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1 **CHAPTER 14: GENDER AND INCLUSIVE DEVELOPMENT**

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48 **CHAPTER OVERVIEW****KEY FINDINGS**

- 1. Women in the Hindu Kush Himalaya (HKH) are a heterogeneous group, with overlapping identities that allow for multiple and conflicting relationships of inequality and exclusion – complexities that do not appear in the available national data.** Discussions on gender and social inclusion in the HKH are distorted by country statistics that use deceptive aggregate measurements, obscuring the diversity of women in the region.
- 2. Only grounded and context-specific studies can illuminate complex gender relations and reveal how these relations are affected by climate change – and by adaptation efforts and interventions.** Women’s specific roles, identities, and needs vary with their situation. Explaining these differences and how they interact with particular changes and interventions requires a flexible mix of qualitative and quantitative approaches.
- 3. Notwithstanding the diversity among women’s experiences, case studies from six countries suggest that many women in the HKH are increasingly losing access to resources and opportunities – even as male outmigration continues to shift male-specific responsibilities onto women.** This trend is reinforced by established formal institutions and cultural norms.
- 4. Policies on land tenure and employment have disadvantaged rural women, especially in poor and remote mountain areas.** Such policies typically undervalue rural women’s critical roles in food security, sustainable agriculture, and natural resource management.
- 5. Making development and adaptation efforts more gender inclusive and socially inclusive will require addressing contextually determined relations of inequality at the household, community, and other institutional levels.** Such efforts are more likely to lead to sustained, transformative outcomes when based on longitudinal studies that explore how climate change affects various groups of women and men, both separately and jointly.

49

POLICY MESSAGES

- 1. Policy makers speak of climate change impacts, climate mitigation, and adaptation strategies and interventions and yet there are few detailed analyses of how climate change coexists with other changes and the impacts of these on the everyday lives and livelihoods of different groups of women and men across the diverse HKH.** Therefore, policy makers need to acknowledge that experiences of climate change, and responses to climate change, reflect intersecting factors of age, caste, class, gender, and ethnicity.
- 2. Policies for climate change adaptation must not further feminize responsibilities in ways that cause women to be even more disproportionately affected.**
- 3. Women’s engagement and participation in climate change policy making and on-the-ground interventions should follow a logic that is empowering and promotes women’s rights – not one that is dictated solely by efficiency.** Engaging women in climate interventions that add

to their burdens or assuming simplistic women-environmental links have long been shown to be disproportionately negative for women.

4. Development actors should question the heavy reliance of policy on techno-scientific and managerial solutions – a bias that can prevent adaptation efforts from addressing context-specific human dynamics and needs (and that may be traced in part to the field’s masculine working culture).

50

51 Climate change and extreme weather events in combination with socioeconomic processes and
52 opportunities have an especially severe impact on groups living in remote mountain areas of the
53 Hindu Kush Himalaya (HKH). Along with climate, the socioeconomic processes and opportunities
54 often have much bigger, and much more immediate effects, on the livelihoods of poor people. For
55 instance, urbanisation and globalisation has led to aspirations and consumerism, which is a big push
56 factor for migration. Unreliable rural and agricultural outcomes are seen to result in an increasing
57 outmigration of men seeking better livelihoods for their families. This can leave women with heavier
58 work burdens – increasing responsibilities in agriculture, the household, and community life. It
59 might also provide women with a complex, newfound ‘independence’. (well established)

60 This shift in women’s and men’s responsibilities has not been matched by a corresponding shift in
61 policies and attitudes about gender. Further, even as gender inequalities develop in an increasingly
62 complex manner – the contextual political and economic situations across different HKH countries
63 intersecting with class, caste, religion, age and ethnicity – there are continued assumptions made
64 around a single homologous class of ‘mountain’ women.

65 Nonetheless, there is evidence that across the HKH women, and often also men, of poor households
66 are losing access to resources and opportunities: a trend reinforced by the changing nature of
67 development as well as by conservative cultural norms. For example, policies on land tenure and
68 employment disadvantage rural women and men – especially those in poor remote mountainous
69 areas – by undervaluing their critical roles in food security, sustainable agriculture, and natural
70 resource management. (established but incomplete)

71 Featuring six country case studies (Bangladesh, China, India, Myanmar, Nepal, and Pakistan), this
72 chapter presents a grounded view of diverse climate change impacts on women and on men in
73 various parts of the HKH. It also explores the further influence of other social differentials such as
74 age, class, caste, religion, and ethnicity. Although we still know less than we should about the
75 gender-differentiated effects of climate change, particularly in the context of limited economic
76 opportunities in mountain areas, our case studies begin to illuminate the relative quality of women’s
77 and men’s lives, livelihoods, and access to resources under equally changing socioeconomic and
78 political conditions. (established but incomplete)

79 As we assess the intersections of gender and social equity under conditions of climate change and
80 social change in the HKH, we also look at how climate-related institutional interventions respond –
81 or fail to respond – to the complex and diverse realities of lives on the ground. To this end, we
82 reflect critically on gender and social inclusion in development policies and processes. We find that
83 linear, techno-managerial approaches to climate governance fail to recognize the complexity of
84 women’s and men’s realities in the context of climate change. We see an urgent need to move

85 beyond simplistic one-size-fits-all solutions — ‘quick fixes’ for gender equality and women’s
86 empowerment — and towards more disaggregated, nuanced, and gender-inclusive approaches.
87 (established but incomplete)

88 *Problematic understanding of gender*

89 Most often, the understanding of gender is simplistic: it is equated to women, particularly poor rural
90 women. Therefore, more often than not gender is understood as a grassroots women’s issue. Notions
91 of gender are simplified in policy making, and reduced to the inclusion of some “poor women”. This
92 simplistic and apolitical interpretation and way of integrating gender in climate interventions and
93 policies poses a huge problem, which manifests in the assumption that engaging women on projects
94 is taking care of women’s needs and as women’s empowerment. (well established)

95 Furthermore, there is the paradoxical positioning of homogenous categories of “mountain women”
96 as being both “vulnerable victims” of climate change as well as “formidable champions” of climate
97 adaptation. This has led to extreme approaches in policies: a welfare approach in which women are
98 taken as passive beneficiaries or as “fixers” of the environment and assuming their “volunteer” time
99 in projects. (well established)

100 Related to the above is the focus on numbers and quotas as measures of change and progress, rather
101 than on the structural issues of inequality and discrimination. A major problem is the overlooking of
102 gender relations between women and men, between women, and between men. (well established)

103 *The empirical problem: How data aggregation obscures women’s complex experiences in the HKH*

104 Women in the HKH are not a homogeneous group. Gender difference intersect with other social
105 differentiations such as class, caste, ethnicity, and age. Women are thus marked by multiple,
106 coexisting identities that create overlapping — and often conflicting — relations of inequality and
107 hierarchy, inclusion and exclusion. (well established)

108 The available national data on women in HKH countries do not reflect this diversity and
109 intersectionality, because they rely on aggregate measurements. Part of the problem is that
110 aggregated country data may not be representative of the mountain areas, which (except in Bhutan
111 and Nepal) form only a portion of HKH countries’ national territories. This lack of mountain
112 specificity could help to explain, for example, why the 2014 Gender Inequality Index varies so widely
113 across the HKH, from China with the lowest inequality to Afghanistan with the highest. (established
114 but incomplete)

115 Another problem is that empirical data on the impacts of climate change are often presented in
116 aggregate terms, reflecting an unfounded assumption that climate change affects people uniformly.
117 To obtain data that are disaggregated by gender and other social differences, more longitudinal and
118 in-depth studies are needed — studies describing how climate change affects different groups of
119 women and men, separately and jointly, reconfiguring their access to assets and resources and
120 defining their wellbeing and vulnerabilities. We need numbers to measure the patterns and trends of
121 impacts, as well as qualitative studies to capture the complex contexts of people’s experiences with
122 climate change. (well established)

123 Despite the lack of systematic, disaggregated data on gender issues in the HKH, the Gender
124 Inequality Index at least suggests that women do not form a monolithic group across the region, and

125 that their vulnerability trajectories are likely to diverge. Our case studies confirm that women's
126 experiences in the HKH are multiple and differentiated, sometimes contradictory, and, in some cases,
127 effect new chains of vulnerability. (well established)

128 We are conscious that current knowledge on gender and climate change does not tell the full story:
129 we cannot yet disentangle the forces that mediate climate change impacts and responses for women
130 and for men across different social groups. Only by unraveling the lived realities of people and their
131 ecologies can we hope to contextualize the numbers and seek situated options. (well established)

132 *Questions about interventions: How to engage women and men of disadvantaged groups?*

133 Policies and programs have long focused on the functional rather than the structural aspects of
134 gender. In most sectors, gender mainstreaming policies have applied the concept of gender narrowly,
135 often as a synonym for "poor rural women" — and without further differentiation of these women's
136 needs, interests, emotions, identities, and roles. As a result, these policies produce technocratic
137 quick fixes that place unrealistic burdens on women already in poverty. (well established)

138 To be sure, today's technocratic programs include women in economic development. Yet this
139 inclusion is rationalized only by an appeal to economic gain. While the pursuit of economic
140 efficiency can offer women economic opportunities, it does not fully address their unequal power
141 relations with men. (established but incomplete)

142 Accordingly, stakeholders need to focus more on context. They should recognize not only women's
143 vulnerabilities but also how the masculinity of men contributes to gender imbalances. Interventions
144 must shift their attention to the structures that underlie gender inequality. This work calls for long-
145 term political engagement. (well established)

146 *Exploring "feminisation of responsibilities" and addressing a masculine working culture*

147 Researchers and policy makers need a more nuanced and critical understanding of how women, in
148 climate change contexts, assume disproportionate shares of responsibilities — the agricultural
149 labour, reproductive work, and other labour that supports community welfare. These shifts may
150 occur as men choose migration, often actively supported by their wives and daughters, or as extreme
151 events makes more people infirm and in need of care. (established but incomplete)

152 Unfortunately, as such responsibilities are transferred to women, a gendered rhetoric of
153 'feminisation of responsibilities' can arise. Within this rhetoric women may be assigned new 'caring'
154 roles as 'climate agents', expected to adapt to climate change and cushion its adverse effects on their
155 households and communities. Such rhetoric has the effect of adding climate change adaptation to the
156 list — already long — of women's caring roles. (established but incomplete)

157 As important as it is to analyse the rhetoric of women's roles, men's roles also require attention,
158 especially at the science and policy levels. Most knowledge and policy in the natural resource
159 management (NRM) sector is designed and executed by male professionals. How does masculinity
160 mediate our relationship to the environment and governance? Progressive policies in irrigation and
161 water planning, for example, will require that we address masculine working culture in this sector.
162 When engineers and experts adhere to a sectoral culture of male hegemony, their reason may be that
163 their credibility depends on upholding professional norms — and yet, paradoxically, these same
164 professionals may be the ones charged with formulating and implementing policies that promote

165 diversity, gender equality, and social inclusion, in response to a rising concern about equity in policy
166 circles. (established but incomplete)

167 Such challenging discussions of development practice can improve our preparedness for climate and
168 natural resource management. Without professional and critical self-reflection, we have little reason
169 to assume that new policies will succeed any more than past efforts to increase gender equality,
170 women's empowerment, social inclusion, and climate change adaptation. (established but
171 incomplete)

172 *A vision for gender-inclusive, socially inclusive development in the HKH by 2030*

173 In conclusion, we set forth a vision of inclusive development for the HKH complementing, and in the
174 spirit of, the Sustainable Development Goals adopted by the global community in 2015: By 2030,
175 environmental governance processes, policies, and strategies at scale (from local to global) are
176 gender inclusive and cognizant of the mosaic of nested, uniquely diverse, dynamic, and mostly
177 gender-inequitable socio-ecological systems in the HKH.

INCLUSIVE DEVELOPMENT AND SDG 5 – ACHIEVE GENDER EQUALITY AND EMPOWER ALL WOMEN AND GIRLS

While a singular goal, Sustainable Development Goal 5 also bears on all the other SDGs. Each SDG builds on assumptions about gender. And each has further implications for equality and women's empowerment. These connections among SDGs are all the more relevant to the HKH, where so many women in mountain areas perform multiple roles: in the household, in agriculture, and in natural resource management.

Reaching SDG 5, for example, presupposes reaching SDG 2: *End hunger, achieve food security and improved nutrition, and promote sustainable agriculture*. And more specifically, it presupposes achieving SDG target 2.3: *By 2030, double the agricultural productivity and incomes of small-scale food producers, in particular women, indigenous peoples, family farmers, pastoralists, and fishers, including through secure and equal access to land, other productive resources and inputs, knowledge, financial services, markets and opportunities for value addition, and non-farm employment*.

Achieving SDG 5 means addressing SDG 6: *Ensure availability and sustainable management of water and sanitation for all*.

Again, SDG 5 is related to SDG 15: *Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss*.

Generally, development actors need to integrate gender inclusion and social inclusion into all the SDG targets and indicators – and to be alert to the likelihood that exclusions will arise as goals are addressed.

178

179 **14.1 CONTEXT AND PARTICULARITIES TO GENDER AND SOCIAL INCLUSION IN THE** 180 **HKH**

181 The Hindu Kush Himalaya (HKH) are considered to be one of the most ecologically sensitive areas in
182 the world. Although data is limited and contested, it is generally agreed that the effects of climate
183 change are predicted to happen here “first” and with the greatest intensity (Singh et al. 2011: iv).
184 What is less well known is how the effects of climate change will impact the geography and
185 geologically diverse mountain ecosystems and, in turn, the lives, livelihoods, and resources of a
186 socio-politically, economically, and culturally diverse mountain community across the region.

187 In this chapter we draw attention to the fact that climate change problems and solutions are largely
188 techno-centric in design. Jasanoff (2010) notes that “modern science” has framed climate change as a
189 global phenomenon that “detaches knowledge from meaning”. Technical observations of more easily
190 measurable phenomena such as changes in temperature and precipitation undermine attention to
191 the understanding of the uniquely embedded local experiences of people as well as “social
192 institutions and ethical commitments at four levels: communal, political, spatial and temporal”
193 (Jasanoff 2010: 233). In other words, little is known about how changes in climate will result in
194 complex changes in the quality of lives, livelihoods, and resources of diverse groups of people living
195 in different socio-political contexts. We argue that, especially in the HKH, it is important and
196 necessary to creatively link “abstract generalizations, specificity and objectivity” of climate science
197 and climate interventions with contextually relevant “scales of social meanings”, experiences, and
198 subjectivities (Jasanoff, 2010: 235).

199 In this chapter, we focus on unpacking popular assumptions related to climate change and proposed
200 climate interventions using a social relations approach (SRA) and feminist political ecology (FPE)
201 framework. For this work, we provide case studies that demonstrate the complex workings of gender
202 relations in the context of climate change in the HKH. Specifically, these case studies highlight the
203 unique, embodied experiences of climate change and how gender power relations affect green
204 economy interventions.

BOX 14.1: WHAT IS GENDER?

Gender refers to socially constructed roles, responsibilities, and opportunities associated with men and women, as well as hidden power structures that govern the relationships between them. Inequality between the sexes is not due to biological factors, but is determined by the learnt, unequal, and inequitable treatment socially accorded to women (UNDP 2010).

Social differentiations and identities based on class, caste, ethnicity, age, and other factors intersect with gender relations in different ways. Therefore, addressing gender issues while seeing women as a monolithic group presents challenges.

205 The chapter aims to critically assess two primary issues:

- 206 • The intersections between gender and social equity with climate change in the context of
207 changing realities across the HKH; and
- 208 • How climate-related institutional interventions respond — or do not respond — to the
209 complex and diverse realities of people’s lives on the ground.

210 In this assessment we combine the SRA and FPE approaches (Box 14.2). The social relations approach
211 departs from narrow, technical interpretations of gender as women and of women and men as
212 isolated categories, thus shifting away from the rather “impersonal, apolitical, and universal
213 imaginary of climate change [impacts and interventions], projected and endorsed by science”
214 (Jasanoff 2010: 235). Feminist political ecology, meanwhile, is concerned with an intersectional
215 analysis on gender-environment relations that actively considers gender in combination with social
216 factors such as race, ethnicity, caste, class, age, disability, and others. There are thus several
217 similarities between the SRA and FPE frameworks in their aim to capture the complexity of gender-
218 power relations, to unpack the gendered nature of institutions at scale, and to map the interactions
219 between policies, practices, and ground realities at different institutional locations (Hillenbrand et
220 al. 2014).

BOX 14.2: SOCIAL RELATIONS APPROACH AND FEMINIST POLITICAL ECOLOGY FRAMEWORKS

The social relations approach (SRA) focuses on the nature and construct of inequality as determined through distributions of resources, responsibilities, and power. Secondly, it emphasizes the analysis of relationships between people, their relationship to resources and activities, and how these are reworked across institutional levels in specific contexts – from the household to formal and informal institutions including the state and the market. Finally, the SRA emphasizes that the overall goal of development interventions is and should be human wellbeing and not just economic growth (Kabeer 1994; Kabeer and Subrahmanian 1996:25).

Feminist political ecology (FPE) recognises the close interlinkages of gender with other social categories and differences in gender-environment relations, and points out that resource-related relationships relate to “women’s particular circumstances” (Molyneux 2007:231). These circumstances not only interact with class, caste, race, culture, and ethnicity to shape processes of ecological change; they also differ in different social, political, and economic settings dynamically shaping “gender as a critical variable in shaping resource access and control” (Rocheleau et al. 1996:4). FPE recognizes the importance of conducting ‘science from below’ or examining people’s embodied experiences of resource degradation, disasters, mobility, and displacement as these connect with other scales of power and decision making (Harding 2008; Hanson 2015). FPE interrogates knowledge production, governance, and policy making, as they herald new forms of environmental governance that may be inflected with assumptions that deepen differentiated and unjust life opportunities (Jasanoff 2010).

221 Mountain people have a crucial roles in natural resource management and climate change
222 adaptation. To understand the situation of the HKH it is important to examine the drivers of change
223 behind gendered lives and livelihoods. The livelihoods of mountain communities in the HKH are still
224 largely agrarian: agriculture, livestock, and management of natural resources. Coping strategies
225 include migration, wage and casual labour, and labour-intensive household management and income
226 generation through small-scale trade (Leduc 2009). Natural resource management also figures
227 heavily into community-based and individual/household coping strategies, drawing from a rich
228 traditional culture and knowledge about this topic.

229 Climate change occurs within a context of myriad other drivers of change that have evolved over
230 time. The processes of globalisation, regionalisation, and economic liberalisation are connecting

231 markets and reconfiguring economic relations, interactions, and dependencies. While global birth
232 rates are leveling, population continues to grow rapidly in the HKH, placing additional stress on
233 urban environments and infrastructure in contexts without sufficient government policies to curb
234 the trends (UN-HABITAT 2007; Karki et al. 2011). These trends have also meant opening up
235 mountain communities to a wider world of institutional arrangements, relationships, and
236 opportunities, and the emergence of a consumer class that is shaping new aspirations and desires,
237 sculpted by a culture of money (GoN 2014). In tandem, these trends alter land-human relationships,
238 affecting how people use, access, control, and manage natural resources (Jodha 2007). In this
239 process, local knowledge systems are rendered obsolete while giving rise to new bodies of
240 information, creating new livelihood systems, and setting in motion new patterns of consumption
241 and acquisition, as well as “reconfiguring people’s relationships to one another, within and across
242 households and communities . . . within and among state institutions and other macro agencies”
243 (Gurung and Bisht 2014:5). Furthermore, rural to urban migrants — largely young men — seek off-
244 farm employment leading to changing demographic patterns, with growing elderly rural populations
245 and the ‘feminisation’ of farm and non-farm activities in terms of production, exchange, and
246 distribution.

247 These factors or drivers are affecting women and men differently and changing gender roles and
248 relations, leading to a widening of the differences between women’s and men’s income-earning and
249 asset-controlling possibilities (Nellemann et. al. 2011; Sogani 2013; Bastola et al. 2015; Nibanupudi
250 and Khadka 2015).

251 **14.2 CLIMATE CHANGE AND GENDER: EXPERIENCES FROM BELOW**

252 Few studies focus on understanding gendered impacts due to changing climate in the HKH (Ogra and
253 Badola 2015). In this context, it is critical to recognize and understand that gender does not equate to
254 women: there is no single class of HKH women, and no universality of experience in regard to climate
255 change impacts. Understanding the complexities of diverse nature-society interrelations in the
256 context of climate change in the HKH requires a viewpoint from below. Climate impacts,
257 vulnerabilities, and risks and opportunities in the HKH are shaped by disparities in gender, class,
258 caste, ethnicity, and religion, which in turn mutually re-shape national and local social, political, and
259 economic contexts.

260 The consensual presentation, imaginary positioning and mainstreaming of climate change as a global
261 problem and urgently so for all (Swyngedouw 2010: 213) is mirrored in the way ‘mountain women’ in
262 particular are positioned as both victims *and* champions of climate change. A May 2016 overview
263 from the UN Framework Convention on Climate Change speaks of “women commonly fac[ing] higher
264 risks and greater burdens from the impacts of climate change in situations of poverty, [as] the
265 majority of the world’s poor are women. Yet, women [are also noted] to [be able to] play a critical role
266 in response to climate change due to their local knowledge of and leadership [potential] in
267 sustainable resource management at the household and community level”. Such generalizations are
268 especially prominent in popular discourse of climate and mountain women in the HKH (Joshi
269 2014:247). There are countless stories of mountain women who, through their experience,
270 responsibilities, and strength, are reported to play a much stronger role than men in the
271 management of ecosystem services and food security, and therefore in climate change adaptation
272 (Nellemann et al. 2011). Mountain women’s knowledge, capability, and commitment to the

273 environment and their families are used to highlight their ability to adapt in extreme situations such
274 as conflict, natural disasters, and displacement (Leduc 2010). Such narratives create persuasive
275 arguments that mountain women are critical actors in mitigating and adapting to climate change.
276 But what is also important to consider is that despite the critical roles, women in the HKH face
277 challenging situations and positions as they carry out these important roles.

278 This section of the chapter focuses on how gender and other social relations are negotiated with
279 increasing climate variability. Within similar geographical regions, cultures, ethnicities, castes, and
280 ecological settings, discriminative practices are likely to intensify with increasing environmental
281 change (Bhattarai et al. 2015). In this context, we explore gender-differentiated access and control
282 over resources and its impact on women and men in the HKH (Carvajal-Escobar et al. 2008).

283 **14.2.1 Cases**

284 Due to a lack of large-scale data, and a lack of cases from all HKH countries, we focus on
285 representative case studies to show the inter-linkages between gender and climate change. Some
286 specific case studies presented from India, Nepal, Pakistan, Bangladesh, Myanmar, and China
287 highlight the manifestation of gender vulnerability and women's roles from the HKH. Overall, this
288 subsection problematizes the interplay of gender and other social differences that are superimposed
289 on climate change impacts and create multiple and differential vulnerabilities for the poor and
290 marginalised women and men. Since the cases cited here vary on topics, the data also vary. However,
291 all the cases examine the existing gender and social relations in the HKH and how these relations are
292 being aggravated due to climate change impacts.

293 **14.2.1.1 Bangladesh – Women vulnerable to disaster**

294 The case of Bangladesh demonstrates how water-related hazards interact with gender power
295 differentials to create situations where men and women cope, differently experience, and suffer
296 hazards and disasters (Sultana 2010). Women are feared to be more vulnerable to climate-induced
297 water-related stresses and extreme events like floods (Brody et al. 2008; Dankelman 2008) and there
298 is ample evidence that during natural disasters, women and girls are more prone to mortality
299 compared to men and boys. In Bangladesh, the 1991 cyclones and floods claimed more female lives
300 than male: Amongst females 10 and older, girls and women were three times more likely to have
301 perished (Bern et al. 1993; Twigg 2004; Parikh 2007; Roehr 2007). In contrast, the mortality rate of
302 men in both flood- and salinity-prone areas was only 17% of the total (Golam et al. 2009). This higher
303 female death rate has been attributed to gender norms on what men or women should do in a
304 disaster or the resources they have at their disposal (Chowdhury et al. 1993; Nelson et al. 2002;
305 Neumayer and Plümper 2007; WEDO 2008; Dasgupta et al. 2010; Sharmin and Islam 2013).

306 For example, early warning signals had not reached large numbers of women because the
307 information had been disseminated primarily in public places to which many women do not have
308 easy access; and even when women received warnings they were constrained by cultural norms that
309 restrict women's freedom of movement in public – that is, women were not allowed to leave their
310 houses without a male relative, and many women waited for their husbands to return home to take
311 the decision to evacuate, thereby losing precious time that might have saved their lives and those of
312 their children (D'Cunha 1997; UNEP 1997; Parikh 2007; Sharmin and Islam 2013). Furthermore,
313 conditions in cyclone shelters were not suited to women's needs and thus impacted negatively on a

314 positive response; the shelters were ill-designed and insensitive to gender- and culture-specific
315 needs — large numbers of men and women huddled together, which is not acceptable in Bangladeshi
316 culture. There were also no separate toilets for men and women, poor water, and no toiletries like
317 sanitary pads. All these problems enhanced the discomfort for menstruating, pregnant, and lactating
318 women (Baden et al. 1994; D’Cunha 1997). Similarly, a rapid gender field survey conducted in 2007
319 on Cyclone Sidr relief efforts found that after the storm, women were vulnerable to harassment,
320 violence, famine, and sexual trafficking; the study also found that women were less likely to take off
321 clothing, such as their long saris, during floods and these got caught in the floating debris, increasing
322 their chances of drowning (Khan 2012). Thus, the differences in the gendered divisions of roles and
323 labour, gendered rights, structures of decision making, and women’s weak bargaining power within
324 the household result in women facing more suffering — including sexual assault — before, during,
325 and after each disaster event.

326 Apart from the extreme impacts that affect daily lives, women are responsible for providing water for
327 their families; therefore, such climate-related water stresses and gender inequalities aggravate the
328 situation for women and girls in a number of ways. In Bangladesh, even when there is severe
329 disruption of local freshwater sources following floods, cyclones, and saline intrusion, women are
330 responsible, irrespective of their physical condition, to provide drinking-water for their families for
331 which they must walk long distances — sometimes up to 10 kilometres every day over rough terrain
332 — in search of water, consuming an enormous amount of their time and effort (WEDO 2008). After
333 floods, day-to-day tasks such as cooking and cleaning the house become more time-consuming due
334 to rising water levels. Women are often compelled to raise their stoves or go to neighbours’ houses to
335 prepare food (World Bank 2010). When the flood waters are particularly high, women go out on
336 shallow-bottomed boats some distance to find the privacy to relieve themselves. Lack of supplies, the
337 impossibility of disposal, and the problems of keeping oneself clean make menstruation particularly
338 challenging. For many, the trauma of past experiences with the spate of water-borne diseases
339 continues to linger long after the event (Mehta 2007).

340 **14.2.1.2 China – Recognizing farming women’s contributions**

341 China’s rapid industrialization, urbanisation, and marketization since the 1980s has meant farmers
342 cannot survive on farming alone due to small average landholdings (0.6 hectare); therefore, many
343 have been forced to adapt their coping strategies. At this point the “one household, two sectors”
344 approach (husband in the city, wife on the farm) was adopted by many families. In this situation,
345 rural women had to assume greater responsibility for agricultural production on top of their domestic
346 and childcare duties. This is especially true in the poorer remote mountain areas in southwest China,
347 which has a rich agricultural biodiversity that lends itself to using bio-culture farming systems as an
348 adaptation strategy to support rural livelihoods and strengthen food security for the region.

349 The 2012 research carried out by the Centre of Chinese Agriculture Policy (CCAP) of Chinese
350 Academy of Science revealed that globalisation, rapid development, and climate change had
351 delivered serious impacts to local food systems: severe droughts, increased temperature, and extreme
352 weather. As a result, local farming species and landraces were disappearing at an alarming rate, and
353 the existing bio-culture landscape and local seed systems were threatened. These developments have
354 precipitated a rise in social challenges such as extreme poverty, food security issues, increasing
355 environmental degradation, and more frequent natural disasters to small farmers (primarily ethnic

356 women) in remote mountainous areas. Women, as the main cultivators, seed savers, and users are
 357 the most affected by climate changes and at the same time they are the key custodians for farmer
 358 seeds.

359 Two village case studies from the rural areas in Guangxi and Yunnan Provinces illustrate some of the
 360 challenges facing mountain households. Situated in southwest China, Guangxi and Yunnan are home
 361 to most of China's rural poor mountain ethnic minority communities, and have a rising trend of male
 362 migration. Over the past decade, the percentage of migrants in the total labour force in the
 363 communities has grown from 42.56% (2002) to 62.09% (2012) – a 20% increase (Table 14.1). Men
 364 comprise the majority of migrants, though many young women migrate as well.

365 **Table 14.1: Migrants in total labour force and women migrants in Guangxi and Yunnan**

Year	2002	2007	2012
% migrants in total labour force	42.56	55.94	62.09
% women out of total migrants	38.48	39.84	42.06

Data source: Survey of 320 rural households in Guangxi and Yunnan Provinces in 2013
 (Song and Zhang 2015)

366 Case studies show that women are playing a key role in improving agricultural production for their
 367 households when offered the opportunity to make important decisions about the farm. In order to
 368 help farmers in remote mountain villages conserve seeds, improve their preferred landraces, and
 369 redirect benefits, the CCAP team initiated community-based conservation, participatory variety
 370 selection (PVS) trails, and seed production in a number of trial villages in Guangxi and Yunnan
 371 through woman farmer-to-woman farmer exchanges facilitated by the project team. This initiative
 372 led to increased income and food quality for households participating in the programme (Zhang et al.
 373 2016).

374 The participatory plant breeding (PPB) activities continue today in the villages and to date have
 375 conserved more than 100 food crop varieties, improved 15 drought-resistant or quality landraces, and
 376 generated significant value for the women's group from seed production and other value-adding
 377 activities. A women's group in Guzhai village has developed into women-led farmer cooperatives in
 378 10 years. A women's group in a Yunnan village created an idea exchange with the women's
 379 cooperative in Guangxi for learning organic farming. These activities have increased women's
 380 income three times and empowered women and their self-organization (Song and Vernooy 2010;
 381 Zhang et al. 2016).

382 **14.2.1.3 India – Gender structure shaping women's knowledge and experience of** 383 **changing climate**

384 Cases from India show that gender-based impacts of climate change cut across social categories such
 385 as ethnicity and caste, particularly for women from agriculture-dependent households. Income,
 386 migration status, and household size do, however, appear to be crucial aspects for sustainable
 387 livelihood development, and directly related to household assets and overall capacities. Case studies
 388 also reveal that gendered labour practices and other gender norms strongly shape women's
 389 knowledge and experiences of changing climate.

390 Moitra and Kumar (2016) present cases from Uttarakhand, which mapped women’s perceptions of
391 climate change and the challenges they faced as a result. The cases show that in the micro
392 socioeconomic and physical system of the Garhwal Himalaya, substantial temporal and geographical
393 variations in climatic conditions and their multi-fold consequences are deeply impacting women’s
394 lives and increasing their vulnerability. Women’s perceptions of climate change were taken on three
395 counts: changes in the climate, natural disasters and calamities, and their combined impact on the
396 lives of the women. Data showed that women’s perceptions about climate change were not limited
397 merely to the changes in the climate but also extended to the disasters and calamities they were
398 experiencing. The women’s responses indicate that they have been experiencing the changes in
399 climatic patterns through increased intensity in heat and cold waves. The frequency of natural
400 disasters such as landslides and cloudbursts has also increased. These changes have impacted their
401 daily lives through declines in agricultural productivity, fodder and water availability, and increased
402 forest fires.

403 Singh and Singh (2015) document a case of climate-induced water stress on local communities in
404 four districts (Mon, Mokokchung, Tuensang and Kohima) of Nagaland, in the northeastern hills of
405 India. The authors explore how climatic factors inducing water stress interact with non-climatic
406 features in this mountainous region, producing new challenges that are gendered in nature. Singh
407 and Singh report that domestic water access has always been a gendered problem, especially during
408 the dry period of October–March when natural springs and streams in the hills recede in volume.
409 Women and children are forced to walk long distances downhill in search of water. With the onset of
410 climate-related changes, especially through delayed monsoon rains and reduced winter rains, these
411 difficulties have increased manifold as the dry period has almost doubled. These conditions have
412 brought serious consequences for physical health and wellbeing, and thwarted women’s financial
413 stability and children’s education. The findings further state that adaptation to climate-induced
414 water stress at the local level is not dependent upon any externally ‘planned’ action.

415 Ogra and Badola (2015) present a case study from the Nanda Devi Biosphere Reserve in Uttarakhand.
416 The case outlines the implications of climate change for women farmers in the area. In Nanda Devi,
417 household responses to crop failure and decreased agricultural yields are constrained in a range of
418 ways that make it particularly difficult for poor families to enhance or diversify their income sources.
419 For women in poor families, however, the hardship is compounded. Women from cash-poor
420 households, for example, do not have the option of purchasing fuelwood or fodder. Thus, the risks
421 and labour costs that women in the study reported as inherent to their work increase in the absence
422 of alternative assets.

423 **14.2.1.4 Myanmar – Need for a holistic, coherent, and integrated approach**

424 Myanmar is vulnerable to a wide range of hazards including floods, cyclones, earthquakes, landslides,
425 and tsunamis. Over the last decade the country has dealt with the devastating effects of Cyclone
426 Nargis in May 2008, which severely impacted the Ayeyarwady and Yangon Divisions, and Cyclone
427 Giri, which hit Rakhine State in October 2010.

428 Cyclone Nargis hit the Ayeyarwady Division of Myanmar, killing an estimated 130,000 people, of
429 which 60% were women (CARE Canada 2010). The impact was immense and led to massive
430 displacement and decimation of agriculture and infrastructure across the region. An estimated 2.4
431 million people lost their homes and livelihoods (Pender 2009). The cyclone caused devastating

432 damage to the environments of Ayeyarwady and Yangon Divisions, where local livelihoods are
433 heavily reliant on natural resources.

434 In this region, women traditionally play an important role in income generation including small-
435 scale trade, shop-keeping, fish processing, and crafts. They also play a key role in subsistence
436 agriculture, fishing activities, and maintaining food security for their households. However, despite
437 these responsibilities, women have less control over resources than men.

438 Despite having a range of livelihood opportunities, the overwhelming majority of the people living in
439 areas affected by Cyclone Nargis live from harvest to harvest, sometimes relying on loans from
440 moneylenders to tide them over to the next season. Of the loans taken out in the region, 50% go to
441 households that have rights to paddy land, 20% to households that derive their primary income from
442 fishing, and 30% to landless labourers. In such a situation, women who survived the cyclone were left
443 more vulnerable – without family, incomes, livelihoods, homes, or assets, and with little access to
444 quality sexual and reproductive health care or psychosocial support services (Women’s Protection
445 Technical Working Group 2010).

446 In the wake of the cyclone, the UN set up the Protection of Children and Women (PCW) cluster under
447 which both child protection and women’s protection would be addressed (among other protection
448 issues) as autonomous issues, in separate sub-clusters. The Women’s Protection technical working
449 group transitioned into a sub-cluster (WPSC), with the focus on multi-sectoral (protection, gender-
450 based violence, livelihoods, education, health and reproductive health) and cross-cutting (health,
451 psychosocial and legal support) issues faced by women in the context of the cyclone-affected areas.
452 The main reason for this separate cluster was that the PCW had inadvertently created an
453 environment in which women’s issues were addressed only in relation to the relationship of women
454 to children. The assessments conducted by WPSC indicated that despite women (particularly young
455 widows, women separated from their families, and single female heads of households) being
456 identified as the most vulnerable by community members, there was a shortage of approaches
457 targeting their specific needs and experiences – for instance, there was little to no sex and age
458 disaggregated data from any sector, and there were hardly any stand-alone women’s protection
459 programs. This was largely due to the absence of a comprehensive protection coordination structure
460 in the PCW. Programming – even though dubbed ‘community-based’ – overlooked the specific
461 needs and experiences of women, often due to the shortage of sex and age data for all sectors,
462 including protection. Furthermore, sectoral strategies, such as agriculture and fisheries, were
463 essentially gender blind, further contributing to the marginalization of women actively working in
464 these sectors both performing gender-discrete tasks (such as paddy transplanting and fish
465 processing) and working alongside men (Pender 2009).

466 With the formation of the WPSC, a more holistic view, including gender-based violence, was
467 adopted. For instance, the WPSC prioritized the need for holistic support for survivors of gender-
468 based violence, including health, psychosocial, and legal resources. Not only did the program
469 increase the scope of gender-based violence work, but it also allowed gender mainstreaming to be
470 addressed in practical, tangible ways, supported the implementation of more comprehensive
471 assessments, and empowered women through livelihoods, education, and comprehensive health
472 care. It was a highly efficient coordination structure which took gender mainstreaming from an
473 abstract concept to a practically implemented, cross-sectoral strategy and priority.

474 A key lesson from this case is that sustainable livelihoods require a coherent and integrated approach
475 across a number of sectors, including water, shelter, livelihoods and food security, education and
476 training, sanitation and hygiene, and disaster risk reduction. At the same time, these sectoral
477 approaches will need to be augmented by capacity building and institutional strengthening for
478 national and local governments as well as civil society to create an enabling framework at the
479 national level to provide laws and policies that support sustainable development, and a reliable
480 information base on the environment (UNEP 2009; UNEP 2012).

481 **14.2.1.5 Nepal – Climate variability and gendered differentiation**

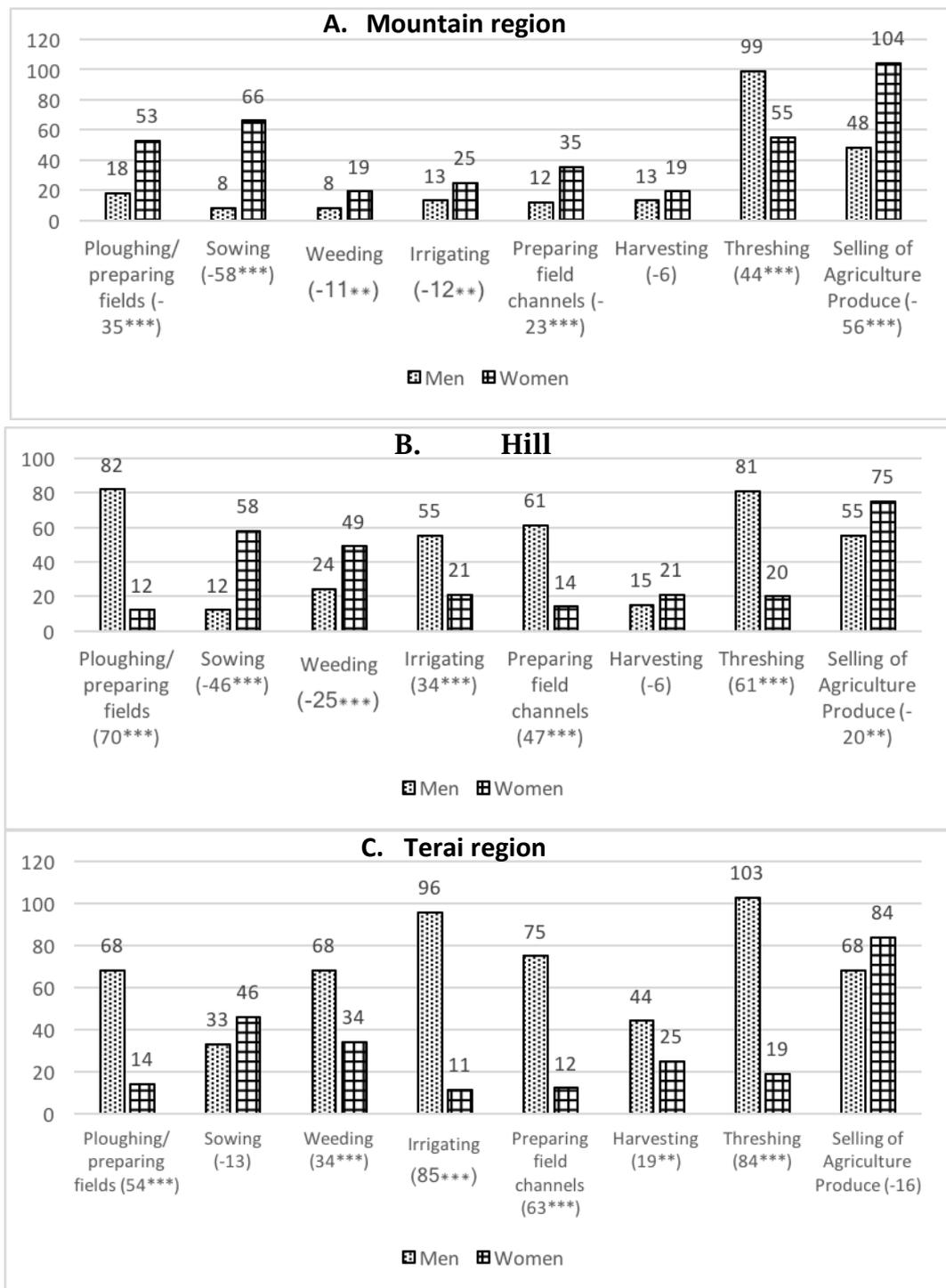
482 Bastola et al. (2015) recently conducted a study to understand perceptions of climate change impacts
483 across the mountain, hill, and Terai regions in the Central Development Region of Nepal. They posed
484 important questions on how the adverse impacts of a changing environment shaped gender and
485 social relations, and added more weight to women’s workloads to provide care and support of family
486 members while also managing the production spheres.

487 This study illustrates the lack of effort undertaken to understand how climate change differentially
488 impacts women and men, and how little is known about the links between climate change, gender,
489 and other social stratifiers. This situation is exacerbated by the fact that little gender disaggregated
490 data is available. Moreover, this study supports the findings of other studies (Goh 2012 and Eriksson
491 et al. 2008, among others) that show how climate variability is more likely to increase women’s
492 workloads within the agriculture sector. Figure 14.1 shows gender disaggregated agriculture work in
493 the three geographical regions, indicating that women are increasingly involved in the agriculture
494 work (such as ploughing, sowing, weeding, irrigating, preparing field channels, harvesting, threshing,
495 and selling of agriculture produce).

496 The ratio of women to men in agricultural activities is particularly pronounced in the mountain
497 regions, due primarily to male outmigration for work. Gender disaggregated data on work allocation
498 show two major points that have both positive and negative outcomes. On the positive side, women
499 take control on household economic affairs (selling of agriculture produce) that traditionally were
500 controlled by men. On the other side, there is an increasing feminisation of labour where women are
501 forced to bear more responsibility for agriculture activities, particularly in the mountain region
502 where male outmigration is high (Bettini and Gioli 2015). Bhattarai et al. (2015) share similar
503 findings that at least one man from each household in the mountain region has migrated to Gulf
504 Cooperation Council countries or Malaysia.

505 In cases where both women and men have out-migrated, elderly family members assume the
506 responsibility of farm management, and agricultural land was often left barren (Bastola et al. 2015).
507 In cases of forced migration, we see more severe effects on women who are left behind, as they suffer
508 more often from psychological impacts while adapting to climate change. Over the past years, it is
509 estimated about 8% of the total population have migrated for employment to foreign countries. The
510 total remittances contribute about 29.1% of the national economy (in 2013/2014) (GoN 2014). To
511 build local resilience through income diversification, the Government of Nepal under the Foreign
512 Employment Policy 2012 directs establishment of labour banks. These institutions are yet to be
513 implemented on the ground. Unless policy frameworks with institutional arrangements are in place,
514 forced migration will cause those left behind, particularly the women, children, elderly, and the
515 physically disabled, to remain vulnerable to climate variability (Bettini and Gioli 2015).

516



517 **Figure 14.1:** Number of women and men engaged in various agricultural activities by region. *Notes:* Symbols ***
 518 and ** denote that the difference between proportion of women and men is significant at 0.01 and 0.05 level,
 519 respectively (Z-test). Primary data source: Bastola et al. 2015.

520 In forced migration situations some women have begun to strengthen their access and control over
 521 the economic gains from agriculture (across all central region as shown in Figure 14.1), and the driver
 522 may not necessarily be a consequence of male outmigration. There are several other factors that are
 523 important determinants of gendered vulnerability to climate variability, including geography,
 524 religion, class, and ethnic divisions (Maraseni 2012; Bastola et al. 2015). Until now there has been

525 little focus on women’s capacity, their critical role in managing production in the absence of the
526 male population (Skinner 2011). Therefore, experiences of climate variability are not always
527 disproportionately negative or only negative for women, but in most situations women are likely to
528 experience disproportionately the negative impacts due to the existing social gender structures that
529 favour men (Bhattarai et al. 2015:122).

530 **14.2.1.6 Pakistan**

531 Case studies from Pakistan reflect the lack of focus on gender dimensions in disasters, and
532 demonstrate that vulnerability to disasters and climate change impacts vary depending on gender
533 and are compounded by a wide range of socioeconomic factors including age, material welfare, level
534 of education, politics, and ethnicity.

535 In Pakistan, disaster management authorities have taken useful steps for making disaster response
536 and recovery gender sensitive. For instance, the National Disaster Management Authority (NDMA)
537 has developed guidelines, ‘Disaster Risk Reduction (DRR), Gender and Environment’, with an
538 objective to provide disaster managers with the initial tools as to how the infrastructure and social
539 vulnerability can be taken care of during the disaster. At the provincial level, the Provincial Disaster
540 Management Authority (PDMA) have established ‘Gender and Child Cells’ and developed various
541 codes of conduct to support gender integration during a humanitarian response.

542 However, despite progress shown by NDMA and PDMA in Pakistan, humanitarian response
543 implementation to date has not sufficiently focused on significant gender dimensions (Hamid and
544 Afzal 2013). Gilgit-Baltistan’s Contingency Plan for Floods reveals that vulnerable groups (women,
545 children, elderly, and disabled persons) are neglected in the planning and conduct of relief
546 operations (GDMA 2015:7).

547 A survey of the literature in Pakistan on this topic stresses the need for gender disaggregated data.
548 Though effective adaptation strategies need to address fundamental gender disparities in the disaster
549 relief process, in the absence of robust data, gender analyses will remain inadequate and establishing
550 gender-sensitive needs, response, recovery, and rehabilitation almost impossible (IFCR 2007). At
551 present, only Khyber Pakhtunkhwa PDMA has begun to collect gender disaggregated data. Among
552 their early findings, they state that more women than men died in the rains and cyclone of 2015
553 (PDMA/KP 2015).

554 Studies also show that post-disaster processes of consultation were also poor in terms of collecting
555 gender-disaggregated data. Only men were solicited for information. Consultations with children,
556 pregnant women, the disabled, and other vulnerable groups was insignificant. One explanation for
557 this oversight is that most formal government institutions (including N/PMDAs, irrigation, WAPDA,
558 and disaster-related district administrations) are highly male dominated (Shah 2012; Shah and
559 Memon 2012; Hamid and Afzal 2013).

560 Responses from the field, especially poor communities affected by floods, also reveal that gender is a
561 largely neglected aspect of community infrastructure planning and provision (Shah 2012). However,
562 women, children, the elderly, and the disabled pay a particularly high price for this lack of sensitive
563 infrastructure development. After the floods of 2010 and 2011, it was observed that floods came
564 suddenly, and without an early warning system there was hardly any time for communities to make a
565 timely and planned evacuation (UNIFEM 2010). An analysis of early warning systems conducted by

566 LEAD Pakistan (2015) found that 88 out of the 145 districts of Pakistan were at risk for flood, but only
567 39 districts were covered by early warning systems. It is noteworthy that the majority of women and
568 girls had no independent access to the tools used for communicating flood warnings, such as
569 loudspeakers in mosques, mobile phones, and FM radio. Therefore, merely providing early flood
570 warnings through various media sources may not necessarily ensure that women and other
571 vulnerable groups have information on which to take action (Mustafa et al. 2015).

572 **14.2.2 Social structure, gender, and climate change: Differential vulnerabilities**

573 Climate change conditions have also intensified competition over water and agricultural resources.
574 Tetley and Raza (1998) examined growing outmigration for employment with households
575 increasingly becoming “female managed”, especially in the HKH. The livelihoods of the people in the
576 region are based on agriculture, livestock raising, management of natural resources, migration,
577 labour-intensive household management, and income generation through small-scale trade and
578 wage and casual labour (Leduc and Shrestha 2008). The diminishing subsistence prospects and
579 underemployment in rural areas have pushed (mainly) men into seeking alternative livelihoods in
580 off-farm domains resulting in an increase in, and intensification of, women’s work and role as
581 primary supporters of homesteads and family farms (Mehta 1996; Gurung 1999; Bose 2000; Leduc
582 2009; Sidh and Basu 2011). Thus, over the course of the past decades the feminisation of mountain
583 agriculture has emerged as one of the most pressing issues facing productivity and food security. But
584 the ownership of natural resources like land and forest is confined to more powerful segments of
585 society, primarily men. The agricultural, technical, and institutional support such as extension,
586 credit, and subsidies are offered mainly to men, who are household heads in most cases.

587 Women and minority groups across the HKH are the most affected by the impacts of climate change.
588 In China, the “one household, two sector” phenomenon is often seen as an outcome of globalisation
589 and a changing environment. Women who stay behind take on the agricultural work in addition to
590 other domestic responsibilities to secure the food basket. Case studies from the HKH clearly indicate
591 there is an increasing proportion of feminisation of labour as men out-migrate in search of work in
592 response to climate variability, which makes agriculture less predictable and reliable. However, cases
593 from China show that women are starting to play key roles in managing natural resources for food
594 security, climate change adaptation, and transition to a green economy.

595 There is little information in the HKH to substantiate the differentiated vulnerability of women and
596 men to climate change when considered in light of other social stratifiers. The vulnerability to
597 climate change is rooted in complex social structures, in a way where it interacts differentially with
598 women and men physically, socially, and psychologically (Bohle et al. 1994).

599 Because the HKH stands at heightened risk for natural disasters due to climate change impacts, it has
600 once again raised serious concerns on gender narratives. The question is how such factors intersect
601 with differential vulnerabilities in the event of floods, cyclones, landslides, earthquakes, and other
602 disasters. Drawing experiences from the cases of Myanmar and Pakistan, the impacts of disasters
603 have a detrimental effect on women and marginalised groups which adds to an already formidable
604 burden to provide food, water, and health care. Also, these events expose vulnerable groups to a high
605 risk of violence and bring added livelihood insecurity (IFRC 2007; Neumayer and Plümper 2007;
606 Parikh 2007; Brody et al. 2008; Vincent et al. 2010).

607 The differential impact of climate on gender is apparent in the HKH. For example, a first form of
608 ‘gendered’ vulnerability to climate change relates to labour (Sugden et al. 2014: vii) – women’s
609 workload increases as distances traveled by women increase to access natural resources (such as
610 water, fuelwood, fodder, food, pastures, medicinal plants, fuel, and crops) and as production
611 schedules are affected due to changing environments and climate conditions (Sugden et al. 2014;
612 Bhattarai et al. 2015). Thus it is important to mainstream gender-sensitive approaches when
613 addressing environmental issues in the HKH. However, translating policies into practice remains
614 largely gender blind today. Several crucial points need to be addressed. First, there is a need to
615 identify vulnerable groups in terms of age, disabilities, and social and religious groups and cater to
616 their needs in disaster response to avoid further marginalisation in the process. Second,
617 strengthening of the collaboration between government authorities and humanitarian organizations
618 is required for the gender responsiveness of the relief. I/NGOs can play an important role to build the
619 capacity of government, as well as communities, especially in gender-inclusive development.

620 In spite of these recognised needs, gender-inclusive planning and implementation are not integral to
621 development processes in the developing world (Moser 2012). The HKH is not devoid of this
622 phenomenon. It is also important to recognise the traditional cultures that are women centric and
623 female managed, and if we are to properly address the challenges to mountain communities, this
624 means robust data will be required to confront fundamental gender disparities (Gurung 1998;
625 Tulachan 2001).

626 These broad findings are in line with recent work on gender and climate change. Goh (2012) tests two
627 hypotheses on the gender-differentiated impacts of climate change for women and men in
628 developing countries. The first hypothesis is that climate-related events affect men’s and women’s
629 wellbeing and assets differently. The second hypothesis is that climate-related shocks affect women
630 more negatively than men. Her findings show that climate impacts affect women and men differently
631 and that women tend to suffer more negatively in terms of their assets and wellbeing. Arora-Jonsson
632 (2011: 750) discusses the discourses on women, gender, and climate change from a vulnerability
633 perspective. Focusing on the issue of power relations, the author says:

634 *different power relations are privileged in different situations and class, gender, ethnicity*
635 *or nationality assume importance depending on the context. The specificity of*
636 *vulnerability may differ. A generalized belief in women’s vulnerability silences contextual*
637 *differences. Gender gets treated not as a set of complex and intersecting power relations*
638 *but as a binary phenomenon carrying certain disadvantages for women and women*
639 *alone. The local forms of climate change need to be understood not only as effects but*
640 *men and women’s actions also as constitutive ingredients of climate changes. We need to*
641 *be able to see women like men being responsible for as well as capable agents in*
642 *mitigating climate change without losing track of power relations involved, without*
643 *having to categorise women as vulnerable or virtuous.*

644 What is most critical to consider is the context – the context in which the changes are taking place
645 and that is resulting in the differential vulnerabilities and impacts. This means there is a need to
646 think more critically and creatively about the broader implications of differential vulnerabilities and
647 impacts and ways to address them.

648 **14.3 ENVIRONMENTAL GOVERNANCE AND GENDER IN THE HKH: TOWARDS GREEN** 649 **ECONOMIC GROWTH FOR ALL**

650 Policies and programs have long focused on the functional aspects of climate change, privileging
651 efficiency over structural aspects, such as issues of equality, discrimination and empowerment. They
652 have given importance to engaging women to make development work efficient rather than to bring
653 about change in gender relations by addressing the power relations between men and women.
654 Therefore, it is important that the nature of interventions shift from “technocratic quick-fix[es] to
655 gender inequalities [–] interventions that make unrealistic expectations on women [already] in
656 poverty – to interventions that understand history and context better, ... [and] recognise not only
657 women and their vulnerabilities, but equally men and their masculinities. . . . [T]his calls for a ‘long-
658 haul, deeply political challenge’” (ODI 2007).

659 There is a current urgency to develop a preparedness in climate and NRM governance to reflect on
660 the associations between men, masculinities, and knowledge, especially in relation to the most
661 powerful actor in NRM: the state and its administration. Without such reflection, there are few
662 reasons to assume that new policies for gender empowerment, social inclusion, and climate change
663 adaptation and/or green growth will have any better results than in the past. Most engineers and
664 experts in irrigation and water planning, for instance, are still men and they continue to be trained in
665 a scientific tradition that sees the world as uniform, malleable, and manageable. In this view,
666 speaking and thinking about social differences between women (and men) is considered irrelevant
667 (Zwarteveen 2010). In this context, promoting progressive policies in irrigation and water planning
668 without addressing the masculine working culture in the sector is basically to miss the point
669 (Robbins 2007; Reuss 2008; Wilson 2008). Hence, engineers and experts who need to uphold
670 professional norms to be credible, positioning themselves in relation to a culture of male hegemony
671 in the sector, are made responsible with the formulation and implementation of policies that need to
672 pay attention to social inclusion and diversity.

673 From a gender perspective, the two-way relationship between gender relations and environmental
674 change needs to be understood in the context of green economy. Gender relations have a powerful
675 influence on how environments are used and managed, and hence on patterns of ecological change
676 over time (Leach et al. 1995), and similarly environmental trends and shocks also have an impact on
677 gender relations. Most of the time, there are direct implications such as forest or water degradation
678 and depletion that alter the gendered distribution of resources or encourage gender-based coping
679 strategies.

680 **14.3.1 The green economy: New and old problems of governance**

681 The term ‘green economy’ is defined as an economy that results in improved human wellbeing and
682 social equity, while significantly reducing environmental risks and ecological scarcities. It is low
683 carbon, resource efficient, and socially inclusive (Stone 2011:1–2). Advocates state that a move
684 towards green economy can be profitable where economic growth will be healthier, stronger, and
685 more vigorous with this transformation than without it (Brockington 2012). However, critiques of the
686 green economy (Bullard and Müller 2012; Kosoy et al. 2012; Gupta and Agarwal 2013) argue that
687 politico-economic and cultural constraints need to be considered to create strategies to be successful
688 in achieving the goal of ending environmental degradation and reducing poverty.

689 Environmental governance in the HKH is increasingly tailored towards an outlook of green economic
690 growth. The impetus towards green economic growth has been accelerated as a mitigating response
691 to climate change. This poses old and new questions regarding the shaky connections between social
692 wellbeing, equity, and efforts to ‘green’ economies and sustainable development as a whole. ‘Green
693 growth’ has evolved into a number of contemporary forms in the region, for example: heightened
694 forest conservation efforts to spur carbon trading, bio-energy development, natural park enclosures,
695 increased water regulation to ensure efficient uses, and payments for ecosystem services. Research
696 increasingly shows there may be difficult trade-offs between green growth, environmental
697 sustainability, and social wellbeing (Fairhead et al. 2012; Harcourt and Nelson 2015). As a result,
698 there is growing ambivalence around some so-called green projects. For instance, hydropower
699 development is being promoted as a source of clean energy, but research has demonstrated it may in
700 fact sidestep the wellbeing needs of dislocated communities. Forestry options such as payment-for-
701 ecosystem services and REDD+, as well as standards and certifications applied to the carbon trade
702 and offset projects are envisaged to ensure fair practices, but may implicitly tap women as a reserve,
703 but cheap, army of labour with benefits that remain unclear to them.

704 What seems to be emerging is a new regime of appropriating and managing both nature and society
705 for so-called ‘green’ ends. This new green regime builds on earlier weaknesses of community-based
706 natural resource management. It fails to correct social/gender exclusionary practices and continues
707 to appropriate women’s undervalued labour for green projects. This regime also builds on earlier
708 tokenistic practices to involve women as a social group, often resorting to ‘ticking the box’ exercises
709 to legitimize them as an accounted-for constituency. Despite earlier intentions to apply bottom-up
710 approaches, the state continues to employ community-based natural resource management as an
711 instrument of control of both nature and society, an effort that was once touted as “bureaucratizing
712 communities” (Gauld 2000), increasingly turning these communities into corporate appendages of
713 the state. In today’s natural resource management regimes, more emphasis is also turning towards
714 employing techno-scientific approaches in mitigating climate change and addressing green growth
715 goals.

716 Current efforts to mitigate climate change and spur green growth emphasize efficient management
717 based on scientific, financial, and market-based goals and principles to drive natural resource
718 management (Paudel and Paudel 2013). Green growth projects and natural resource management
719 today attempt to mitigate and adapt to climate change in ways that are de-politicized, masculinized,
720 and male dominated, in an effort to appropriate and ‘tame unruly nature’ (MacGregor 2010;
721 Tschakert 2012; Taylor 2014). This approach in many ways creates persistent silences around the
722 political economic drivers of climate change and the disadvantage and disempowerment that they
723 exacerbate.

724 Therefore, the ‘eagle-eye’ science of popular climate knowledge, science, and environmental
725 governance interventions needs to be complemented by locally contextual ‘toad-eye’ science and
726 interventions. Sustainable development in the HKH demands socially and gender-inclusive climate
727 science and environmental governance policies and strategies.

728 To assess the status of governance of the environment and green economic growth from a gender and
729 social inclusion perspective, this section highlights first the status of gender mainstreaming at the
730 policy and institutional levels and second how these policies tend to unfold on the ground. Then, the
731 current promotion of hydropower development in the HKH as green development is critically

732 assessed and a plea made for a more conscious reflection on the performance of professionals and
733 the ‘masculinity’ of knowledge production in environmental governance itself.

734 **14.3.2 The status of gender mainstreaming at the policy and institutional levels**

735 Most countries in the HKH have now ‘mainstreamed’ gender and social inclusion policies in the
736 various sectors within the domain of environmental governance. Even in sectors in which inequities
737 and social exclusion have long been rendered invisible — such as irrigation and water resources
738 planning — gender and women have now earned a legitimate place in research and policy agendas
739 (Zwarteveen 2006). However, there is little to celebrate when we consider the manner in which
740 gender is interpreted and integrated in climate interventions and policies. The attempts to ‘gender
741 mainstream’ in climate policies, strategies, and interventions remain plagued by simplistic, apolitical
742 interpretations of gender: ‘gender as women’, the paradoxical positioning of homogenous categories
743 of ‘mountain women’ as being both ‘vulnerable victims’ of climate change as well as ‘formidable
744 champions’ of climate adaptation, and the idea that engaging women on projects is taking care of
745 women’s needs and empowering women.

746 Thus, the current status of gender mainstreaming in environmental governance is not only a clear
747 measure of the progress that has been made, but also a reason for deep concern. Two cases — one
748 from Pakistan and one from China — show the largest reason for concern is that gender
749 mainstreaming appears to have been achieved in environmental governance by adopting a very
750 narrow and simplified concept of ‘gender’. The term is essentially used as a synonym with ‘poor
751 (rural) women’. The habit of equating gender issues with (grassroots) women’s issues in development
752 and the modernist idea that women’s empowerment can be implemented top down, seems to do
753 more harm than good (Liebrand 2014). Overall, the trend is that women are treated as victims — not
754 as agents.

755 The case of Pakistan highlights especially that most progressive gender policies in environmental
756 governance in the HKH are accompanied by a structural lack of financial and human resources. In
757 other words, gender is often not considered a priority in environmental management and climate
758 change policies. Generally, it can be observed that state agencies in various HKH countries have
759 committed themselves to the promotion of gender equality, and they make a proclaimed effort to
760 make it happen, but simultaneously, there is a persistent impression that gender mainstreaming is
761 (also) promoted as a form of window dressing.

762 **14.3.2.1 Pakistan**

763 Pakistan launched its Climate Change Policy in 2012, with an aim to ensure that climate change is
764 mainstreamed in the economically and socially vulnerable sectors of the economy and to steer
765 Pakistan towards climate resilient development. In spite of numerous challenges, Pakistan has
766 initiated many other policies to address climate change and natural resources management, such as
767 the National Water Policy, National Drinking Water Policy, National Climate Change Policy, the
768 National Sanitation Policy, and others. All these policies present frameworks to address the key
769 challenges of climate change and natural resource management at a national level and serve as

770 guiding principles to the provinces to initiate their own policies to protect natural and environmental
771 resources.¹ A similar trend is visible in other HKH countries.

772 However, recognising women and other vulnerable groups as powerful agents of change, and the
773 differential impact of climate change on gender, most of the aforementioned policies do suggest
774 various measures for gender mainstreaming (Hamid and Afzal 2013; SPDC 2015). For instance, the
775 third objective of the climate change policy focuses on pro-poor gender sensitive adaptation while
776 also promoting mitigation to the extent possible. The National Drinking Water Policy, the National
777 Sanitation Policy, and others acknowledge, in particular, women's active role in water management.

778 Furthermore, Pakistan is also a signatory to several international norms and standards that lay the
779 foundation for gender equality. The Government of Pakistan has also allocated employment quotas
780 for women in provincial and federal institutions (Rai et al. 2007). But Pakistan ranks as the world's
781 second-lowest country – 144 out of 145 countries, according to the 2015 Global Gender Gap report –
782 in terms of gender equality and the equitable division of resources and opportunities among men and
783 women.

784 Major fields like climate change, disaster, water, irrigation, mitigation, and the environment in
785 Pakistan are still considered a male domain, outside the purview of women (Shah and Memon 2012).
786 The fact is, the majority of formal government institutions and structures dealing in climate change
787 and natural resource management are highly male dominated. The marginalisation of women was
788 evident in the staffing patterns of these organizations (Shah 2012; Hamid and Afzal 2013). There are
789 no formal mechanisms to ensure a gender balance in higher level positions in climate change, water,
790 and irrigation bureaucracies. Therefore, in the absence of strong implementation, gender
791 mainstreaming of governance structures does not, for the most part, translate into practice.

792 It is also important to understand that most government institutions have limited financial and
793 technical resources/capacity available especially in terms of integrating gender into climate change
794 planning (SPDC 2015). This omission can further result in poor response in terms of meeting the
795 needs of marginalised groups. The literature on gender, climate change, and disaster in Pakistan
796 includes various well-documented experiences that highlight the victimisation of women and other
797 vulnerable groups during emergencies, as well as the undermining of their productive role in
798 community building after disasters (Bari 1998; Enarson 1999; Morrow and Phillips 1999; Akçar 2001;
799 Shah 2012).

800 **14.3.2.2 China**

801 The Chinese government has increasingly acknowledged how poverty issues intertwine with
802 biological and cultural diversity through the government's ecological civilization strategy and green
803 social transition. Although China has achieved significant poverty reduction in the last decade,
804 poverty levels remain high, at roughly 200 million people, according to international poverty
805 standards. There are 14 state-identified poverty areas, mostly in remote mountain areas, which are at
806 the same time well-known for their rich biological and ethnic diversity, diversified landscapes, and
807 valuable bio-cultural heritage. China is active in climate change adaptation as well and launched the

¹ After the 18th constitutional amendment, provinces in Pakistan are now empowered to initiate their own provincial policies and institutional arrangements.

808 South-South Programme during COP 21 in Paris in 2015 to support other developing countries
809 through the South-South Collaborative Fund for Climate Change Adaptation. China has a large
810 national Climate Change Adaptation Plan using ecosystem-based adaptation as a major methodology
811 and scientific technologies as key tools. Yet, consideration and integration of gender analysis for
812 inclusion in community-based adaptation and women’s roles in adaptation is limited. Further study
813 on the links between and integration of ecosystem-based adaptation and community-based
814 adaptation is urgently needed. The previously described case studies and the examples from Guangxi
815 and Yunnan (Section 2.1) provide strong examples for implementing community-based gender-
816 sensitive biodiversity management and provide important survey data at both policy and action
817 levels.

818 **14.3.3 How policies for gender mainstreaming and social inclusion unfold on the ground**

819 Policies for gender mainstreaming and social inclusion in environmental governance on the ground
820 are complex and diverse. As illustrated by cases from China (community-based biodiversity
821 management) and Nepal (community forestry), current policies for user participation and
822 community-based management inadequately address gender concerns, although these policies often
823 explicitly seek to address them. The inclusion of some women as representatives of user committees
824 has, by and large, not altered the marginalisation and social exclusion of women from these groups.
825 One reason is that government agencies use policies of decentralization, user participation, and
826 community-based management as a means to exercise control, regulation, and state power.

827 **14.3.3.1 China**

828 Farming women play crucial custodial roles in seed and food diversity all over the world. Women’s
829 reproductive roles as mothers and family keepers build their interest, expertise, and knowledge in
830 seeds and food biodiversity issues. They are making an essential contribution to the resilience and
831 continuity of the world’s ecologic and food systems. Survey data in southwest China confirms this:
832 among small holding farmers, 62% of women play a role in seed selection and storage (Song and
833 Zhang 2015).

834 In order to help farmers in remote mountain villages conserve seeds and improve their preferred
835 landraces and PPB varieties, both to save seed cost and to create incentive and re-direct benefits to
836 PPB farmers, a team initiated community-based conservation and PVS trial and seed production of a
837 PPB variety, Guinuo 2006, in a number of trial villages in Guangxi. This PPB hybrid seed production
838 has been carried out by women farmers groups in this area since 2005 and has expanded to women’s
839 groups in Stone Village in Yunnan through farmer-to-farmer exchanges facilitated by the project
840 team.

841 The PPB activities in Stone Village have conserved more than 50 food crop varieties and improved 10
842 drought-resistant or quality landraces, and the women’s group has generated a significant amount of
843 money from seed production. The group has also started learning ecological and organic farming
844 practices from Guzhai village and plan to register a women’s farmer cooperative next year.

845 Both village case studies illustrate an important rural development path in the mountain areas of
846 China: community-based and women-led cooperative, diversified agriculture combined with strong
847 horizontal integration. Together, these ideas represent “a locally-driven empowerment process in
848 which farmers, led by women, have improved their capacity to deliberate about choices of action,

849 experiment with options, create new practices, and enlarge the network of horizontal relationships,
850 and thus obtain more autonomy in realizing their aspirations according to own agendas” (Song and
851 Vernooy 2010).

852 Both cases benefit from strong technical support and capacity building, accompanied by targeted
853 research. The project support for both the community cases in Guangxi and Yunnan is more focused
854 on broad rural development than on commercial motives. The work also benefits from interactions
855 and collaborations with other cooperatives, restaurants, NGOs, research centres and universities, and
856 the government’s agricultural extension service. The process of expansion is a capacity-building and
857 empowering process for these women-led cooperatives and self-directed communities.

858 **14.3.3.2 Nepal**

859 Nepal’s Community Forestry Programme (CFP) has been hailed as an environmentally and socially
860 transformative initiative, but in fact, has in many ways not benefited the poor. Some scholars allege
861 that community forestry user groups have actually resulted in “restricting access to resources by the
862 poor” (Gupta et al. 2011) and as such, CFP has not really ensured equity, inclusion, or gender
863 sensitivity (Neupane 2003; Paudel 2012).

864 Following the conception of the community participatory approach, the early 1990s saw a wave of
865 popularity in decentralized formal arrangements for forest governance as governments realized the
866 need to transfer responsibilities to local institutions and bestow decision-making powers on
867 communities for better resource management outcomes. Hence, over the past few decades, there
868 have been many devolutionary initiatives in a number of the HKH countries to bring about gender
869 and social inclusion. However, in tracing the trajectory of these initiatives, we find that policies and
870 programmes establishing local forest governance institutions were gender blind and communities
871 were treated as an ungendered entity (Agarwal 2000; Das 2011; Arora-Jonsson 2014). Only in later
872 years, with changes in approaches to decentralized governance and feminist criticism of such
873 policies, were steps taken to integrate gender equality concerns in programmes and schemes at
874 different levels (Tyagi and Das 2017).

875 From amongst such initiatives, Nepal’s model of community forestry as a green governance initiative
876 has been hailed as the most successful, transformative, and people-oriented model of local-level
877 forest governance for its social as well as environmental objectives. CFP in Nepal started in the
878 1970s, strengthened through later policy and legal instruments such as the Master Plan for the
879 Forestry Sector 1988, the Forest Act 1993, and the Forest Regulation of 1995. This legislation
880 provided favourable conditions for the successful handover of national forests to local communities.
881 As such, the CFP has been the largest and longest participatory green initiative, with 40% of Nepal’s
882 population belonging to more than 15,000 community forest user groups (CFUGs) which are involved
883 in managing 25% of the country’s forest area (Gupta et al. 2011; Karki et al. 2011). With the shift in
884 property rights from the state to communities, CFUGs have been able to exercise a bundle of property
885 rights regarding access, use, and management of national forests. The CFP goes beyond managing
886 forests for environmental and economic benefits; it has become an important instrument and
887 process for social change — empowering the marginalised (Gupta et al. 2011).

888 In Nepal, the Poverty Reduction Strategy Paper of 2002 and the Millennium Development Goals
889 regard the CFP as a suitable instrument for achieving the country’s poverty reduction goal (Kanel

2007), while international development agencies and governments view it as a tool for poverty reduction and sustainable natural resource management (Gupta et al. 2011). The programme has been hailed as “inclusive and equitable” as well as “able to address socio-political and environmental concerns at the national and regional levels” (Karki et al. 2011:22). CFUGs were first set up as projects but are now recognized as institutions. A number of cases have been celebrated for successfully arresting deforestation, helping to improve forest cover, and fomenting “genuine local participation and support” (23). Where there has been a greater presence of women in community forestry institutions, many statistically demonstrable benefits, such as enhancement of women’s effective participation in decision making, women’s stronger influence in the nature of decisions made, and women’s roles in improving forest conservation outcomes, have been noted (Agarwal 2010).

However, the CFP has been critiqued at two levels: its process and its inclusion and participation. Agrawal et al. (1999:2) describe the CFP as a “highly political process since it seeks to redistribute power and resources within the territorial confines of a given nation-state”. Although the CFP seems progressive in nature the government still holds the power. Sections 67 and 68 of the Forest Act state that the government has the ownership of all types of community-managed forests and has discretionary power to alter the use of forestland and to withdraw the community forest on certain conditions (HMGN 1993). The management plan of CFUGs is a contractual document giving tenure rights over forest resources, and violation of any provision of the management plan by any member of the CFUG can affect the tenure rights of all members of the group. These administrative powers are held by the District Forest Officer (Gupta et al. 2011). Ultimately, this means that communities have only usufruct rights over the forests they nurture and guard; the government has agreed only to hand over the degraded hill forests for restoration and conservation, while it maintains control over the richer forests of the Terai. The Federation of Community Forest Users-Nepal (FECOFUN), a network of CFUGs and forestry-related NGOs, has criticized the government on this point. These conditions have made CFUGs insecure about their tenure in community forestry and many communities have lost interest to participate.

On the inclusion front, numerous studies indicate that the extent of change is actually limited within large numbers of women, the poor, and excluded caste and ethnic groups who participate in community forestry processes and institutions (Chhetri 2001; Bushley 2002; Lama and Buchy 2002; Nightingale 2002; Winrock 2002; Buchy and Subba 2003; Paudyal 2008; Yadav et al. 2008; Agarwal 2009; Parajuli et al. 2010; Uprety et al. 2012). These groups benefited less from community forestry than wealthier and influential households: they could obtain free fuelwood and other non-timber forest products from the same forests before the introduction of the CFP; once the CFP declared these forests as community forests their access was limited and, therefore, many communities and groups were not interested in participating (Malla et al. 2003; Maharjan 1988). Similarly, procedures for electing the committee and decision makers through consensus and voting also resulted in well-off male and upper caste people dominating the CFUGs, which meant that powerful elites of the community shaped the rules of access to forest resources due to the prevailing sociocultural norms and barriers that influence participation in these institutions along social axes of differentiation such as age, caste, class, and ethnicity (Agarwal 1997; Nightingale 2002). The Ministry of Forests and Soil Conservation in its 2013 review report cites prevailing cultural norms as the reason women’s access to and influence of decision-making processes is muted, despite CFP’s efforts to ensure representation of women in key decision-making positions. Furthermore, time constraints on women

934 for domestic work limits their participation (Agarwal 2010). Staddon et al. (2015:268) document a
935 participatory community forestry project in the middle hills of eastern Nepal as a case of a well-
936 intentioned development gone wrong. Although the aim was to invite local communities to
937 participate, what unfolded was “multiple tyrannies” (274, 276). They found “uneven participation
938 that provided minimal benefits to the most marginalized (women and those who are illiterate)” and
939 that while many did “participate” as per the terms of engagement defined in a rather top-down
940 fashion, there was — as in many other projects — an “inadvertent reinforc[ing of] existing power
941 relations, diverting control away from communities and towards forestry authorities” (274, 276).

942 We can also see that the experiences of ‘women’s only’ CFUGs are not altogether positive. Studies
943 have shown there is often increased marginalisation of these organizations and little to no increase
944 in the empowerment of women (Seeley 1996; Rai and Buchy 2004; Buchy and Rai 2008). Agarwal
945 (2010) found that ‘women’s only’ CFUGs receive poorer forests compared to mixed-sex groups.

946 Gender analysts have long argued that these institutions that generally appear sustainable,
947 equitable, and efficient are rather ineffective on all three fronts when viewed through a gender lens
948 (Agarwal 2000) and that efforts towards gender mainstreaming in forest governance and policy have
949 been far from desirable. Meanwhile, current policy thrusts on gender mainstreaming in natural
950 resource governance have considered gender as synonymous to women (Arora-Jonsson 2014). This
951 understanding is problematic in that it implies gender as an issue for women only. Finally, gender
952 mainstreaming as applied mostly results in adding more female members to local governance
953 systems (Mukhopadhyay 2004). In this way, gender mainstreaming has been limited by its efficiency
954 and functional approach rather than a structural approach towards empowerment. The entire
955 structural and power relationship between genders remains almost untouched.

956 Gupta et al. (2011) argue that since 2001, when discourse on environmentalism became a global
957 issue, the involvement of non-state actors, such as donors and NGOs, increased and that these actors
958 changed their operational strategy during Nepal’s decade-long political insurgency. Although these
959 influential non-state actors were aware of power relationships, they did not challenge these but
960 rather used them for two purposes: to establish and advance their organization, and to establish their
961 role as service providers to the forest sector and donors. On the other hand, non-state actors such as
962 FECOFUN, who have been supported by donors for policy activities, had little ability to raise the
963 agenda of challenging power issues within forestry governance because they depended on donors for
964 financial and intellectual support. In this way, the “dynamics and complexity of actors’ interactions,
965 perceptions and power/knowledge in participatory forestry play a role in the exclusion of the poor,
966 dalits and other disadvantaged social groups” (Gupta et al. 2011:4).

967 **14.3.4 Hydropower development and issues of gender and social inclusion**

968 The recent surge in hydropower development as a climate-mitigating strategy makes for an
969 interesting case to analyse the ‘depoliticised’ framing and positioning of gender in two processes
970 currently emblematic for the HKH. Hydropower development is articulately positioned and presented
971 as being climate mitigating and, as such, hydropower projects [producing renewable and clean
972 energy] qualify for top-up funding through the Clean Development Mechanism. Hydropower has
973 emerged in the region as an economically viable and sustainable energy option and country
974 governments and donor agencies are increasingly in support of hydropower, citing other numerous
975 benefits, apart from energy generation, provided by hydropower dams such as flood control and

976 irrigation, which would also contribute to poverty alleviation and sustainable development (Shrestha
977 et al. 2016).

978 However, hydropower development in the region has also led to “adverse socio-environmental
979 impacts . . . particularly common at the local level”, primarily because hydropower projects are more
980 concerned with “national and regional economic priorities” and pay “little attention to the adverse
981 impacts on affected local populations (mostly mountain communities)” (Shrestha et al. 2016:1).
982 Furthermore, hydropower development policies and strategies in the region pay little attention to
983 gender, regardless of the climate merits assigned to clean energy development. While there is
984 significant attention to the risks of hydropower development in these regions for local communities,
985 the analytical scale of the ‘local’ remains essentially unpacked. While hydropower is indeed
986 renewable, the waterscape is often irreversibly changed by the processes of generating hydropower.
987 What might be the social, economic, and environmental costs of large dam development in a region
988 that is not only said to be geologically and ecologically unique, but also politically fragile, with ethnic
989 and cultural tensions and faults corresponding to international and national boundaries?

990 **14.3.4.1 Nepal**

991 A recent report by Shrestha et al. (2016:41) on the benefit sharing mechanisms² in Nepal’s
992 hydropower sector show that “while benefit-sharing programmes generally seek to share benefits
993 equally across project-affected populations . . . certain kinds of people have less access to the
994 benefits of hydropower development than others”. Women are among these groups who are under-
995 represented in the process of hydropower development in terms of stakeholder consultation, local
996 hiring and employment, establishing local development priorities, and local governance. Women
997 from marginalised groups (Janajati, Dalit, ultra-poor, and disabled women) experience further
998 disadvantage due to social power hierarchies.

999 The Shrestha report examines the benefit sharing mechanisms of hydropower development and
1000 concludes that “patterns of social exclusion based on gender, caste, ethnicity, and class were
1001 apparent” (41). The authors note that women receive considerably fewer direct benefits in both
1002 employment and training. Furthermore, women are provided training in gender-stereotypical skills
1003 such as knitting, cooking, and weaving. The report states that “these issues reflect a larger problem
1004 with gender inequity: that the collective voice of women is routinely subjugated in local processes of
1005 decision-making about hydropower projects” (25).

1006 The report (40) outlines the following gender and social inequities that are evident during the
1007 process of hydropower development:

2 In the hydropower sector, benefit sharing mechanism would mean ways and methods to share the profits, but more important, the advantages derived from the hydropower development by the companies. The early practice of benefit sharing was ‘trickle down’ to local communities, whereby broader national and regional economic development was expected to bring the dividends of development to local citizens. Later, the practice moved on to compensation and mitigation for minimizing the negative impacts of projects, and mechanisms were designed to ensure that individuals and communities adversely impacted by hydropower development were compensated for any losses sustained. More recently, the emphasis is on sustainable development, therefore, benefit sharing mechanisms now go beyond mitigation and compensation, “to maximize development benefits and more equitable outcomes, and working directly with local communities to increase investment effectiveness” (Shrestha et al. 2016:7).

- 1008 • Uneven patterns of awareness and information about stakeholder rights
- 1009 • Unequal participation in community consultations and decision making about
- 1010 hydropower development, leading to the prioritization of some agenda and the
- 1011 subjugation of others
- 1012 • Uneven distribution of impacts related to hydropower development, as certain sub-
- 1013 populations and social groups are disproportionately affected or economically dislocated
- 1014 • Unequal ability to mobilize for individual benefits (i.e., seeking employment,
- 1015 participating in training programmes, or purchasing project shares)
- 1016 • Informal inequalities in the distribution of benefits notionally shared by communities
- 1017 (i.e., community development programmes, royalties) due to unequal access to public
- 1018 facilities and patterns of social hierarchy

1019 **14.3.5 Professionals, knowledge, and masculinities: A scale challenge in NRM governance**

1020 In environmental governance, many knowledge and policy domains have been treated, traditionally,
 1021 as fields of engineering and technology, especially in the field of natural resource management
 1022 (Adhikary 1995). The domain of irrigation and water governance is one good example (Zwarteveen
 1023 2006; Liebrand 2014). Particularly in Asia, the water sector – and its associated water development
 1024 interventions – is an area of expertise that is historically managed as a field of irrigation engineering
 1025 (Ongsakul et al. 2012). Because men have dominated the fields of engineering and technology
 1026 (Zwarteveen 2011), it also is important to observe that several fields in environmental governance,
 1027 especially irrigation and water planning, have also acquired strong associations with men and
 1028 masculinity. In fact, in the water sector, in most countries of the region, male domination of the field
 1029 is considered normal (Parikh and Sukhatme 2004; Gupta 2007; Kulkarni et al. 2009; Nair 2012) and
 1030 grants legitimacy to the knowledge that they produce, including that knowledge related to Integrated
 1031 Water Resources Management (IWRM) and climate change adaptation.

1032 The hegemony of engineering knowledge and the domination of male professionals in NRM can be
 1033 considered a scale challenge³ in environmental governance (Liebrand 2010). For the HKH, this is
 1034 reason for great concern. It means that there is a structural mismatch between actual realities in the
 1035 field and expectations and administrative realities at the policy level. For instance, the policy
 1036 objective in water governance to support livelihoods and create opportunities for all is undermined
 1037 by the domination of men among engineers and an associated male culture of expertise. The
 1038 masculinity of water governance partially explains why current measures to bridge the gap, between
 1039 field and policy levels, continue falling short of expectations.

1040 In Nepal, for instance, the Department of Irrigation has adopted policies and programmes in the past
 1041 two decades to improve irrigation and water resource management. Recurring elements of these
 1042 programmes include decentralization, user participation, women's inclusion and, more recently,
 1043 public-private partnerships (Shukla and Sharma 1997; Gautam 2006; Singh et al. 2014). Yet Nepal's
 1044 irrigation and water resources development sector continues to be characterized by persistent and
 1045 historic injustices and social inequities along divisions of class, caste, and ethnicity and gender
 1046 (DFID/WB 2006).

³ A scale challenge represents a situation in which the current combination of cross-scale and cross-level interactions threatens to undermine the resilience of a human-environment system (Cash et al. 2006).

1047 More specifically, more than three decades of mainstreaming gender in (water) development research
1048 and policy have failed to come to grips with the masculine subject (Laurie 2005; Liebrand 2014). In
1049 spite of repeated calls by feminist researchers to address masculinities in NRM, engineers and
1050 experts in water planning still tend to be men (Zwarteveen 2008; 2011). As noted, there exists a
1051 strong epistemic tradition in irrigation and water expert thinking that sees the world as uniform,
1052 makeable, and manageable. In fact, most development interpretations in research and policy made
1053 by irrigation and water experts today continue to emphasise and attach greater value to knowledge
1054 and experiences that present the world as rational, universal, and genderless (Liebrand 2014).

1055 For clarification, male engineers and professionals in water are found today who discuss gender
1056 issues professionally and rationally, working hard to meet social equity and gender goals in
1057 development (see Udas and Zwarteveen 2010 for an example of a Nepalese irrigation engineer). In
1058 some regards, gender and women have earned a legitimate place in water research and irrigation
1059 policy agendas. Yet there is little reflection on norms of hegemony and masculinity in the profession
1060 and how these influence water expert thinking and the way experts see irrigation development and
1061 water resources management.

1062 **14.4 CONCLUSION**

1063 Climate change and extreme weather is affecting not only regions very differently, but also affecting
1064 women and men differently. Consequently, in many communities in the HKH, climate change will
1065 have or is already having a disproportionately greater effect on women because of such inequitable
1066 distribution of rights, assets, resources, and power – as well as repressive cultural rules and norms,
1067 and greater responsibilities, making them often poorer and less educated than men and excluded
1068 from political and household decision-making processes that affect their lives. Added to climate
1069 change are the socioeconomic drivers of change which are often intrinsically intertwined with
1070 climate changes. Ethnic groups and primarily women are adapting to both socioeconomic change and
1071 climate change for their livelihoods and resilience. Yet, gender inequality is deepening in terms of
1072 access to resources, reinforced by existing formal institutions, conservative culture norms, and a
1073 male-dominated institutional system. Gender-neutral and even male-biased policies on land tenure
1074 and employment and insufficient policies to support farming women have marginalised a majority of
1075 farming women, especially those in poor remote mountainous areas.

1076 Unfortunately, there is no simple, easy way to reduce the complexities of gender inequality. Far too
1077 often, when projects and programmes talk about addressing gender, they imply acting at the
1078 household or community levels by taking the poor women as ‘volunteers’ in the projects and
1079 identifying their needs and aspirations as small in size and subsistence in nature, thereby creating an
1080 unsurpassable binary between the arena of what happens within the household and community and
1081 the broader framework of strategic environmental interventions (Lahiri-Dutt 2014). Addressing
1082 gender across the board will make an essential difference that will bring about sustained, gender
1083 transformative outcomes. This work will require consistent attention to addressing complex relations
1084 of inequality at the household, community, and institutional levels to ensure and enable change.

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