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6.2 GENDER ROLES AND LAND USE PREFERENCES—IMPLICATIONS TO LANDSCAPE RESTORATION IN SOUTHEAST ASIA

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6.2.1 INTRODUCTION

The Global Environment Fund (GEF) defines land degradation as the process by which the land is no longer able to sustain its economic and natural ecological functions due to natural processes or human activity. Land degradation is caused by various processes and interactions between two interlocking and complex systems: the natural ecosystem and the human social system (Shrestha, 2011). In southeast Asia, more than 50% of the land has experienced dramatic transformation, mainly from forest to agriculture (Zhao et al., 2008). This phenomenon has resulted in land degradation, primarily due to deforestation and consequently soil erosion resulting from the region's high rainfall. The issue of land degradation is important to the region as the human population continues to increase along with rapid economic development.

Land restoration has been proposed to reverse degradation. However, to make land restoration efforts effective, social factors including gender appreciation of land uses must be considered (Villamor et al., 2014a; Ban et al., 2013; Bernard et al., 2014). We argue in this section that the pathway to land restoration is influenced by the way that land is appreciated by multiple direct stakeholders. The diversity of these stakes is an important consideration in efforts to reclaim or restore land. Through three case studies conducted in Indonesia, Vietnam, and the Philippines, we highlight the roles that women play in agriculture and decision making, as well as their choices over land use. We found that context-specific gender roles and an appreciation of land uses play a role in predicting future changes in land-use and land restoration efforts. Our case study findings are instructive for future land restoration efforts in southeast Asia.

6.2.2 GENDER AND LAND MANAGEMENT NEXUS

The past few years have witnessed a dramatic increase in global attention to gender, its role in development, and inequalities that exist between men and women (Kiptot et al., 2014). Yet, there remains a paucity in tangible actions that lead to greater impacts on the ground. There are serious discrepancies in the gender and land management nexus. While women in Central and West Africa, for example, produce three-quarters of food crops, they have almost no rights to land. With regard to agroforestry, women are the principal holders of knowledge and managers of traditional home gardens; about 60% of the practitioners of innovative practices, such as domestication of indigenous fruit trees and production of dairy fodder, are also women (World Bank et al., 2009). In eastern Zambia, female-headed households are more likely to adopt improved fallows than male-headed households, regardless of household size, previous experience with natural fallows, age, and membership in farmer groups (Gladwin et al., 2001).

Among other factors, the discrepancy lies in land tenure and gender-biased decision-making roles. Some researchers argue that it is about culturally embedded asymmetries in power relations between men and women. In forested and agricultural landscapes of developing countries and subsistence economies, rural women depend critically on natural resources but tend to be excluded from governance and decision-making processes (Catacutan et al., 2015; Agarwal, 2010; Benjamin, 2010; Buffum et al., 2010; Colfer, 2005; German et al., 2010; Mwangi and Mai, 2011). As a result, their contributions to sustainable resource management are often limited by their insecure rights to forests and trees, which constrain their incentives for undertaking sustainable management practices and the range of actions that they can take with regard to forest management (Meinzen-Dick et al., 1997; Rocheleau and Edmunds, 1997; Yadama et al., 1997).

Furthermore, the difference in adoption of agricultural and natural resource management technologies between men and women in male-headed and female-headed households is often linked to their variations in accessing and controlling related resources. Women are often confined to the lower end of the value chain of agroforestry products (retailing), which limits their control over and returns from the productive process (Kiptot and Franzel, 2012). Women also have less access to extension information such as on new technologies and crop varieties, due to the differing education levels between men and women. In many cases, when women are given the chance to join extension activities, lower education and literacy levels limit their appreciation of the potential benefit of adopting innovations (Kiptot and Franzel, 2012).

In sum, disparities between men and women affect land-use and land management decisions. These may be in the form of gender-assigned roles, perceptions, or resource endowments. However, very few empirical studies on gender-specific land-use decision making are available (Kiptot and Franzel, 2012; Villamor et al., 2014c). In the next section, we present three case studies to demonstrate the need for further examination of gender-specific roles and land-use decision making, with respect to land restoration.

6.2.3 CASE STUDIES

We used three case studies to highlight the gender dimensions of land restoration (Figure 6.2.1). These cases were selected primarily because their geographical areas are experiencing dramatic land use transitions. They are also sites of research by the Consultative Group on International Agricultural Research (CGIAR) on gender dimensions of forest, trees, and agroforests (FTA). The case studies

were guided by an overarching hypothesis that "appreciation of tree cover and its associated ecosystem services varies according to gender and ecological knowledge" (van Noordwijk and Villamor, 2014).

The first site is Bungo District, in Jambi Province, West Sumatra, Indonesia. The district is composed of three villages, spanning a total land area of 15,000 ha. The area is dominated by rubber agroforests, which are a primary source of livelihood in the region, while the province is the third-largest rubber producer in Indonesia. The second site is the municipality of Lantapan, Bukidnon Province, in the southern Philippines. Lantapan has a total land area of 35,465 ha and is partially located within the biodiversity-rich Mt. Kitanglad Range Natural Park. Due to its favorable climatic conditions, the municipality is dominated by large-scale banana, pineapple, and sugarcane plantations. The third site is Phù Yên, a rural district in the northwest region of Vietnam, which is located 135 km northeast of Son La Province (around 174 km of Hanoi). The total land area of the district is around 123,655 ha, of which 6496 ha is under agriculture and about 59,493 ha is forest.

A mixed-method approach was used across all case studies, including role-play games (RPGs), surveys, focus group discussions (FGDs), and land-use change analysis. However, in this text, we report only on the results of the land-use RPG for the Bungo case study and the household survey of gender roles and decision making for the Lantapan and Phù Yên case studies. The household surveys in Lantapan and Phù Yên involved a total of 605 respondents, of which almost half were women. In the RPG, the villagers were assigned the roles of farmers/villagers and outside agents [e.g., oil palm company, logging concession, nongovernmental organization (NGO) for biodiversity conservation, green rubber company, and local government watershed protection board] in three separate male-only and female-only configurations over six rounds or years per game, for the purpose of observing how men and women respond to outside agents who come to promote either the conversion or conservation of land (Villamor et al., 2014c).

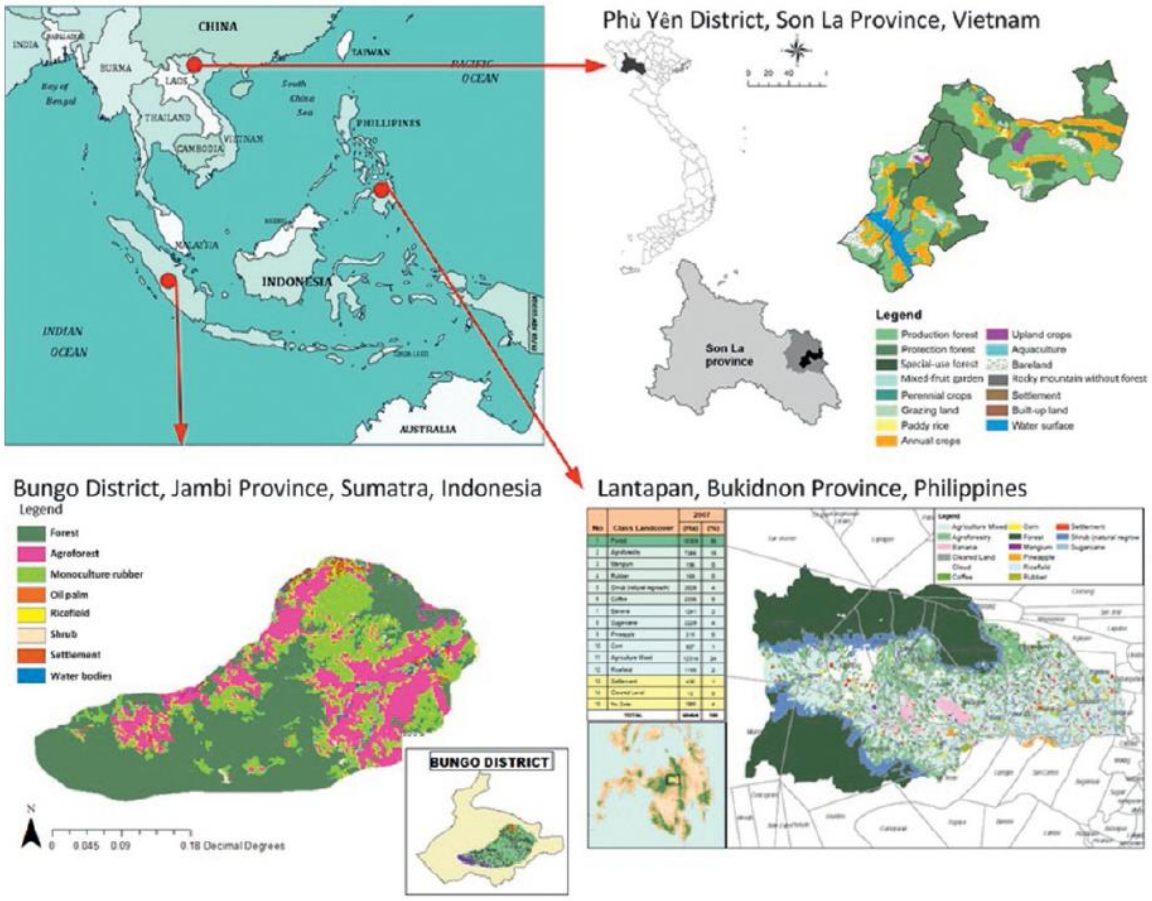

FIGURE 6.2.1

Location of case study sites in southeast Asia.

6.2.3.1 WOMEN'S PREFERENCE OVER HIGHLY PROFITABLE LAND USES IN INDONESIA

In Bungo district, our findings indicated that women were more inclined to shift to highly profitable land uses such as oil palm plantation from traditional rubber agroforests and rice fields, contrary to men who preferred tree-based systems such as agroforests and forests (Villamor et al., 2014c). Furthermore, in the RPG played exclusively by women, we observed that they enthusiastically interacted with outside agents and accepted offers to shift from current land use to oil palm plantation. The women also accepted the offer of the logging company to log their forest patches for additional income while the men (in the men-only configuration) refused to accept the same offer (Figure 6.2.1).

During the game, both genders were exposed to various stressors, such as forest fires, population growth, and decreased price of rubber, to stimulate a change in their decision over the use of low-income-generating land (e.g., forests). However, the men's group did not change their decision and kept their forest patches, while the women's group did. In the end, the women's group accumulated higher income than the men's group (Figure 6.2.2). This contrasts with the situation in Africa, where the by-products of agroforestry systems with the highest economic value are often subjugated by men (Kiptot and Franzel, 2012).

Several reasons can be used to explain women's preference for oil palm plantations. First, the economic returns of oil palm production are enticing for women, who are often in charge of household budgeting—so the financial difficulty that is mostly felt by women may be connected to this behavior. Second, we found that women in this study area were actively involved in productive activities that exposed them to the cash-oriented local economy; in fact, many women are involved as wage workers in large oil palm plantations (Villamor et al., 2015). Third, an underlying factor influencing women's proactive behavior toward highly profitable land uses can be the matrilineal nature of the Minangkabau ethnic group (Villamor et al., 2015; Blackwood, 2008). Some communities in Sumatra, such as the Minangkabau and Jambi Melayu ethnic groups, practice a matrilineal kinship system, whereby land (particularly rice farms) is bequeathed by the mother to her daughters or nieces (Martial et al., 2012). Within this matrilineal system, women have stronger land rights and experience a relative absence of gender discrimination (Otsuka et al., 2001; Quisumbing and Otsuka, 2001). In this case, the matrilineal system could be the source of power for women to make decisions independently from their husbands. Moreover, it was found that the majority of the women in the study area have higher educational attainment than men, and thus, they have a clear understanding of the long-term implications of their choices. However, there were concerns that women's positive behavior toward profitable land uses may run counter to land restoration efforts. Reclaiming degraded lands may impose restrictions on certain land uses or practices (e.g., oil palm plantations) that lowers yield and income and, hence, may simply not be wanted by women.

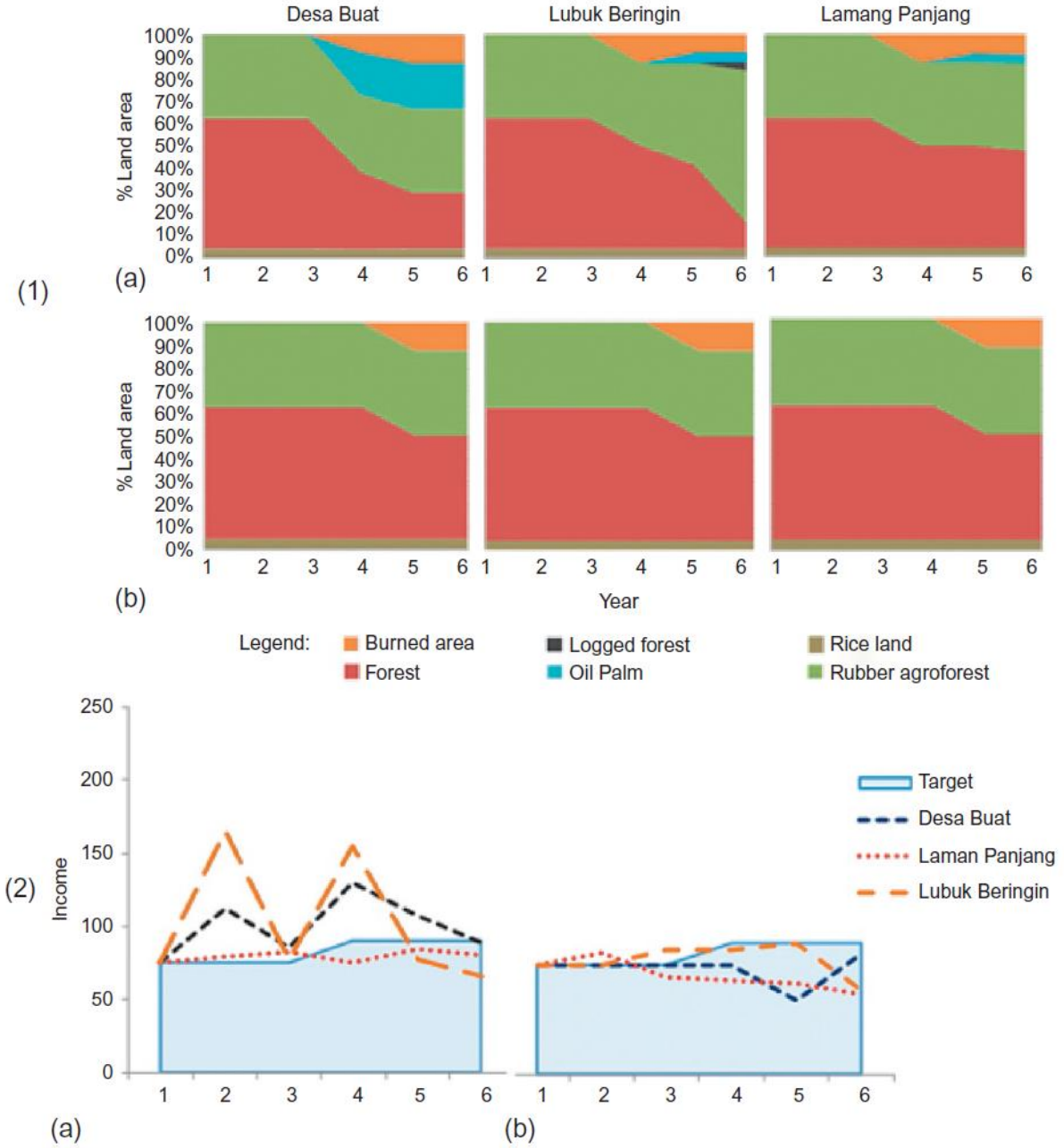

FIGURE 6.2.2

Land-use trend and income of women-only groups (a) and men-only groups (b) during RPGs (Villamor et al., 2014c).

6.2.3.2 INCREASING FEMALE-HEADED HOUSEHOLDS IN THE PHILIPPINES

According to the Philippine Commission on Women,[1] as the number of men migrating into urban centers for seasonal or long-term employment increases, rural areas of the Philippines find a growing number of women-headed households. Although our study did not look at the impacts of outmigration, the high divorce rate in the study area contributed to this peculiarity. A total of 30% of surveyed households ($n = 302$) in the Lantapan municipality were female-headed, compared with 5% and 13% in the Indonesian and Vietnamese case studies, respectively.

In Lantapan, women household heads singlehandedly tend the farm, decide what to plant, market the produce, and support children's schooling in the absence of their husbands. This situation imposed multiple burdens on women, making them interested in land-use options that provide quick and high returns on investment, such as commercial vegetables. However, commercial vegetable production in Lantapan has already been pushed to the forest frontiers due to the growing number of large-scale, export-oriented agroindustrial companies (e.g., pineapple and banana) that took possession of prime lands in the municipality, and farming in the forest frontiers requires the women to work in a harsher environment. In addition, vegetable production often involved unsustainable practices that trigger soil erosion and the use of chemicals and pesticides that can be harmful to women's health. Moreover, our survey revealed that both men and women favor maize and high-value commercial vegetables but differ in their choice of perennial crops, particularly between coffee and banana (Figure 6.2.3).

Conversion from maize and vegetables to large-scale banana plantations began in the late 1990s, when multinational companies began to rent land from smallholder farmers on a 25-year contract. On one hand, women prefer to grow coffee over renting land to multinational banana plantation companies. Men, on the other hand, prefer converting to banana plantations, perhaps to initiate the possibility of employment at the plantation companies. In fact, we found that many male farmers had already left farming to work in banana plantations, contributing to a shift in the role of women and spurring changes in the local economy. The survey suggested that decisions on land use were based on profitability (40%), marketability of produce (22%), land suitability (12%), and household consumption (8%).

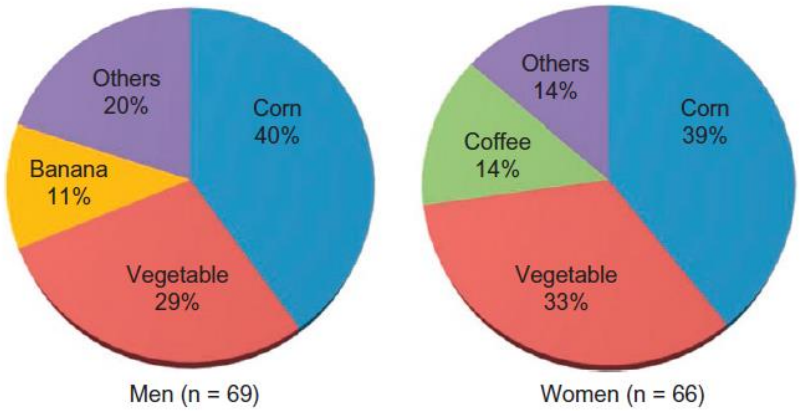

FIGURE 6.2.3

Preferred land-use options by men and women who agreed to change their current land uses ($N = 302$; Source: 2013 household survey).

As female-headed households increase and women are more involved in household decision making, it becomes necessary to adapt extension services and land restoration initiatives to accommodate the changing social/gender structure. Initiatives should also be mindful of women's perspectives regarding land-use approaches that maximize output and income.

Table 6.2.1 Perspectives of men and women in terms of joint roles (N=303), 2013 survey.

Activity	Men said… (%)		Women said… (%)		Fisher exact test (*p*)
	Joint	Individual	Joint	Individual	
Productive					
1. Planting crops	94	6	86	14	0.089
2. Planting trees	98	2	88	12	**0.017**
3. Feeding animals	61	39	64	36	0.392
4. Weeding the field	86	14	81	19	0.296
5. Fertilizing	82	18	80	20	0.468
6. Spraying	80	20	75	25	0.305
7. Watering/Irrigating	34	66	23	77	**0.040**
8. Producing seedlings	17	83	13	86	0.284
9. Pruning trees	72	28	69	31	0.284
10. Harvesting crops	10	90	16	84	0.117
11. Harvesting trees	96	4	93	7	0.315
12. Hauling crops	63	37	60	40	0.421
13. Marketing/selling crops	27	73	36	64	**0.092**
14. Farm budgeting	50	50	48	52	0.424
15. Buying farm inputs	20	80	24	76	0.255
16. Keeping farm records	22	78	18	82	0.284
Reproductive					
1. Collecting firewood	1	99	1	99	0.686
2. Fetching water	78	22	82	18	0.411
3. Preparing meals	7	93	6	94	0.535
4. Taking care of children	89	11	88	12	0.556
5. Washing clothes	98	2	92	8	**0.048**
6. Cleaning house	97	3	95	5.4	0.579
7. Attending children's needs	84	16	91	9	0.236
8. Household budgeting	80	20	70	30	**0.048**
Community					
1. Attending community meetings	2	98	1	99	0.311
2. Village planting	50	50	42	58	0.145
3. Church/School meetings	22	78	26	74	0.318
4. Building schools/bridges etc	40	60	39	61	0.491
5. Cleaning public places	32	68	39	61	0.162

Note: Numbers in bold text represent significant results.

6.2.3.3 SHARED ROLES AND JOINT DECISION MAKING IN VIETNAM

The situation in Vietnam is somewhat different from that in the Philippines, as decisions were shared between men and women. Using the "gender roles framework" (Razavi and Miller, 1995), we explored the question of who does what for all productive, reproductive, and community roles and tasks. Table 6.2.1 shows that almost half the roles and activities identified were jointly performed by men and women. Productive roles, such as planting trees and crops and harvesting, were undertaken jointly. Similarly, reproductive roles such as taking care of the children, doing the laundry, and cleaning the house were also done jointly, unlike the Minangkabau tribe in Bungo District, where all reproductive roles were performed mainly by women. In Vietnam, men and women apparently share the burden of managing farms and households and presumably share the benefits too. It is thus important to involve both genders in planning for land restoration interventions; otherwise, initiatives that undermine either men or women may distort the gender norm that is already observed in Phù Yên District. Similar to the Lantapan case, the share of female-headed households in Phù Yên, which is 13% of the sample, could not be ignored since they also perform the roles formerly played by their spouses. This calls for land restoration interventions targeting female-headed households. To restore degraded lands, strategies must align to women's specific needs and limitations.

6.2.4 GENDER IMPLICATIONS WITH LAND RESTORATION

What can future land restoration efforts learn from our case studies? The context in the three case studies varies, but elsewhere, men and women may be confronted with similar challenges when pursuing land restoration efforts. As land is central to the economic activities of men and women, it is a key determinant to the sustainability of livelihoods in rural southeast Asia. It is thus important to highlight the gender dimensions of land restoration. Finally, our case studies highlight three important points for consideration by any land restoration effort in the region and elsewhere.

6.2.4.1 LAND RESTORATION EFFORTS MAY BE UNWANTED BY WOMEN WHO SEEK GREENER PASTURES BY ENGAGING IN HIGHLY PROFITABLE LAND USES THAT MAY NOT ALIGN WITH RESTORATION GOALS

In the Indonesian case, traditional gender stereotypes whereby women are expected to focus only on subsistence crop production have been demystified. This is linked not only to cultural factors but also to global developments in the agricultural sector leading to changes in the choice of crops. Within our broader study of the gender dimensions of FTA in Bungo District, Villamor et al. (2014b) argued that gender-specific factors may contribute explicitly or implicitly to the pattern of multifunctionality or provisioning of goods and ecosystem services at the landscape level. They also concluded that involving the women in Bungo District in reducing emissions from degradation and deforestation (REDD) programs may be counterproductive, as they may simply change their land use when the reward for changing is high. As land restoration relates to enhancing the multifunctionality of landscapes, therefore, women's perspectives and land-use choices cannot be taken for granted.

6.2.4.2 GENDER-SPECIFIC ROLES AND PREFERENCES ARE NOT STATIC

The Lantapan case study also showed the importance of considering gender-specific contexts and women's choices related to land restoration efforts. Although the context in Lantapan is totally different from Bungo District in Indonesia, the eminent roles of women in productive activities have similarly indicated the importance of understanding their changing position in the economic sphere and how these changes are likely to influence future land investment decisions. Women have emerged from their traditional reproductive roles and are now engaged in the market economy. While this can be seen as an opportunity for self-empowerment for women, this may also have created household disarray and a gender rebalance in decision making. The economic and social structure of Lantapan is indicated by the fact that more women are becoming heads of households due to male outmigration, more livelihood options, or changes in marital status.

The Vietnamese situation is somewhat different from those in Indonesia and the Philippines, but it confirms the evidence that joint gender decision making leads to better economic and environmental outcomes (Villamor et al., 2014b). However, further study is needed to better understand the enabling conditions that maintain this type of decision making.

6.2.4.3 BUILDING ON GENDER-SPECIFIC CONTEXTS TO DESIGN GENDER-RESPONSIVE AND GENDER-FOCUSED LAND RESTORATION APPROACHES

Regardless of context-specific differences, the argument running through the case studies is that knowledge about changing gender roles, decision making, and land use preferences can be better used to inform future investments in land. With increased roles in productive tasks and decision making and integration into the mainstream economy, women can become agents of both land degradation and restoration. Understanding gender-specific differences over land use and land management practices can and should be the entry point, followed by nuanced design and implementation of gender-responsive and gender-focused land restoration approaches and investments. Undermining gender-specific appreciation of land uses may lead to unsuccessful land restoration efforts in southeast Asia and elsewhere.

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