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1 Gendered Impression of Water Scarcity: The Impact of Water 2 Scarcity on Women's Lives from Gender Perspectives

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6

7 **Abstract**

8 This paper intends to examine the water crisis issue from the perspective of gender. In order
9 to accomplish this goal, the article has first discussed a few challenges that are unique to
10 women and girls as a result of their gender position in society. After that, I discussed the
11 reasons why gender should be addressed in relation to water issues. Secondary data were used
12 for this research which was then followed by qualitative analysis. The findings of this study
13 indicate that women are more susceptible to water-borne and waterrelated diseases and they
14 also experience severe pain in various parts of the body as a result of manually carrying heavy
15 weights of water. Moreover, they are exposed to problems and diseases related to sanitation
16 and hygiene and experience difficulties with reproductive health. The study also explored that
17 they become victims of sexual harassment, rape, and other forms of violence while collecting
18 water.

19

20 **Index terms**— gender; water scarcity; gender division of labour; gender inclusive water policy.

21 **1 Introduction**

22 The lack of available water presents people with a myriad of hurdles and difficulties (Rahman et al. 2017). However,
23 women confront a number of challenges that are unique to them as a result of the gender roles that are traditionally
24 assigned to them (Karim et al. 2012; Sigenu 2006). Because of the gendered roles that they traditionally play in
25 the home, women have strong ties to water. As a result, they are more likely to be negatively impacted if there
26 is a disturbance or turbulence in the water quality and quantity in a particular area. A lack of available water
27 has repercussions on the lives of women and has an effect on their physical and reproductive health, as well as
28 their social life and sense of safety (Ngomuo & Msoka 2018).

29 Women are closely connected to water irrespective of all societies because they are responsible for the collection,
30 preservation, maintenance, and management of water sources, in addition to the use of water in the day-to-day
31 activities of their households (Irura 2008; Sigenu 2006). Women collect water to be used for drinking, washing,
32 taking regular baths, sanitation, and any other reason the family may need. There is a need for water from
33 every member of the family, but there is only one person who can gather and organize it for the family's needs:
34 the women (Ngomuo & Msoka 2018). In localities where there are insufficient supplies of potable water, it is
35 necessary for women to travel great distances in order to get their water supply, which presents them with a
36 number of challenges (Karim et al. 2012). Therefore, any issues that are associated with water are more likely
37 to affect women than males in the household (Baguma et al. 2013; Caruso 2016). Even though everyone in
38 society is impacted by water shortage (Rahman et al. 2017), women face an extra obstacle and are affected
39 differently by this issue owing to the suppression of their gender roles in comparison to males in society ??Lewis
40 & Writer n.d.). This is a problem that eventually affects everyone in society. This research will concentrate on
41 the unique water-related challenges that women experience while collecting water in areas where there are few
42 or no accessible sources of clean water. After that, there will be a discussion on the significance of incorporating
43 a gender perspective into initiatives relating to water in order to improve the current situation for women. To

5 FINDINGS AND ANALYSIS

44 do so, the study explored the responses to the following questions: What challenges do women experience as
45 a result of limited access to water and the need to collect water? How exactly does the gendered division of
46 labour make life more difficult for women? Why should gender be considered when making decisions on water
47 and planning projects? a) Rationale of the study Most studies on water scarcity commonly mention that women
48 and girls are responsible for household water collection (Geere & Cortobius 2017; Sigenu 2006), but we rarely ask
49 the questions-what are the gender-differentiated impacts of this responsibility and why "women" are primarily
50 responsible for household water collection, rather than men. The answer lies in the gender division of labour
51 in our society (Baguma et al. 2013), which divides indoor nonproductive work into women's work and public
52 productive work into men's work, that is called the public-private dichotomy. This makes the gendered division of
53 labour seem to be a natural order while in reality, it is a socially manufactured phenomenon. As a result, all of the
54 tasks associated with running a family are delegated to women without any acknowledgement or questioning from
55 society (Baguma et al. 2013; Karim et al. 2012). Therefore, this research has focused to explore these commonly
56 unasked questions. Exploring these questions is necessary to contribute to the knowledge level by highlighting
57 the gendered experiences of women due to water scarcity and the necessity of developing gender-inclusive water
58 policies and interventions.

59 2 b) Limitations of the study

60 This research was carried out in July and August of 2020, during the COVID-19 epidemic, when there were
61 restrictions placed on the mobility of people. As a consequence of this, the data for the research came from
62 secondary sources. Primary data may have provided a lot of additional dimensions; however, owing to the
63 challenging circumstances and time constraints that were present at the time, this was not feasible. In terms of
64 the potential future scope of the study, this research may be carried out on a more extensive scale in order to
65 collect further empirical data. Researchers might conduct this study using primary data on a wider scale in order
66 to more broadly generalize the results and add empirical evidence.

67 3 II.

68 4 Methodology

69 This research is underpinned by feminist research methodology. Feminist methodology reveals the questions from
70 the perspective of women's experiences. It also uses women's perspectives as a significant indicator of the reality
71 against which hypotheses are tested ??Harding 1987). This study focused on feminist epistemology because
72 it was primarily concerned with women and their differing experiences and perceptions from those of men. It
73 has tried to reveal women's different reality because of water scarcity and the responsibility to collect water,
74 which men do not experience ever. This research is qualitative research based on secondary data. The data was
75 collected in 2020 while COVID-19 restrictions were ongoing. Therefore, fieldwork wasn't conducted to collect
76 primary data. Secondary data has been collected from online academic books, research articles, government
77 and non-government reports, and print and electronic media reports. These information sources were accessed
78 from Google Scholar, Scopus, Google, and the Australian National University (ANU) library database. The
79 secondary data was searched and narrowed down through specific keywords. Critical literature review and case
80 study methods are applied to investigate the research questions.

81 5 Findings and Analysis

82 ? Water scarcity and water-related diseases Women do not drink the required quantity of water that a human
83 being should drink consistently in order to maintain their health since there is a shortage of water and a lack
84 of understanding. Women are more likely to miss drinking water in order to save water or, in certain regions,
85 in order to avoid going to the toilet because of sanitation concerns (Ngomuo & Msoka 2018). Both of these
86 behaviours put them at a greater risk for a number of illnesses, including those that are caused by inadequate
87 water intake. Because of this, individuals also suffer from a wide variety of diseases that are caused by a deficiency
88 of water in the body. Some examples of these disorders include infections of the kidneys and urine, amongst
89 others. Lack of access to safe water often causes diarrheal diseases (Abedin et al. 2019). This is particularly
90 true of children and women. Consuming water from any source that might potentially be contaminated poses
91 serious health risks (Abedin et al. 2019). The health of families and the economy of society are both negatively
92 impacted as a result of these disorders (Barech & Ainuddin 2019). If women and children are often affected by
93 these illnesses, then they are more likely to become weak, malnourished, and susceptible, and they are unable
94 to engage in other forms of productive labour (Ngomuo & Msoka 2018). Even if they are unwell, women are
95 not allowed to take time off from their obligations in the home; instead, they are expected to do their tasks
96 even if they are incapacitated. In addition to this, women are the ones who take care of ill children, which is
97 an additional obligation that falls on their shoulders. In a larger context, the expense of one's time, as well as
98 medical care, has economic implications (Barech & Ainuddin 2019).

99 6 ? Physical problems

100 Women endure various forms of physical difficulties as a consequence of carrying a large weight on their heads
101 or waists for extended periods of time in order to gather water from a great distance (Barech & Ainuddin 2019;
102 Pahwaringira et. al 2017). Sometimes, in order to satisfy the need for water inside their households, women are
103 required to do the task of water collecting many times each day. As a result, carrying excessive amounts of water
104 might result in a wide variety of long-term and short-term diseases and discomforts to the body. The women who
105 are responsible for collecting water often complain of experiencing discomfort in their neck, spine, waist, back,
106 and spine-related issues, as well as headaches. According to research carried out by Geere, who is both a lecturer
107 at the Norwich Medical School at the University of East Anglia and a physiotherapist, 69% of the people who
108 participated in the study had spinal pain, and 38% of women have back pain (Geere, Hunter & Jagals 2010).

109 These strenuous tasks, which require women to move heavy objects and carry water many times a day, leave
110 them feeling fatigued (Barech & Ainuddin 2019; Otufale & Coster 2012). In addition to the women who reported
111 experiencing physical discomfort, some women indicated that even if they haven't noticed any medical concerns,
112 they nevertheless feel exhausted when engaging in these activities. Because this is one of the household chores
113 for women among dozens of other household chores (Hallett 2016; Otufale & Coster 2012). Hallett brought up
114 Ben Crow's viewpoint on the amount of time women spend working, which is that women often have less time
115 to relax and sleep in order to do all of their tasks (household responsibilities and others). They have to spend
116 a significant amount of time gathering and storing water, which is time that they might have spent doing other
117 tasks or relaxing instead.

118 Some research has referred to cases of women's health being permanently damaged as a result of carrying
119 water (Barech & Ainuddin 2019). These cases include chronic fatigue, spinal and pelvic deformities, a threat to
120 reproductive health and an impact on that health, such as high-risk pregnancies and an increased incidence of
121 abortions ??Abedin et

122 7 ? Concerns Relating to Hygiene and Sanitation

123 Since there is not enough water available, women are unable to properly maintain sanitary facilities. The
124 challenges that women face with regard to water, sanitation, and hygiene are inextricably linked (Ngomuo &
125 Msoka 2018). A whole circle of women's vulnerability is being created as a result of one issue triggering a
126 problem for another issue. In places where there is a shortage of water and sanitation facilities, women may
127 consume less water and food in order to reduce the number of times they need to defecate or to keep themselves
128 under control until nightfall in order to gain privacy when defecating in the open. This allows them to conserve
129 water and also helps them address the issue of a lack of adequate sanitation systems in their households or in
130 the surrounding area (Barech & Ainuddin 2019; World vision n.d.)

131 While women and girls do not have access to sufficient water for personal hygiene during menstruation,
132 pregnancy, or other times when their bodies are particularly vulnerable, then they face an increased risk of
133 infection, bacterial diseases, and sexually transmitted diseases, in addition to other medical issues (Gahungere
134 2008; Ngomuo & Msoka 2018). The health and cleanliness practices of mothers have a direct bearing on the
135 general well-being of their families (Ngomuo & Msoka 2018). If mothers have poor lifestyle choices that put their
136 health at risk and cause their children to develop chronic illnesses. Moreover, Year 2022 C such behaviours will
137 be passed on to the next generation and continue the cycle.

138 8 ? Violence and insecurity

139 Water scarcity and lack of water sources in close proximity increase the risk of violence and insecurities among
140 women (Karim et al. 2012). Having to travel a long distance or lonely path to get water sources puts women
141 in a much more vulnerable position. Women who go long distances alone to gather water often be subjected to
142 eve-teasing, marital violence or other forms of sexual harassment ??Karim et ??014) shared that, women who
143 have to collect water from a distant place or well during the lean period, are subject to domestic violence because
144 they sometimes fail to fulfil their other household chores in due time. The report by Médecins Sans Frontières
145 titled "The Crushing Burden of Rape-Sexual Violence in Darfur" which was published in 2005 mentioned that
146 in Darfur, 82% of almost 500 women were treated for rape attacks while they were doing household work such as
147 water fetching or firewood collection just within five months. Rape, sexual attacks, and eve-teasing occur while
148 the women get out to collect water from a distant water source and go alone (Ngomuo & Msoka 2018). Even
149 though they are aware that they run the danger of being subjected to sexual assault or rape, women in certain
150 societies are expected to go out for defecation in groups before dawn and after sunset, when it is still dark outside
151 and there is no access to clean water or sanitation facilities (Sweetman & Medland 2017).

152 9 ? Gender division of labour

153 The majority of the responsibility for obtaining water for domestic tasks and storing it for later use falls on
154 women (Baguma et al. 2013). However, despite the fact that men also need water for their day-to-day activities,
155 they are seldom held accountable for the water collecting process (Musa 2008). Women are the only ones who
156 collect water, but males perform the role of builder in-home water management, which includes activities like
157 digging wells and constructing tanks, among other things (Rahman et al. 2017). Additionally, men are in charge

11 ? OPPORTUNITY COSTS

158 of making choices on water management in a family. In addition, men are in charge of the water outdoors, which
159 may be used for irrigation or any other reason (Karim et al. 2012). As a result of the gender division of labour,
160 women are given unpaid job that lacks respect or authority (Baguma et al. 2013). Hence, the task of taking
161 care of the family falls completely on women, despite the fact that there is no biological relationship between
162 completing these works and being a woman. On the other hand, males are often tasked with public works, which
163 are tasks that are compensated for and acknowledged as having economic worth. As a result, males have more
164 economic power than women do in the majority of nations.

165 10 ? An increase in workload

166 Research conducted in 24 Sub-Saharan African countries suggests that women are the main water collectors
167 who spend on average more than 30 minutes daily collecting water, and the involvement of women in water
168 management ranges from 46% to 90% (Graham et. al 2016;Otufale & Coster 2012). As our culture is male-
169 dominated, the unpaid job of home chores has traditionally been assigned to women. This work is done without
170 any appreciation, and it is regarded as rather common from a sociological standpoint. In most cases, males do
171 not contribute to the upkeep of the family, which means that women are exclusively responsible for all aspects of
172 domestic life (Karim et al. 2012; ??OAWR 2008). Because women need water throughout the day for activities
173 like cooking, washing, cleaning, maintaining personal and family hygiene, and so on, the fact that they do not
174 get sufficient water in comparison to their demand impedes their normal job (Ngomuo & Msoka 2018; Tshabatau
175 2021). Safe water supplies in the home, such as tap water, tube wells, ponds, or any other kind of processed
176 water source, may dramatically lessen the amount of work pressure that women are under and allow them more
177 breathing room within their otherwise packed daily schedules. But if they have to gather water from a faraway
178 area by walking and standing in line for a significant amount of time, then this increases the amount of labour
179 that women have to do and the amount of time they spend working (Karim et al. 2012;Tshabatau 2021). Women
180 spend more than hours every day tending to meet the water requirements of their families and walk an average of
181 10 km daily to collect water (Tshabatau 2021). Women in some regions of Africa devote a significant portion of
182 their days-up to eight hours-to the task of gathering water, which is a significant proportion of their time (Facts
183 about women and water n.d.; Tshabatau 2021). Where there is a lack of access to water, this is an extra task
184 that falls on the shoulders of women, which results in an increase in both their working hours and their workload
185 (Karim et al. 2012).

186 11 ? Opportunity costs

187 Women and girls bear a disproportionate share of the opportunity costs associated with water shortages (Karim
188 et al. 2012). These opportunity costs include lower levels of education and employment, worse health, and lower
189 levels of national productivity. Both the women's time and the energy they put into collecting and processing
190 water may have been put to better use elsewhere (Tshabatau 2021). Girls who are tasked with the responsibility
191 of water collection often sneak out of class to do their duties. According to the findings of one research, many
192 young women in South Asia and Africa choose not to attend a school or give up their education altogether so
193 that they may spend more time helping their moms gather water (Gahungere 2008). If we were to translate the
194 amount of time that women spend on water collection and management into monetary worth, we would see that
195 we are missing out on a significant amount of value that might be contributing to our national productivity and
196 revenue (Tshabatau 2021). It is estimated that women in India spend 150 million working days each year to
197 collect water, which is equivalent to 10 billion rupees per year that India loses from its national revenue (NCW
198 n.d.). It was said in Drop4Drop (2016) that the time that women and girls in sub-Saharan African countries
199 spend on water collecting is equivalent to forty billion hours, which is time that they might have utilized for other
200 things in their life.

201 IV. Why Gender should be Included in Water Policies?

202 The problems that have been discussed here are not new nor unheard of. On the subject of water shortage
203 difficulties, different types of studies have been conducted, and numerous conversations have taken place;
204 nonetheless, this problem has not yet been solved. In spite of the tremendous efforts made by local, national,
205 and international development organizations, the pace of improvement is quite sluggish. The most important
206 aspect of this topic that I wanted to highlight is the fact that a lack of water has a gendered aspect to it, and
207 if we want to find a long-term solution, we need to engage the group "women," who are often the ones that are
208 connected and impacted by water issues. However, in the majority of instances, their perspectives are not heard.
209 When it comes to issues concerning taking control of, power exercise or the administration of water resources,
210 the majority of the time it is males who take the initiative and oversee the involvement (Rahman et al. 2017).

211 For instance, based on the researcher's personal experience of living in a southern coastal area of Bangladesh
212 known as Koyra in the Khulna division, where there are very few sources of safe drinking water due to the
213 high salinity in the water, she found that there is a high gender disparity between water collectors and water
214 decision-making power holders. This was one of the things that stood out to her during her time there. In
215 those areas, drinkable water sources are being provided by a number of national and international organizations,
216 including World Vision, Plan Bangladesh, Shushilan, and Podokkhep (Abedin et al. 2014). These water sources
217 are managed by local people through water management committees (Rahman et al. 2017).

218 However, the majority of the members of the water management committee were males. There were a few
219 female members there who were either organizational members or local representatives.

220 Women who were directly linked with water collection and management were not members of any committee
221 that is responsible for management or decision-making about water sources. As we've seen in the discussion, in
222 most societies, the task of gathering water falls under the purview of the female population. The primary reason
223 for this is the way our society constructs gender roles. In a society that is dominated by men, the gender division
224 of labour typically entails women performing unpaid work in the private sector and men performing paid work
225 in the public sector. Men are never taught that the task of taking care of the family is a joint obligation in which
226 they should both engage equally (Baguma et al. 2013). In addition, under a patriarchal culture, women are seen
227 as weak, which leads males to believe that women are helpless and subject to violence or domination.

228 Therefore, in order to lessen the severity of these difficulties and reduce the gender gap in water management,
229 we need to prioritize gender equality concerns in any intervention involving water (Baguma et al. 2013); failing
230 to do so would prevent us from reaching long-term resolutions. It is highly crucial to listen to the voices of women
231 since they can represent true circumstances from their own empirical viewpoint. To acquire empirical knowledge
232 about the issue and identify solutions that are both effective and sustainable, all interventions relating to water
233 should consider gender to be an important element in the design of the intervention and pay special attention to
234 the opinions of women, who are most involved with water.

235 V.

236 **12 Concluding Remarks**

237 Issues relating to the collection and management of water are intricately connected to gender problems. This
238 article discussed several concerns that are caused by a lack of water that is only encountered by women and girls.
239 Women have to collect water to meet the water demand of the whole household. They walk extra miles and
240 spend a substantial number of hours collecting water which affects several aspects of their lives. Women suffer
241 from physical pain, discomforts, illness and waterborne diseases due to water scarcity and lack of access to safe
242 water. They lack proper hygiene and sanitation facilities which hamper their reproductive health as well as their
243 family health. They also become victims of sexual harassment and violence while collecting and managing water.
244 Moreover, women pay high opportunity costs in their lives to fulfilling the responsibility of water collection.
245 Young girls and women get deprived of education, employment opportunities, health facilities, and low or no
246 amount of rest time in their life. This study discussed that gender division of labour is one of the crucial reasons
for this disparity of responsibility for water collection and management in society. Therefore,¹



Figure 1: Figure 2 :



Figure 2: C

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¹Gendered Impression of Water Scarcity: The Impact of Water Scarcity on Women's Lives from Gender Perspectives

Figure 3:

Figure 4:

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250 we should emphasise on gender perspective to improve the situation.

251 Finally, this study discussed the importance of incorporating a gender perspective into all water policies and
 252 projects so that any water-related interventions benefit all inhabitants of the society irrespective of their gender
 253 and ensure their access to safe water. To do so, a few suggestions were made here. These include addressing
 254 gender perspective in water policy, technology, and distribution; increasing female participation in water
 255 management committees and projects; ensuring gender-sensitive policymaking and women's active participation
 256 in policymaking; raising awareness of gender issues among community members; and, most importantly, redefining
 257 men's roles in household work to achieve a more equitable distribution of labour.

258 [World Vision n.d. (ed.) (2019)] *Access to clean water -essential for womens health and safety / World Vision*
 259 *Australia*, [https://www.worldvision.com.au/global-issues/work-we-do/climate-change/](https://www.worldvision.com.au/global-issues/work-we-do/climate-change/access-to-clean-water-essential-for-women)
 260 *access-to-clean-water-essential-for-women* Year 2022 C World Vision n.d. (ed.) 24 April 2019.

261 [Graham et al. ()] 'An Analysis of Water Collection Labor among Women and Children in 24 Sub-Saharan
 262 African Countries'. J P Graham , M Hirai , S.-S Kim . 10.1371/journal.pone.0155981. [https://doi.org/](https://doi.org/10.1371/journal.pone.0155981)
 263 *PLOS ONE* 2016. 11 (6) .

264 [Rahman et al. ()] 'Assessment of fresh water security in coastal Bangladesh: An insight from salinity, community
 265 perception and adaptation'. M T U Rahman , Md Rasheduzzaman , M A Habib , A Ahmed , S M Tareq
 266 , S M Muniruzzaman . 10.1016/j.ocecoaman.2016.12.005. [https://doi.org/10.1016/j.ocecoaman.](https://doi.org/10.1016/j.ocecoaman.2016.12.005)
 267 *Ocean & Coastal Management* 2017. 137 p. .

268 [Gahungere (2008)] 'Burundi: Access to water is a human right'. C Gahungere . [http://www.soawr.org/](http://www.soawr.org/sites/default/files/soawr_wom_wat_san.pdf)
 269 *sites/default/files/soawr_wom_wat_san.pdf* *Pambazuka News* 2008. April 2019.

270 [Abedin et al. ()] 'Climate Change, Water Scarcity, and Health Adaptation in Southwestern Coastal Bangladesh'.
 271 Md A Abedin , A E Collins , U Habiba , R Shaw . 10.1007/s13753-018-0211-8. [https://doi.org/10.](https://doi.org/10.1007/s13753-018-0211-8)
 272 *International Journal of Disaster Risk Science* 2019. 10 (1) p. .

273 [Abedin et al. ()] 'Community Perception and Adaptation to Safe Drinking Water Scarcity: Salinity, Arsenic,
 274 and Drought Risks in Coastal Bangladesh'. Md A Abedin , U Habiba , R Shaw . 10.1007/s13753-014-0021-6.
 275 <https://doi.org/10.1007/s13753-014-0021-6> *International Journal of Disaster Risk Science* 2014.
 276 5 (2) p. .

277 [Geere et al. ()] 'Domestic water carrying and its implications for health: A review and mixed methods pilot
 278 study in Limpopo Province'. J Geere , P Hunter , P Jagals . 10.1186/1476-069X-9-52. [https://doi.org/](https://doi.org/10.1186/1476-069X-9-52)
 279 *South Africa. Environmental Health : A Global Access Science Source* 2010. 9 (1) p. 52.

281 [Ngomuo and Msoka ()] 'Effects of Water Scarcity on Women in Pastoral Areas: A Case Study of Melela Ward
 282 in Mvomero District -Morogoro'. A Ngomuo , A Msoka . [http://www.journals.udsm.ac.tz/index.](http://www.journals.udsm.ac.tz/index.php/uj/article/view/1344)
 283 *php/uj/article/view/1344* *Tanzania. Utalifi Journal* 2018. 9 (1 & 2) . (Article 1 & 2.)

284 [Gender and water, and sanitation in Mozambique | Pambazuka News Solidarity for African Women's rights ()]
 285 'Gender and water, and sanitation in Mozambique | Pambazuka News'. *Solidarity for African Women's*
 286 *rights*, 2008. p. 17.

287 [Otufale and Coster ()] 'Impact of Water Scarcity and Drudgery of Water Collection on Women' Health in Ogun
 288 of Nigeria'. G A Otufale , A S Coster . 10.1080/09709274.2012.11906493. [https://doi.org/10.1080/](https://doi.org/10.1080/09709274.2012.11906493)
 289 *Journal of Human Ecology* 2012. 39 (1) p. .

290 [Sweetman and Medland ()] 'Introduction: Gender and water, sanitation and hygiene'. C Sweetman , L Medland
 291 . 10.1080/13552074.2017.1349867. <https://doi.org/10.1080/13552074.2017.1349867> *Gender &*
 292 *Development* 2017. 25 (2) p. .

293 [Hallett (2016)] *Millions Of Women Take A Long Walk With A 40-Pound Water Can*, *NPR.org*,
 294 V Hallett . [https://www.npr.org/sections/goatsandsoda/2016/07/07/484793736/](https://www.npr.org/sections/goatsandsoda/2016/07/07/484793736/millions-of-women-take-a-long-walk-with-a-40-pound-water-can)
 295 *millions-of-women-take-a-long-walk-with-a-40-pound-water-can* 2016. 24 April 2019.

296 [Baguma et al. ()] 'Safe-water shortages, gender perspectives, and related challenges in developing countries:
 297 The case of Uganda'. D Baguma , J H Hashim , S M Aljunid , W Loiskandl . 10.1016/j.scitotenv.2012.10.004.
 298 <https://doi.org/10.1016/j.scitotenv.2012.10.004> *Science of The Total Environment* 2013. 442
 299 p. .

300 [The Crushing Burden of Rape -Sexual Violence in Darfur Médecins Sans Frontières (2005)] 'The Crushing
 301 Burden of Rape -Sexual Violence in Darfur'. <https://www.loc.gov/item/lcwa00088995/> *Médecins*
 302 *Sans Frontières*, (Library of Congress, Washington, D.C. 20540 USA, pdf) 2005. 24 April 2019.

303 [Barech and Ainuddin ()] 'The Impact Of Water Scarcity On Women In Rural Area In Quetta'. S Barech , S
 304 Ainuddin . 10.46568/pjgs.v18i1.29. <https://doi.org/10.46568/pjgs.v18i1.29> *Pakistan Journal of*
 305 *Gender Studies* 2019. 18 (1) p. .

12 CONCLUDING REMARKS

306 [Pahwaringira et al. ()] 'The Impacts of Water Shortages on Women's Time-Space Activities in the High Density
307 Suburb of Mabvuku in Harare'. L Pahwaringira , L Chaminuka , K Muranda-Kaseke . *The Journal of Gender*
308 and Water 2017. 2 (1) p. .

309 [Sigenu ()] *The role of rural women in mitigating water scarcity*, K Sigenu . <http://scholar.ufs.ac.za/xmlui/handle/11660/1610> 2006.

311 [To empower women, give them better access to water, The Conversation (2016)] *To empower women, give them better access to water*, The Conversation, <http://theconversation.com/to-empower-women-give-them-better-access-to-water-56244> 2016. 24 April 2019.

314 [Drop4drop (2016)] *Water and women: the importance of gender inclusive development*' Drop4Drop, Drop4drop
315 . <https://drop4drop.org/woman-water/> 2016. 11 January 2016, viewed 24 April 2019.

316 [Lewis and Writer (2019)] *Water and Womens Inequality*, The Water Project, L & Lewis , D Writer . <https://thewaterproject.org/water-scarcity/women-and-water-inequality> 24 April 2019.

318 [Karim et al. ()] *Water Development Projects and Marital Violence: Experiences From Rural Bangladesh*.
319 *Health Care for Women International*, K M R Karim , M Emmelin , B P Resurreccion , S Wamala .
320 10.1080/07399332.2011.603861. <https://doi.org/10.1080/07399332.2011.603861> 2012. 33 p. .

321 [Geere and Cortobius ()] 'Who Carries the Weight of Water? Fetching Water in Rural and Urban Areas and the
322 Implications for Water Security'. J Geere , M Cortobius . *Water Alternatives* 2017. 10 p. .

323 [Tshabatau ()] *Women and water scarcity in Botswana: Challenges and strategies in Kweneng District -The case*
324 *study of Gakuto Village*, M Tshabatau . urn=urn:nbn:se:uu:diva-434108. <http://urn.kb.se/resolve/2021>.

326 [Musa (2008)] 'Women and Water: A report by the National Commission for Women | India Water Portal'. R
327 Musa . http://www.soawr.org/sites/default/files/soawr_wom_wat_san.pdf18 National Com-
328 mission for Women 2008. 17 April 2019. NCW. (Gender perspective on water and sanitation | Pambazuka
329 News)

330 [Irura (2008)] *Women, water and sanitation: going the extra mile* / Pambazuka News, C Irura . <https://www.pambazuka.org/gender-minorities/women-water-and-sanitation-going-extra-mile> 2008.
331 24 April 2019.