no further action carried out with the wet waste most of it ends up in the landfill. This means that the value of segregation at the source largely comes from the recycling of dry waste.

> **Policy considerations:** Segregation of wet and dry waste at the source should be strictly implemented everywhere. To harness the value of segregated household food waste, possibilities for larger scale composting or energy production from wet waste should be considered. Household food composting capacities could reduce waste and – assuming there are no radical shifts in gender norms – would allow women to have a more formalized, recognized role in waste recycling, while also providing soil inputs for their own gardens.

Policy and governance

There is no legislation connecting waste and gender issues. Although there are separate legislations on gender and waste, their individual policies have not been fully implemented. Gender mainstreaming in waste legislation could be beneficial for the effectiveness of waste handling.

> **Policy considerations:** Incorporating gender considerations into the waste sector and waste management strategies is urgently needed. The implementation of gender-responsive policies should include monitoring for compliance.

Gender-disaggregated data are not collected in a systematic way. There is a lack of clarity regarding waste generation, the amount of waste segregated, recycled and traded, and who is handling certain processes at all levels of the waste hierarchyy.

> **Policy considerations:** Disaggregated statistics in terms of waste and gender may enable policymakers to develop better evidence-based, gender-responsive recommendations. There is also a need to conduct more in-depth research that could inform gender-responsive recommendations and waste strategies. A cost-benefit assessment should be carried out based on the waste sector's real revenues and economic potential. This should include an assessment of the contribution that paid employment of women could have through fiscal benefits for the municipality and the State.

Bhutanese people are diligent leading to a situation when policy implementation is easier than in any other set up. This is aided by the fact that the population is relatively small and that there is great respect for the

monarch who continues to promote sound waste management and gender equality.

Policy considerations: Awareness-raising at all levels and structures should be pursued. The media could further promote the importance of sound waste management and gender equality. However, a proper assessment of the waste value chain should come first.

Solid baseline information is a prerequisite for designing comprehensive waste management strategies. There is little baseline information available, which hinders finding the best and most economically viable solutions for waste management, including recycling.

Policy considerations: An in-depth assessment of the waste value chain is needed to map out the role of social entrepreneurs and the informal sector, as well as the unpaid role that women and communities have played in waste management.

Operational level

The gender gap in the waste sector is much larger than previously acknowledged. There is a marked division of labour and unequal opportunities and roles in the various tasks between women and men in the waste sector. Existing stereotypes and perceptions of gender in society maintain these inequalities.

Policy considerations: Offering equal recognition and equal opportunities for both women and men would help re-balance current gender inequalities and tackle particular barriers that women face. Education in schools could address gender equality and suggest that breaking down traditional gender roles may improve conditions for everyone. Awareness-raising and education on destigmatizing waste jobs is necessary.

There is a strong need for the inclusion of women in all waste management levels. As primary handlers of household waste and the main participants in the local community, women can bring insight to all stages of the waste management chain. Having more women in leadership roles would give weight to specific values within waste management systems that complement and enhance those provided by men.

Policy considerations: Equal participation in political processes and the promotion of both women and men as leaders is important to strengthen gender mainstreaming. Enabling women with high degrees to get jobs on an equal level as men within business, law and STEM fields would move gender equality forward. Recognizing, acknowledging, encouraging and promoting women as entrepreneurs and good leaders is recommended to increase their significance as stakeholders and partners in waste management.

Labourers have limited knowledge of the adverse health effects from working with waste. Women (sometimes with babies and small children) and men working on scrap yards and landfills are unaware of their dangers and health effects, which may be differentiated. These labourers also often work without a contract, which prevents them from earning a steady income and reduces their work security. If contracts were in place, it would be easier to quality check the waste segregation and make it more reliable, efficient and safer, for example, by giving proper education and adequate supervision.

Policy considerations: Local leaders should develop and sponsor appropriate awareness-raising campaigns on the risks of working with waste, especially on landfills. Women and men need to receive training about the impact that waste has on them and on their offspring, as well as on the importance of safe and sound waste management. Public and private organizations working in waste management should recognize the informal sector and those who work in semi-formal employment (especially women), such as registered sweepers working without a contract, and should provide training on waste handling, both for efficiency and safety.

A waste picker in the streets of Thimphu, Bhutan. Photo by Tina Schoolmeester.

PART 3

Conclusion and the way forward

Structures and conditions of the waste sector

As described in chapter 1, the waste sector is situated within broader political, socioeconomic and global structures and conditions that determine the fundamentals of the industry, the functioning of the sector and the gendered relationships throughout. All of these structures are gender relevant in both specific and overarching ways. Both global trends and local conditions contribute to the gendering of the waste sector in Bhutan, Mongolia and Nepal. Policy interventions can transform waste management into a more gender-equal sector and in doing so, secure basic human right principles and provide an avenue for implementing governmental commitments to gender equality. Whether the waste sector continues in a business-as-usual direction or moves towards gender equality may be determined by the extent to which it embraces gender-informed policymaking and gender mainstreaming.

As a large economic sector, waste management is increasingly globally financialized and marketized.[19] However, globally women's representation in the sector is limited. Women are not represented in the higher levels of global waste management or in international waste consortia. In addition, women are not represented in circles of globalized capital, with all evidence to date suggesting that women do not equally share the financial rewards of market financialization in any sector. In globally marketized industries, financial reward and wealth is both concentrated and masculinized (Oxfam 2016; Gonzales et al. 2015).

In all three countries, waste management is an economic sector that provides important livelihood opportunities to individuals and households. These opportunities are greater in urban areas than in remote locations, as the higher population density and consumption power lead to greater waste generation. Field evidence in the three countries reveals that women are more associated with the upper levels of the waste hierarchy (see Figure 1) – prevention, minimization, reuse and recycling – but are marginally connected with the business aspects, whereas men dominate upper-level administration in both the public and private sectors, in roles ranging from city managers and planners to landfill operators and managers of waste collection companies. Although women are active in avoiding and reusing waste, often through informal or volunteer community initiatives, they are almost never present at transactional levels of the sector.

All three countries currently have a mix of public and private engagement in waste management. In Mongolia and Nepal, informal recycling activities are particularly prominent and involve waste pickers at transfer stations and landfills, small-enterprise scrap dealers and scrap traders. Even though these activities are well established in Bhutan, Mongolia and Nepal, the informal sector is not recognized or protected by the three respective governments. In addition, in the case of Nepal where there is high turnover of secondary materials due to population density, the revenues from recycling do not stay in the country, but are exported out of the country along with the goods themselves.

The fact that the recycling sector can contribute revenue to national budgets and create employment opportunities has not yet been incorporated into decision-making levels in the three countries. Although recycling and waste segregation are becoming more formalized (particularly in Bhutan), these activities still involve more informal activities, such as waste picking at landfills and small-enterprise private initiatives. Moving these informal activities into a more formal business will not only alter the waste stream, but will also have positive economic impacts, such as the development of innovative recycling schemes. Currently, informal recycling is a robust sector that may help to lift people out of poverty. Displacing these informal activities with formal and more technologically sophisticated approaches will have both positive and negative socioeconomic effects, which will be gendered.

As the waste sector becomes increasingly modernized with various new technologies, higher levels of education and training will be required – a shift that is already under way in all three countries. If education opportunities are not gender equal, women will be excluded from critical entry points into the sector. At present, fewer women than men enrol and complete technology-related studies as indicated by education statistics. In Bhutan, the sharpest gap in education participation is in science and engineering, where there are only 510 women enrolled compared with 1,250 men (JICA and IC Net Limited 2017). In Nepal, women account for 31 per cent of students enrolled in science and technology studies and 21 per cent enrolled in engineering studies, while in Mongolia, women account for 23 per cent of students enrolled in engineering (United Nations Education, Scientific and Cultural Organization [UNESCO] 2015).

Education enables civic engagement and encourages responsible citizenship – two major contributions towards the development of sound waste management systems. Schools directly educate pupils and through a cascade effect indirectly educate their parents. Nepal has effectively used this system to pass on important messages about plastic consumption.

Public education and awareness-raising is also an important tool to inform people about hazardous wastes at the domestic level. In the absence of alternative safer disposal methods, households and individuals are regularly exposed to toxins and dangerous chemicals. Where formal waste collection is inadequate, households often burn their own waste, including plastics and other toxic materials. Exposure to fumes and residues carries considerable health risks (UNEP 2016; Verma et al. 2016; Women in Europe for a Common Future [WECF] 2004–2005). Since women are more often responsible for managing household waste, they are likely to have higher rates of adverse health impacts associated with exposure to waste. The health impacts grow more severe depending on the extent to which these individuals are exposed to toxic and highly hazardous substances in the waste stream.

Individuals that directly handle large amounts of waste, including hazardous waste, such as recyclers, waste pickers or waste collectors, are also at great risk. These informal workers lack even rudimentary safety equipment such as gloves or dust masks. Landfills are notoriously dangerous sites: accidents involving waste pickers, the trucks and heavy equipment are common and landfill collapses are not infrequent. Furthermore, waste pickers often carry large and heavy loads to recycling collection points posing a great risk of musculoskeletal injuries.

In all three countries, informal waste management activities – including at the household level, through landfill picking or small-scale recycling – have environmental sustainability benefits. Although the environmental risks of unsound waste management have been well documented in general, they have not been fully specified for Bhutan, Mongolia or Nepal.[20] At the local and regional levels, impacts can include extensive ecological degradation, loss of biodiversity and high levels of air and water pollution. Although it has not been measured in any formal manner, the ecological benefit from informal, volunteer and household activities that divert a large proportion of waste into reuse and recycling operations is considerable. The sustainability multiplier of women's unpaid labour in enacting these ecosystem services warrants closer attention.

Gender mainstreaming in the waste sector

The current gendered profile of the waste sector is largely the product of attitudes about and stereotypes of men and women directly linked to everyday life in the three countries. These gendered norms manifest in the waste sector in distinctive ways and are visible throughout the entire waste management value chain. Attitudes shape realities and consequently structural conditions in the waste sector, which in turn justify and harden gender norms.

Women's responsibility for maintaining the domestic sphere is both descriptive and prescriptive. Women are prevalent in informal, voluntary, household and neighbourhood activities related to waste, which include organizing and attending community meetings on recycling initiatives and organizing and participating in neighbourhood clean-up days. Women's engagement in these activities reflects the widespread notion that keeping communities clean is merely an extension of their conventional domestic roles, thereby hardening the norm and serving as a justification for excluding women from certain waste jobs, such as business leadership or truck driving. At the same time, men's lower rate of participation in neighbourhood waste activities creates and perpetuates their alienation from local social networks, leaving them more isolated and feeling less responsible for the everyday well-being of their communities.

To challenge current norms and practices and to create a more gender-responsive waste management sector, interventions should be implemented through practical gender mainstreaming, which should be defined primarily as a process that balances men's and women's participation throughout the waste management hierarchy. Gender mainstreaming is relevant for all stakeholders and structures that interconnect with the sector and influence it. Gender mainstreaming can provide a set of immediate practical objectives applicable at all structural levels and through all stakeholders (see annex 2). Mainstreaming can be a first-line response to existing gender inequalities embedded within waste management in Bhutan, Mongolia and Nepal.

However, gender mainstreaming objectives should not limit the potential for more progressive thinking on gender transformative change within society. Gender analysis in the waste sector should therefore continue in Bhutan, Mongolia and Nepal and seek for incremental transformative strategies.

The following section describes two scenarios: first, following a business-as-usual direction and second, following the implementation gender-informed interventions, which, as the ideal scenario, sees gender fully mainstreamed into the waste sector and all current gender inequalities addressed to take advantage of untapped opportunities.

Lunch break at recycling place in Kathmandu, Nepal. Photo by iStock/DimaBerkut.

Scenarios

Implementation of gender mainstreaming is the key difference between these two scenarios

Scenario One:
Business as usual, no gender-informed interventions

Under a business-as-usual scenario, governments have limited or no gender-informed policies or mandates, and take no action to mitigate the gendered impact of externalities and current trends. In the business-as-usual scenario, traditional gender roles and stereotypes are reinforced and are reflected in the gendered divisions of risks and rewards in the waste sector.

At the community and household levels, opportunities for entrepreneurship receive no governmental support and men and boys continue to be alienated from household waste-related chores and voluntary waste management activities. The unpaid labour of householders – mostly but not exclusively carried out by women – in diverting and managing waste goes unrecognized. Gender imbalances continue at all levels of administration. Training on gender is not available for stakeholders or employees. Health and environmental impacts are unevenly distributed. Women remain the dominant informal and unpaid workers and men continue to dominate manual labour. Men also continue to dominate the administrative and managerial ranks of waste management, as well as engineering-based positions. Small-scale entrepreneurs and informal arrangements carry out most recycling activities. Women are at times able to use these opportunities as entry points into the sector, but only on a small scale. Women continue to be excluded from higher paid jobs, from truck driving to policymaking. In many cases, as jobs in the sector become formalized, women's exclusion deepens. Men continue to be largely alienated from neighborhood and community organized activities, while women continue to provide unpaid care and volunteer in the community. As the sector is globalized and modernized, male engineers and consultants, most likely foreign-based, will mostly be involved in setting up and enacting waste policy.

Scenario Two:
Gender-informed interventions

Under a gender-informed scenario, governments have gender-informed policies and mandates and implement interventions and actions to mitigate the gendered impact of existing structures and externalities.

At the community and household levels, governments support opportunities for entrepreneurship and men and boys become engaged in household waste related-chores and voluntary waste management activities. The household sector is fully engaged in waste management and the unpaid labour of householders in diverting and managing waste gains recognition, giving agency and recognition to women as key domestic managers. Fuller community and household engagement provides a sustainability multiplier in meeting goals related to GHG emission reduction and waste diversion. Gender imbalance at all levels of administration shifts towards equality with proactive gender mainstreaming. Stakeholders and employees have access to gender training. Adverse health and environmental impacts decline and become more evenly distributed. Educational opportunities are more equal, which enables both women and men to engage, if desired, in manual labour and engineering-based jobs. Small-scale entrepreneurs and informal arrangements complement an increasingly formal recycling sector where both men and women have equal opportunities to move into leadership and managerial positions. The informal sector receives recognition and is valued by the entire waste management system. Women and men are fully engaged in recycling opportunities, including formal training. Diversions from the waste stream reach an increasingly efficient scale and the environmental benefits of recycling accrue at an increasing rate. Income opportunities from recycling spread widely across social groups.

Interventions and tools to enable gender equality

Gender-informed policies and interventions can redirect the future of waste management towards gender equality and at the same time strengthen governmental commitments to social inclusion and the SDGs. The following recommendations are based on the country findings and are set within the context of the larger field of gender and waste.

1

The waste sector is widely and mistakenly assumed to be gender neutral. As a consequence, gender inequalities are embedded in almost all aspects of waste management. Overcoming the presumption of gender neutrality is the first step to mainstreaming gender in the waste sector.

2

Attitudes, stereotypes and perceptions about appropriate gender roles permeate the gender and waste nexus. Changing attitudes about gender and norms of appropriate femininity and masculinity are as important as technological or structural changes to reform the waste sector in a gender-sensitive way. The waste sector cannot remain isolated from larger societal efforts to achieve gender equality and can make active contributions to larger equality goals.

3

Bringing a gender focus into waste sector decision-making and policy-setting is urgently needed. As modernization in the sector moves forward, policies should be gender-responsive and implementation should include monitoring for compliance. Policy goals should consider increasing the opportunities for women at all levels, from giving them contracts to promoting them as leaders and entrepreneurs.

4

The development of evidence-based, gender-sensitive policies requires information and data. Gender-disaggregated statistics and information related to the waste sector are currently not collected in any systematic way. Measuring impacts and results by developing and extending gender-disaggregated data collection across all indicators relevant to the waste sector will provide important benchmarks against which changes in the sector can be assessed.

5

Training on gender mainstreaming for all staff in district and local offices related to waste management will provide resources that will bring the concepts and benefits of gender mainstreaming into the sector at all levels. Currently, gender mainstreaming is available only at upper administrative levels, if at all.

6

Educational policies designed to achieve gender equality in STEM education may improve the representation of women in one of the most unequal educational domains in terms of gender.

7

Equal recognition and opportunities for both women and men need to be developed. Gender-based quotas or affirmative action incentives may result in better representation of women in specific jobs, such as truck drivers, urban planners, waste management engineers and administrative staff. Training opportunities for women in jobs with the biggest inequalities – entrepreneurship, finance, trade, engineering, truck driving – may alleviate the imbalance. Similarly, awareness-raising campaigns, training and incentives could encourage men to redistribute their time towards housework and to participate in informal and community-based waste management and mitigation practices.

8

Labour equality standards and safety protection – waste collection trucks outfitted with lifts, for example – would benefit all waste labourers, both men and women, while eliminating one rationale for excluding women from waste collection jobs. Policies on childcare and maternity/paternity leave for both parents may improve the working environment for women and men.

Group of women from the Taba & Dechencholing communities in North Thimphu who work together with the elected community leader to keep their neighbourhood clean. Photo by Tina Schoolmeester.

9

Many countries around the world have successfully transitioned waste pickers into formal recycling jobs, providing models on how to ensure occupational protection for waste pickers and informal scrap and small-scale recycling dealers as landfills modernize. As recycling expands and becomes and more professional, women – who are currently prominent in small-enterprise recycling businesses – may need protection and capacity-building for their locally owned enterprises.

10

Households, which currently have the least formal engagement with the waste sector's power and policy structures, may be the pivotal site for reform. Households have tremendous collective capacity to reduce the flow of waste into the system, both through consumption practices and waste management and recycling strategies. Household needs and structures must be included in all waste management plans. Methodologies should be developed to assess the value of sustainable ecoservices that are currently provided on an unpaid basis by women managing waste in households and communities. This will enable policies to be based on a more accurate view of the waste value chain.

Footnotes

1. For example, Governing Council decisions 27/12, 26/3 and 25/8.
2. Fourth Session of the United Nations Environment Assembly, Nairobi, March 2019. http://web.unep.org/environmentassembly/fourth-session-un-environment-assembly.
3. Documents UNEP/EA.4/L.8, UNEP/EA.4/L.9, UNEP/EA.4/L.10 and UNEP/EA.4/L.7.
4. For the purpose of this study, gender mainstreaming is considered as the process of involving men and women in any planned waste management action in all areas and at all levels. This definition has been adapted from the United Nations Development Programme (UNDP) report on mainstreaming gender in UNDP, published in 2006.
5. Kathmandu refers to Kathmandu Metropolitan City.
6. The term gender neutral means "having no differential positive or negative impact for gender relations or equality between women and men". What is often perceived to be gender neutral, however, often reflects gender blindness in practice, failing to address gender dimensions (Council of Europe, 2016). In the waste sector, gender is often not considered relevant, and waste management policies and practices are often regarded as having no differential impact on women and men.
7. Ministry of the Environment, Climate Change in Mongolia: Outputs from GCM. https://www.env.go.jp/earth/ondanka/pamph_gcm/gcm_mongolia_en.pdf.
8. http://www4.unfccc.int/submissions/INDC/Published%20Documents/Mongolia/1/150924_INDCs%20of%20Mongolia.pdf.
9. Ibid.
10. Long, P. (2017). Mongolia's capital copes with rapid urbanization. The Asia Foundation. 31 May. https://asiafoundation.org/2017/05/31/mongolias-capital-copes-rapid-urbanization/. Accessed 28 June 2019.
11. In Mongolia, waste service providers are known as TUKS (Tohijilt Uilchilgeenii Kompani).
12. Time poverty is the accumulation of demands on women to support their households and families through unpaid labour. Spending time on unpaid work reduces the time that women have for income-generating activities, education and rest. The total global average value of unpaid care and domestic work is estimated to be between 10 and 39 per cent of gross domestic product (GDP) and can surpass that of manufacturing, commerce, transportation and other key sectors. Unpaid care and domestic work supports the economy and often makes up for the lack of public expenditure on social services and infrastructure. In effect, it represents a transfer of resources from women to others in the economy (United Nations, Commission on the Status of Women 2017). On average, women carry out at least two and a half times more unpaid household and care work than men (United Nations Entity for Gender Equality and the Empowerment of Women [UN-Women] 2018).
13. The draft strategy is planned to be completed by 2020.
14. Caste Based Discrimination and Untouchability (Offence and Punishment) Act, 2068 (2011).
15. National Civil Code Act (2017).
16. Waste collection sites include households (door-to-door collection), streets, transfer stations, auctions and dealers (kabadi), among others. The waste collected includes household solid waste, industrial waste and demolition waste.
17. http://www4.unfccc.int/Submissions/INDC/Published%20Documents/Bhutan/1/Bhutan-INDC-20150930.pdf.
18. A dzongkhag is an administrative judicial district of Bhutan.
19. See for example https://www.prnewswire.com/news-releases/the-global-waste-management-market-was-valued-at-285-0-billion-in-2016--and-is-expected-to-reach-435-0-billion-by-2023--registering-a-cagr-of-6-2--from-2017-to-2023--300639028.html.
20. See for example http://www.undp.org/content/undp/en/home/sustainable-development/environment-and-natural-capital/chemicals-and-waste-management.html; Pokhrel, D. and Viraraghavan, T. (2005). Municipal solid waste management in Nepal: practices and challenges. Waste Management, 25(5), 555–562. https://www.ncbi.nlm.nih.gov/pubmed/15925764; Asian Development Bank (2013). Solid Waste Management in Nepal: Current Status and Policy Recommendations.

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Annexes

Annex 1: Methodology
Annex 2: Objectives of gender mainstreaming in the waste sector
Annex 3: Summary of feedback during the stakeholder consultation in Mongolia, April 2019
Annex 4: Summary of feedback during the stakeholder consultation in Nepal, April 2019
Annex 5: Summary of feedback during the stakeholder consultation in Bhutan, April 2019

Annex 1: Methodology

The steps taken under this methodology were led by GRID-Arendal with the strong support of the country partner organizations: the Asia Foundation office in Mongolia, LEAD Nepal and WWF Bhutan.

A gender and household waste assessment will be built on the following steps:

1. a literature review and desk study
2. field visits to Bhutan, Mongolia and Nepal to gather new information through mini-surveys and interviews
3. information aggregation, modelling and final analysis.

1. Literature review and desk study

Gender aspects in waste management have already been studied in selected countries such as India. The gender and household waste assessment will benefit from a literature review from countries with similar socioeconomic situations and cultural behaviours.

2. Field visits

There is limited information about gender and waste in Bhutan, Mongolia and Nepal. As part of the gender and household waste assessment project, information-gathering visits and interviews will be conducted with communities and individuals who are key actors in formal and informal household waste production and management.

As urban households generate more waste per person, the focus of this study will be on the case countries' capital cities: Thimphu (Bhutan), Ulaanbaatar (Mongolia) and Kathmandu (Nepal). These capital cities are the single largest urban agglomeration in each country, and due to their outsized cultural, demographic and economic presence and influence, qualify as primate cities. Household waste problems are more severe and significant in primate cities than in other settlements, and as a result, mitigation solutions and policies developed for such cities will generally set national standards, especially in rapidly urbanizing countries such as Bhutan, Mongolia and Nepal.

In the framework of this study, the GRID-Arendal team will collect gender-disaggregated information (including quantitative data, where possible), which will provide a background for the result-oriented and gender-responsive approach. Data collection, primarily through interviews and site visits will take place at the following levels:

- At the household level (prevention, waste generation and segregation, and domestic waste management). Since household management may also be organized within community groups, such as community clean-ups or street sweeping collaborative efforts, GRID-Arendal will also collect information about women's and men's roles in waste management-related activities at the community level.
- At the municipality level (household waste management governance and policy).
- At formal operational levels (private commercial and public sectors, waste recycling facility and/or landfills and dumpsites).
- At the informal waste management level.

At the household level – interview script provided in Table 1.

Semi-structured interviews will be carried out with men and women separately in 5–7 urban households of the capital cities of Bhutan, Mongolia and Nepal.

Support from the in-country partners will be essential to identify households for interviews and arrange for the interviews to take place. To the extent possible, households should be identified that are representative of different economic levels and caste/religion (where relevant). The partners and GRID-Arendal will use snowball-sampling techniques to identify suitable individuals and households to interview.

The field teams will consult with each in-country partner to determine whether it is relevant and possible to organize separate interviews with community groups involved in waste management-related activities.

At the municipal level – interview script provided in Table 2.

This segment focuses on the formal waste management level under the municipality's mandate. GRID-Arendal will carry out semi-structured interviews with high-ranking members in departments responsible for waste management at the municipal level. GRID-Arendal anticipates interviewing 2–3 managers and officials. It is recommended that these interviews be carried out last, after interviews have been held at the household and informal levels.

The analysis of formal waste management requires the preparation and gathering of background information on legislation, the extent to which the municipality does or does not take responsibility for waste and recycling, and the municipality's mandates. GRID-Arendal will rely on the partner organizations to provide existing background resources and data sets, to the extent they are available.

At formal operational levels – interview script provided in Table 3.

This segment focuses on the formal waste management level implemented by the private sector. GRID-Arendal will carry out semi-structured interviews with 2–3 waste management operators.

The analysis of formal waste management requires the preparation and gathering of background information on public and private partnership agreements and the responsibilities of the private sector, as well as its biggest companies. GRID-Arendal will rely on the partner organizations to provide existing background resources and data sets, to the extent they are available.

At the informal waste management level – interview script provided in Table 4.

This segment focuses on the informal waste management sector. GRID-Arendal will carry out field survey observations, and, if possible, 2–3 interviews with men and women who participate in the informal waste sector (in landfills, informal collection, informal recycling facilities).

The analysis of informal waste management requires the preparation and gathering of background information on how the informal sector is organized in the focus country.

The field team will rely heavily on the in-country partner to identify suitable activities, individuals and groups to observe and interview, using snowball-sampling and network-based sampling.

Table 1. Semi-structured interview questions for householders

Background questions for this interview will include:
- Number of persons currently and 'usually' in the household
- Age/sex distribution of people in the household
- Jobs (paid and unpaid, type/sector/industry);
- Is it usually or episodically a female-headed household? (i.e. is the husband away for significant amounts of time)

	Leading questions	*Reasoning for the questions*
Waste generation	What kind of waste does your household generate? Do different members of your household produce different kinds/amounts of waste? Are there any different views of waste among your family members? Do you think that you (and/or your household) generates small or big amounts of waste? What is the single largest or most common component of your household waste (e.g. plastic, food waste, textile waste)? Is it different from person to person within the household? When you think of the community (not your own household), what is the largest component of waste? What do you think is the most difficult waste to handle effectively? Are you concerned about hazardous waste in your household or in your community? What kind of hazardous waste is it and why is it brought into the household/community? In your household, who generates the most waste? Why does that person produce more waste than others? Does your household do any formal or informal recycling? Who takes primary responsibility for managing the recycling? Do you/your household make any money from recycling?	Awareness of waste components, including potential gender-differentiated views of waste itself. Perception about the amounts of waste generated. Awareness of hazardous waste (e-waste). Potential gender-differentiated purchasing practices (e.g. women may be more concerned with the wrapping/packaging of items being purchased, since they are usually responsible for managing household waste).

Table 1. *continued*

	Leading questions	*Reasoning for the questions*
Waste prevention	Are you concerned about the amount of waste you/ your household/your community produces? In the last year or so, have you or any of your household members taken any specific steps to reduce the amount of waste being generated in your household? Can you think of any products, materials and/or habits that you feel are unnecessary and which may increase everyday waste? Do you try to reuse items or parts of items within your household that other people might consider to be waste? Have you ever taken specific actions to reduce the amount of waste that you and your household generate and to improve waste management issues? Are these actions different for the men/women in the household?	Awareness of the need for waste prevention. Gender-differentiated abilities to change habits. Gender-differentiated abilities to change habits. Awareness about the overuse of single-use plastic bags, plastic bottles or any other products and habitual behaviours, such as throwing rubbish onto streets..
Domestic waste management	How does your household dispose of its waste? Are there different approaches for different types of waste? What about recycling? What about composting? Who in your household decides how to manage the disposal of waste (including which approaches to use)? Who pays for these services/methods? To women: Do you feel any violence or harassment if waste management is not performed at the "top level"? Are there centralized/municipally-provided waste services available to you in your community? Do you use those services? If not, why not? Does informal waste collection exist? If so, is informal waste collection more active/efficient than the other services? What about recycling services? Do you receive enough information about recycling from the municipality or the community? Is there any voluntary community activity related to waste management? (For example, who cleans the formal/informal collection points? Who is responsible for community cleanliness?) Who does most of the work to dispose waste from the house? Men? Women? Boys? Girls? Is it different for different types of waste? Who makes the decisions on how waste is disposed in your household?	Gender-specific waste management. Gender-specific waste management and treatment practices (including community cleaning activities, if any), needs and priorities. Harassment, safety and violence. Decision-making authority according to gender. Gender roles in waste management-related activities at the community level and impact of institutionalization/ formalization of voluntary work (generating money).

Table 1. *continued*

	Leading questions	*Reasoning for the questions*
	Is it your responsibility to take care of household waste management (i.e. do you do the primary work of everyone within your household)? If not, whose primary responsibility is it? What do you do with your waste? Do you separate and treat different types of waste differently? Do you think that waste has or may have economic value? Does your household participate in any informal/formal/voluntary/community-based/municipal waste collection or management system? • If no, do you know why? • If yes, what type of system is it? (Communal, fee-paying, etc.) • Who makes the decision to participate in any initiative within the household? • Who participates in these community activities and do you know any case of voluntary community work becoming institutionalized/formalized (generating money)? If yes, how has women's engagement changed? (Expand on questions if necessary). • Do you have any say or influence on the system outside of the household? Are you aware how much waste management services cost? Do you think your city/municipal government is doing a good job at providing waste services and recycling services? Do you think your household handles its waste well? Do you know what department in the city/community handles formal waste disposal and recycling? If not, do you know if there are any other (informal) groups or companies who handle the waste disposal and recycling for your area?	

Table 2. **Questions to the municipality**

	Leading questions	*Reasoning for the questions*
Municipal service	What types of waste does your department manage? How much waste does it manage? How much waste is generated?	General waste generation and waste management.
	What is the single biggest component of waste collected and recycled?	Gender data at the municipal level. Gender division of roles, responsibilities and decision-making authority within the municipality. Gender considerations in relation to consultations/ addressing the needs of waste stakeholders and the design of policies and operations.
	When you think of waste produced at the household level, who do you imagine is most responsible for its disposal? Men? Women? Children?	
	How is the waste managed? What happens to it? Were women consulted when designing the municipal waste management?	
	Does the municipality have any partnership for waste management with private companies and/or civil society groups and/or individual community leaders?	
	How much of the waste is recycled? Who is managing the waste (at the different levels)?	Understanding perceptions of different needs at the household level for general waste management services. For example, because of time constraints due their various responsibilities (e.g. cooking, cleaning, laundry and family health), women may prefer door-to-door waste collection, rather than a drop-off central collection point.
	Does your department have sufficient resources to handle your community's waste demand?	
	What is the biggest waste need not yet met?	
	How many people are working/managing waste services at the municipal level? How many are male, how many are female and what is the age range?	
	From your experience, do women and men have different needs, skills, knowledge and expertise when it comes to waste management and waste issues? Can you give us examples? (It is important to ask for examples as these will make the report stronger, as well as the data collected through the interview questions).	
	Can you explain further, why women and men have different needs, skills, knowledge and expertise?	
	Who is responsible for what tasks (male and female distribution of roles) within your department?	
	Are there opportunities to progress in specific roles or to change position?	
	Are you aware of gender inclusive policies for the waste sector?	

Table 2. *continued*

	Leading questions	*Reasoning for the questions*
	How do you plan for waste management? • Do you undertake community/household consultations and/or listen to feedback? • How are such consultations planned and carried out? (i.e. do they consider both men and women's ability to participate? Is there a gender balance within your own team?) • Do you collect data that include gender information? • Have you (with your partner cities or companies) arranged training, workshops and/or knowledge-sharing opportunities for your technicians, experts and policymakers to learn about better waste management practices? How do you communicate with your stakeholders? • How do you target and develop messages? • Do you think it is important (or would be a good idea) to target different messages to women and to men? Do you do this? Could you?	

Table 3. Formal operation levels

	Leading questions	*Reasoning for the questions*
Private sector (collection and landfill)	What types of waste are managed and how much? How is the waste managed? Who manages the waste (at the different levels: men, women, children)? What are the impacts of mismanagement? Are there sufficient resources? How many people are working/managing waste services at your company? How many are male, how many are female and what is the age range? What roles do men and women undertake in your company? From your experience, do women and men have different skills, knowledge and expertise regarding waste management and waste issues? Can you give provide examples? Does your company have any policies in place to actively encourage women or men to work in certain positions? (Gender quota or policy?) Are there any specific requirements? Is there an opportunity to progress in specific roles or to change position? What are the safety measures at work, how are they communicated and to whom? How do you plan your day to day activities? • Do you undertake community/household consultations and/or listen to feedback? • How are such consultations planned and carried out? (i.e. do they consider both men's and women's ability to participate? Is there a gender balance within your own team?) • Do you collect data that include gender information? Does your company arrange training, workshops and/or knowledge-sharing opportunities for your technicians and experts to learn about better waste management technologies and practices? How do you communicate with your stakeholders? How do you target and develop messages?	Gender data at the private sector level and respective roles and responsibilities. Perception of skills. Presence of any policies.
Private sector (Recycling)	What types of waste are managed and how much? How is the waste separated? Who separates the waste? Does it depend on individual household, municipality, your company or partners? Who is responsible for transporting the recycling materials to the recycling facilities? Who manages the waste (at the different levels: men, women, children)? What are the impacts of mismanagement? Are there sufficient resources?	Gender data and knowledge at the private sector level. Exposure and safety measures and the extent to which they are gender sensitive.

Table 3. *continued*

	Leading questions	*Reasoning for the questions*
	How many people are working/managing waste services at the municipal level? How many are male, how many are female and what is the age range? From your experience, do women and men have different skills, knowledge and expertise regarding waste management and waste issues? Can you give provide examples? What roles do men and women undertake? Does your company have any policies in place to actively encourage women or men to work in certain positions? (Gender quota or policy?) Are there any specific requirements? Is there an opportunity to progress in specific roles or to change position? What are the safety measures at work, how are they communicated and to whom? How do you plan your activities? • Do you undertake community/household consultations and/or listen to feedback? • How are such consultations planned and carried out? (i.e. do they consider both men's and women's ability to participate? Is there a gender balance within your own team?) • Do you organize town hall meetings and/or surveys to gather the opinions of your co-workers, who work on the ground to collect recycling materials and process them at the recycling at the facilities, in order to improve the service? How do you communicate with your stakeholders? How do you target and develop messages?	

Table 4. Informal sector

	Leading questions	*Reasoning for the questions*
Landfill pickers	Who does what? Who makes the decisions about who does what? Who brings waste to the recycling points? Who receives reimbursement? What do your husbands or wives think about your job (as landfill pickers)? Are there any domestic conflicts and violence as a result of your job (as landfill pickers)?	Divisions of labour. Mobility. Access to resources. Mapping out responsibilities of men and women.
Informal collection (e.g. door picking, bicycle collection)	Who is involved in informal waste collection? Are you/they organized and how? Who organizes informal waste collection? Who receives reimbursement? How is the relationship with the municipality and/or any waste disposal/recycling companies? Do you think there is good mutual understanding and respect? If so, who in your group takes the initiative to communicate with them (male/female)? If not, do you see any difficulties and/or conflicts in your work, which you would like to improve?	Divisions of labour. Access to resources. Safety measures.
Informal recycling	Similar questions as those above (who does what, who makes the decisions, who controls profits, etc.)	
From informal to formal	Has there ever been an occurrence of women being excluded from the newly paid work?	Potential risks for women (and men) currently involved in the informal waste sector as it becomes formalized.

Annex 2: Objectives of gender mainstreaming in the waste sector

Target areas	Result-oriented and gender-responsive approach
Household waste generation	Men and women receive information and training on household recycling, reusing materials and composting. Men and women receive information, tools and education on waste separation for recycling. Men and women receive information, tools and education on waste minimization. Men and women receive information on the value of waste and are encouraged to increase their recycling. Men and women receive information and training on waste hazards.
Formal waste management	Equal representation and roles of men and women are secured. Equal opportunities for jobs and equal compensation are secured. Men and women have equal social benefits. Men and women have equal safety precautions.
Informal waste management	Men and women have equal opportunities when the informal sector becomes formalized. Men and women have equal safety precautions. Compensation is distributed equally. Men and women are equally involved in community efforts.
Governance and institutions	Gender equality is enacted at national and/or municipality levels. Gender capacity-building and training is provided at all levels. Research and data collection capture the contributions of women and men in the informal and formal sectors.
Waste collection and infrastructure	Operations and stakeholder communications address possible gender-differentiated needs. Community decision-making about waste disposal takes into account gender inequalities and seeks to ensure that women have equal participation in processes. Stakeholders in the design and management of municipal waste services are informed about gender issues, including women's specific needs.
Waste recycling and minimization	Households and householders' unpaid labour receive recognition for diverting and managing waste.
Effects of poor waste management	Information and training are provided to men and women at all levels of the waste system.

Annex 3: Summary of feedback during the stakeholder consultation in Mongolia, April 2019

UNEP-IETC, together with the national partner, The Asia Foundation, carried out stakeholder consultations in April 2019, as part of a stakeholder workshop on mainstreaming gender in waste management. This annex includes highlights of key findings and policy considerations discussed during the consultation.

The main comments received from the stakeholders as issues that could be further studied include:

1) Installing waste segregation bins at the household level and involving both men and women in household waste segregation

2) Waste and gender training for policymakers and other stakeholders

3) Developing internal rules and regulations in gender mainstreaming for stakeholders working in the sector

4) Parents' provision of knowledge (both mother and father) on waste segregation at the household level

5) Training on waste segregation in the workplace

6) Developing policies for waste segregation that consider gender mainstreaming

7) Detailed study at the household level focused on waste and gender

8) Raising public awareness and providing the public with information via social media on importance of gender mainstreaming in the waste sector

9) Information-sharing and awareness-raising on gender mainstreaming.

Annex 4: Summary of feedback during the stakeholder consultation in Nepal, April 2019

UNEP-IETC, together with the national partner, LEAD Nepal, carried out stakeholder consultations in April 2019, as part of a stakeholder workshop on mainstreaming gender in waste management.

The main comments received from the stakeholders as issues that could be further studied include:

1) Awareness-raising on the issue of waste burning on the street in Kathmandu and any gender aspect

2) Awareness-raising campaigns, particularly in schools, to share practical knowledge, such as the health and safety issues of disposing sanitary pads

3) Respect for waste workers and de-stigmatization (including through raising awareness on gender and/or cultural stereotypes as well as roles and responsibilities, and the creation of "blue jobs" by providing social security, for example)

4) Plastic waste management practices by women's groups and individual women, and the need to further encourage women to be entrepreneurs or engaged in the business as alternative livelihood options (e.g. start-up businesses that produce plastic alternatives, such as cotton/paper bags)

5) Emphasis on health and safety issues associated with handling waste (especially of workers at the transfer stations and landfills)

6) Encouragement of women to be agents of change not only at the household level, but also at every sphere (such as the community, local and/or national governments and the private sector).

Annex 5: Summary of feedback during the stakeholder consultation in Bhutan, April 2019

UNEP-IETC, together with the national partner, WWF Bhutan, carried out stakeholder consultations in April 2019 as part of a stakeholder workshop on mainstreaming gender in waste management.

The main comments received from the stakeholders as issues that could be further studied include:

1) Stigma attached to waste jobs (especially low-paying jobs that are mainly carried out by women)

2) Segregation at the source implemented, but more education, awareness and advocacy is required

3) Health and safety issues of children and youth (including babies with their working mothers)

4) Education, advocacy and awareness-raising especially with a focus on emphasizing the dignity of labour and educating on waste management and its benefits

5) The recent unsustainable consumption pattern (how to reduce waste at the source)

6) Limited resources (both human and economic) and public participation in waste management

7) Encouraging corporate social responsibility (CSR) and extended producer responsibility (EPR) (including CSR from media for advocacy programmes).

Waste, unwanted and discarded material, is a growing problem worldwide that concerns everyone. Waste management is a cross-cutting issue linked to socioeconomic and environmental aspects. Sound waste management can address a number of challenges, particularly those relating to health, poverty, food security, resource management, climate change and equal participation.

Over the past few years, the issue of gender in waste management has received increasing attention, highlighting that waste production and management is not gender neutral. In fact, existing gender inequalities, responsibilities and roles largely shape the position of waste in many social and economic systems. This report examines the relationship between gender and waste through case studies carried out in the capital cities of Bhutan (Thimphu), Mongolia (Ulaanbaatar) and Nepal (Kathmandu).

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