

# Effects of environmental change and policy responses on natural resource access in Vietnam

Consequences and opportunities for northern ethnic  
communities

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## Introduction

Vietnam is among the most vulnerable countries in the world to environmental and climate change, due to its biophysical exposure to environmental and climatic events and to its underlying socio-economic circumstances. These socio-economic circumstances are determined by pre-existing inequalities, attributed in large part to political, economic and social structures (Kelly and Adger 2000; Ribot 2014). Dominant discourses and subsequent policies for climate change mitigation and adaptation generally sidestep the socio-economic causes of vulnerability (Taylor 2014; Nightingale et al. 2019). However, when environmental and climate policies are implemented without consideration for pre-existing power relations that shape unequal control over resources, those inequalities will likely become entrenched (Fairhead, Leach, and Scoones 2012; Vigil 2018; Vigil 2019). Despite progress in understanding the biophysical responses to environmental changes, not as much is known about how the multi-layered processes of societal marginalization and vulnerability adjust to these changes. Finally, even less is known about how environmental policy interventions, such as hydropower projects or forest conservation programmes for climate change mitigation, affect the livelihoods of ethnic minorities and their access to natural resources (Dang 2012).

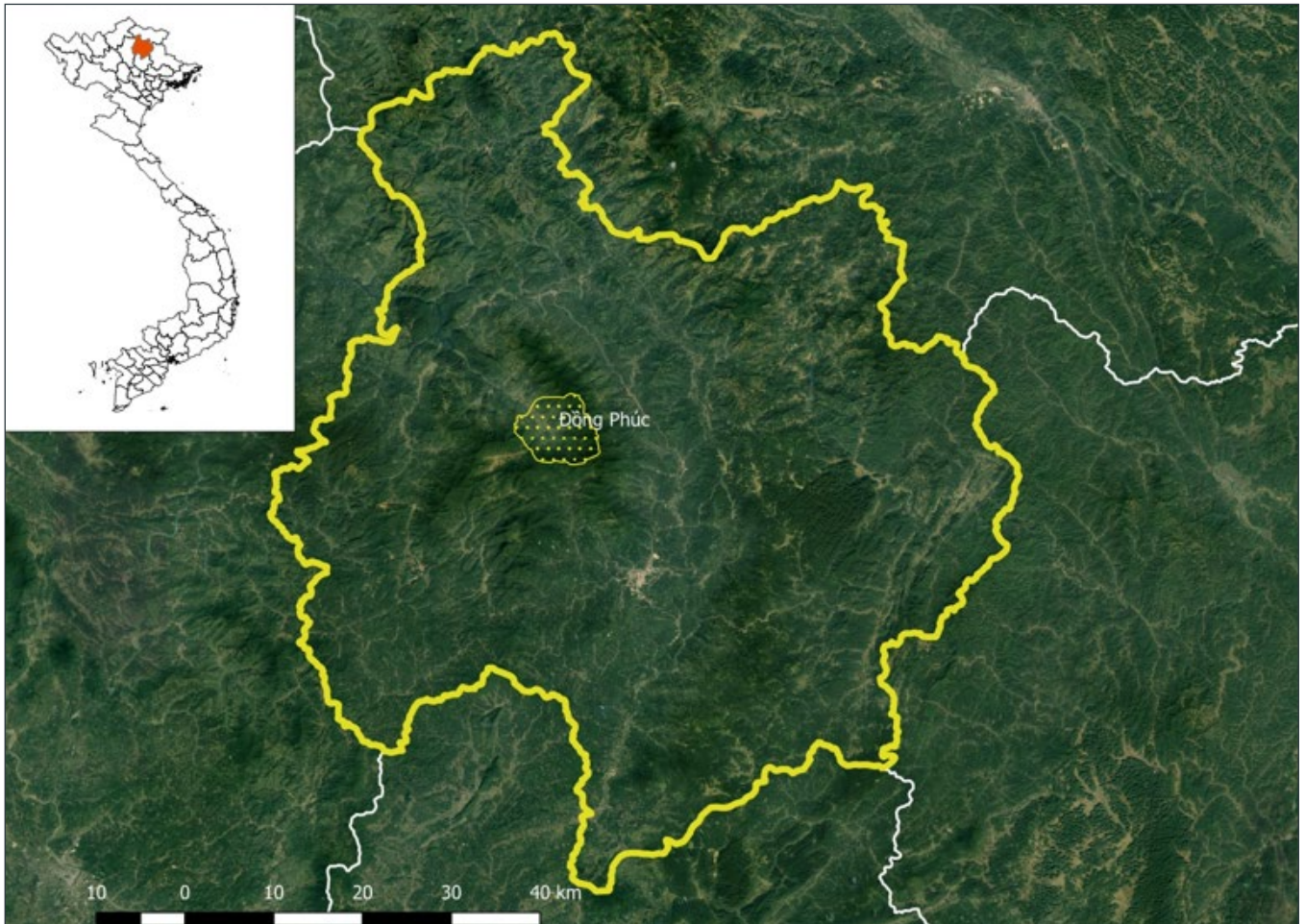
Access is here understood as the “the ability to derive benefits from things,” rather than the classical ownership definition of “the right to benefit from things” (Ribot and Peluso 2003, 156). Whereas the notion of ownership can be understood as a bundle of rights, access is more analogous to a bundle of powers that includes a wider range of social relationships constraining or enabling benefits from resource use than the notion of property rights does. By focusing on access rather than on ownership, we can begin to understand not just who benefits from resources, but why some people or institutions benefit from resources, regardless of whether they have *de jure* rights to them (Ribot and Peluso 2003, 154). We focus on an analysis of access that pays attention to how benefits and outcomes are shaped along lines of ethnicity, class and gender and to the role that discursive power has in creating disadvantages and inequality with regards to access to natural resources (Cornwall and Whitehead 2007; Elmhirst 2011). This policy paper explores how environmental change and policy interventions affect access to natural resources of ethnic minorities and their livelihoods in the mountainous region of north-eastern Vietnam. It particularly discusses how benefits and outcomes of accessibility to natural resources are shaped along the line of gender, ethnicity and class, and the role of discursive power in creating disadvantage and inequality with regard to access to natural resources. By demonstrating the making of winners and losers, the report might help practitioners and policy-makers fine-tune their strategies in the pursue of more equitable and sustainable development.

## Case study site

This research was conducted in four villages located in the Dong Phuc commune of Ba Be district, Bac Kan Province. The commune’s waterways flow through the protected watershed of Na Hang, or Tuyen Quang, hydropower plant in the neighbouring Tuyen Quang Province. The commune also sits within the buffer zone of Ba Be National Park that pays villagers for ecosystem services and provides periodic allowances in cash and rice. Dong Phuc is among the poorest communes in the province, as well as in the country (CEMA 2019). In terms of livelihoods, wetland rice cultivation, animal husbandry, and wage labour are the three key livelihood sources in the study’s four villages. However, paddy land per capita is rather low, ranging from 0.28 to 0.05 hectare per person in the research villages (Dang forthcoming). Upland cultivation of rice, maize and beans is practiced among Dao and H’mong villagers but mainly for home consumption.

Bac Kan Province has a higher proportion of forestland per capita, at 1.3 hectares (BKIP 2019; BKIP 2020), than the 0.61 average in the rest of the northeastern region (GSOV n.d.). Forest land endowment in Dong Phuc commune is slightly higher than the provincial average at 1.4 hectares per person. The province is home to 5 main ethnic groups with Tay at 53%, Dao at

Figure 1: Map of the study site



18%, Kinh at 12%, Nùng at 9% and H'mong at 7% (BKIP 2020). Each of the study's four villages is dominated by one of the diverse ethnic groups, and all the ethnic groups follow patrilineal and patriarchal traditions.

### BOX 1: FOREST CATEGORIES AND OWNERSHIP REGIMES IN VIETNAM

According to the Law on Forest Protection and Development issued in 1991, forests are categorized into three groups based on their function and, hence, these categorizations determine their respective management regimes. Production forest is described as bare or marginal land allocated to and managed by individual households or state-owned forest companies for economic production and reproduction of the forest. Land-tenure certificate holders to this type of forest, green-book holders, are encouraged by the state to invest in industrial tree plantations. Protection forests are naturally regenerated forests aimed to protect environmental resources such as watersheds, water and soil. Lastly, special-use forests are aimed for conservation purposes. Titleholders of land or forest land are those whose names are on the land tenure certificate. According to the Land Law 2013, all land in Vietnam is owned by the state, so the land tenure certificate is a stewardship or lease agreement with the state that delineates certain bundles of rights to different types of land for a fixed time period: 50 years for forest land and 70 years for residential land.

Source: Sam and Trung 2003; Bayrak 2019

## Methodology and data collection

This project is a collaboration between Stockholm Environment Institute in Asia (SEI Asia) and CARE International in Vietnam. The study is embedded within the Bridging Bonds initiative, led by CARE to optimize available research resources. The main role of SEI researchers was designing the research framework and the interview questions, analysing the data, and co-authoring the research paper. CARE researchers were responsible for collecting data and providing inputs and feedback throughout the research process. The research applied qualitative methods to information gained through interviews with key informants and households. Most of the interviews were conducted in the evening once people returned home from work. Despite the intention of equal representation of women and men within respondents, 71% of the respondents were women. This imbalance resulted from two conditions: the unavailability of some men who were working off-farm when interviews were conducted and the reluctance of some men to be interviewed by a local woman. The research also relied on data and analysis of the concurrent PhD research conducted by Nguyet Dang, the part-time CARE staff member who is also a member of this research team and co-author of this discussion brief.

Table 1: Number of household interviews

Village	Ban Chan	Na Thau	Na Ph	Lung Minh
Ethnicity	Tày	Tày	H'mong	Dao
Female respondents	9	7	3	6
Male respondents	3	1	3	3
<b>Total (35)</b>	<b>12</b>	<b>8</b>	<b>6</b>	<b>9</b>



One of the rice fields below Ta Lang power plant no longer producing two annual crops due to lack of water. © NGUYET DANG

## Key findings

### 1. Overlapping environmental changes and policy outcomes

The province of Bac Kan has undergone multiple environmental changes that are not only the result of biophysical responses to the impacts of environmental and climate change, but also a result of multiple environmental and climate policies, including agriculture cooperatives (1958–1981) followed by the privatization of land-use rights in the 1980s and the forest conservation and production policies in the early 1990s (Castella and Dang 2002). These policies have reshaped livelihoods and access to forests and water resources. In terms of biophysical changes in recent years, Vietnam has experienced an increase in average temperatures of up to 1°C and an increased number of hot days with the highest temperature rising above 35°C (UNFCCC 2019). All four studied villages experience a prolonged hot season that starts two months earlier than decades ago and now lasts from February until October with unusually high temperatures. Intensifying whirlwinds are another unusual phenomenon observed in the area. Interview data shows that, in 2018 alone, the frequency of whirlwinds has increased by a factor of four in living memory, damaging homes and livelihoods. As these biophysical changes proceed, forest policies that demarcate production forests from protection forests produce ambiguities that affect local communities' access to forest resources.

In addition to the demarcation of forests, other conservation and tenure policies have been implemented in Bac Kan Province. Afforestation and forest protection programs began in the late 1990s in the studied areas, before climate change concerns were prevalent in the region, with the aim of protecting water resources and preventing soil erosion. These include the 'Regreening the Barren Hills' program to promote reforestation and provide subsidies for seedlings for production forest plantations and the 'Five Million Hectare of Afforestation' program that focuses on granting forest tenure rights to households and communities (Trædal and Vedeld 2018). As a result of decentralization policies, conservation responsibilities for both special-use and protection forests have been shared with communities represented by Commune People's Committees and village management boards. In exchange for the protection of these forests, a community receives an annual fee of 330,000 Vietnamese Dong, roughly US\$ 15.00, per hectare per annum. This amount can be paid either to individual households or to communities represented by village management boards.

Finally, hydropower has also been a major factor in changing environmental conditions and access to resources in the province. Under efforts for climate change mitigation (PMD 2015), the province promotes investment in renewable energy through hydropower and has identified 28 potential sites for development of small and medium-size hydropower plants (Phan 2019). Construction has been underway at six of those sites. Dong Phuc, this study's commune, hosts the 4.5 MW Ta Lang hydropower plant that has been operating since 2009. According to interviews in Na Thau, the village below the Ta Lang power plant, the plant's operation has reduced the availability of water for irrigated rice production for downstream villages. This observation challenges the country's technical discourse on hydropower development. The idea that hydropower serves multi-functional water uses such as fishery and agriculture activities, because it returns water to the source, is still ascendant in the energy sector of Vietnam (Pham 2017).

### 2. Reshaping access to natural resources and livelihood strategies, and reinforcing inequality

The biophysical responses to environmental and climate change have contributed more to reshaping livelihood strategies and land-use practices of local groups than to determining their access to resources. Interview data shows that earlier and prolonged hot seasons contributed to crop loss and to food shortages, forcing low-income households to go into debt. Local farmers cope with extreme heat and sun exposure by modifying their working hours in the field, starting earlier in the morning and extending lunch breaks. This results in fewer working hours per day

and more working days, compounding both social and economic stress through decreased productivity. Data from the interviews shows that better-off households with older farmers and/or access to large farms have hired additional labourers to cover the work demands. In poorer households, increased labour demands place additional burdens on female farmers belonging to the Tay and Dao ethnic groups, who take on the drudgery tasks in farming more often than men. Among the interviewed households, incomes are reduced from upland crops such as corn, sweet potatoes and beans and from animal husbandry, which are the main livelihood sources of the poor households. The livelihood strategies of better-off and middle-income households are characterized by forest plantation, aquaculture, commercial fruit tree and paddy rice cultivation (Dang forthcoming). Those livelihood options are either less susceptible to drought, such as fruit trees and forestry, or involve access to irrigation water, such as paddy rice and aquaculture. The biophysical effects of climate change, therefore, endanger the poorest households disproportionately. The study also found that, particularly for poor households, offering labour for wages has become an increasingly important livelihood option to make up for income shortfalls, to allow them to repay their debts, and to cover necessary farming inputs.

Forest resources have long served as a buffer during periods of critical income shortfalls in these villages, according to the interviews. Their information indicates that the implementation of various environmental policies have affected local villagers' access to land and forest more than the biophysical changes have. Environmental policies that demarcate between protection and production forests have not benefited local communities equitably. Protection and special-use forests are managed by state institutions, and both categories entail restricted access. Moreover, when protection forests become degraded, these can be recategorized into production forests. Conversely, recategorization from production to protection forest takes place when natural vegetation has regenerated, and has thrived, in production forest. Such pendulum swings and fluidity in recategorization affects access for forest-dependent communities to forest resources, creating winners and losers in the process and possibly affecting incentives. Many interviewed green-book holder households reported having had their production forests recategorized to community protection forest in the last few years. This conversion from production forests to protection forests created significant confusion and frustration among green-book holders because while their *de jure* user-rights over the forests were maintained they were not allowed to benefit from the forest. This results from a lack of transparency in the process of forest evaluation and categorization (Dang forthcoming). To prevent former green-book holders from returning to their recategorized production forests for logging purposes, heavy financial penalties have been imposed. For example, a household in Ban Chan had to pay a fine of 80 million Vietnamese Dong, around US\$ 3500.00, for cutting trees in a forest that used to belong to their family and that thrived under their care.

Hydropower development in the studied area has also reduced access to water for agricultural use by the communities located downstream and subsequently affected their livelihood strategies. In Na Thau village, below the Ta Lang hydropower plant, water shortage was evidently significant, according to interviewed farmers. The power plant is supposed to release water twice a day to water systems, including natural streams and irrigation channels. However, when the water becomes scarce in the October to April dry season – also spring cultivation season – the power plant reduces the water release to once a week or even once a month. Water scarcity has compelled the villagers to reduce their cultivation of paddy rice, their key staple food crop, from two annual harvest to only one or to shift to less water-dependant crops such as maize, which is mainly used as animal feed. Water shortages have increased costs for some households as they have to buy fuel to pump water from natural streams into their fields.

These diverse environmental policies and actions reinforce pre-existing unequal access to land between and within ethnic groups and generate mixed effects on villagers' access to natural resources and on the livelihoods of local communities. Other research conducted in Dong Phuc commune found that a programme resettling highlanders to the lowland in the early 1960s produced unequal access to farm and forest land among different ethnic groups that persists to

this day (Dang forthcoming). The Dao and H'Mong villagers, who are the most recent resettlers, have less paddy rice and forest land than the majority Tay people, who were resettled earlier. The amount of available labour was another determinant of inequality in forest landholdings. During the cooperative era, from the 1960s to the 1980s, forests were considered an essential resource for agriculture and economic development. Consequently, households with more labourers in that time period were able to claim more forest area for production activities compared to those households with fewer labourers (Zingerli et al. 2002). The forest demarcation and privatization policies in the 1990s did not redistribute forest land but, in most cases, served to legitimize pre-existing and now unequal land distribution patterns.

In a context of environmental changes and unequal access to forests, it is interesting to underline that discourses on forest protection and afforestation that were widely promoted to conserve environmental benefits such as water provision and soil protection have influenced how local people interpret recategorization processes that affect their access to resources (Trædal and Vedeld 2018). Most of the respondents in the villages that were not negatively affected by the hydropower plant attributed their observed increase in water resources to more forest coverage resulting from forest protection. Although there is no evidence to establish a correlation between forest policies and local water resources, the presumed correlation has been promoted by the government's forest protection public campaign. This widely held perception has progressively silenced and/or weakened the discontent expressed by households whose access to forests has been restricted or revoked by forest demarcation policies. In fact, many of the respondents from those households claimed to accept the decision – and their resulting limited access to resources – for the greater good of the whole community.

### 3. Gender relations, migration, and access to resources

All the ethnic groups in the researched sites are patriarchal and patrilineal. Although statutory laws recognize equal land rights and social status between women and men, traditional patrilineal practices prevail. However, gender roles and identities have transformed over the past few decades, particularly as a result of increased access to education and to labour migration, contributing in turn to more secure control over land resources for women.

In the researched areas, migration paths are differentiated across cultural, gendered, generational and educational lines. The majority of long-term migrants are young Tay and Dao women aged between 18 and 35 years with high school education, who leave to work in industrial parks in the neighbouring provinces of Thai Nguyen and Bac Giang. In general terms, older women and men sell their labour seasonally and keep a stake in the farm during the rest of the year. In contrast, labour migration in the H'mong village is still perceived as a new livelihood option that is only taken up seasonally by a few young men. This might be explained as the manifestation of H'mong's traditional self-sufficient economy demonstrated by their detachment from cash-based livelihoods (Dang forthcoming). In the villages where women's out-migration is significant, the ability of many women migrants to provide income for their families when needed has reinforced the image of women as independent income earners.

Over time, women's roles and contributions to the household economy have been increasingly recognized by their communities, by their husbands and families – and by themselves – as equal to men's contributions. Their voices and social status have improved accordingly, particularly within the households. In fact, many female respondents claimed that gender roles have been reversed and they have become the main decision-makers in their families. Even if changes in labour structures and access to education are not linked directly to environmental conditions or policies, they have happened in parallel and have contributed to the empowerment of women. This empowerment has produced a more secure control over and access to land for women. Today, sharing land with daughters has become a more common practice in Tay and Dao ethnic groups, particularly in the households with larger landholdings. Significantly, the vast majority of women respondents stated that they have gained more equal control over household



Women's group reporting on transitions to opportunities and influence © NGUYET DANG

decisions involving land use and management of both farm and forest land. Through livelihood diversification strategies offered by migration, women have also become less dependent on land-based livelihoods. As a result of increased control over and access to land, as well as to benefits from diversifying their livelihoods, women are now less afflicted by the reallocation and appropriation of land resources. Additionally, and as a result of these changes, while men have maintained their status as household heads, they have gradually taken on more domestic roles such as cooking and child care, given that their wives are often working away from home or are involved in the same heavy but mechanized farm work as men are. As a result, gendered roles and power structures have started to shift, not only with regards to access and control over land resources but also with regards to decision-making power and labour relations within the households.

## Conclusion

Access to natural resources determines the livelihoods of communities all over the world. In the studied area, this access has been transformed by biophysical environmental changes – the motivating premise for policy responses and rationalizing discourses. But perhaps more importantly, access has been transformed by a panoply of environmental and tenure policies that transform socio-natural configurations, revisit entrenched vulnerabilities and inequalities, and mould the perceptions of local communities with regards to environmental change. In terms of ethnicity, these policies have reinforced pre-existing inequalities among ethnic groups. In terms of gender, although not directly attributable to environmental demarcation policies, the recent economic influence gained by women has begun to alter the power structures that determine who has control over and access to land. Finally, local perceptions around the presumed capacity of forest protection to increase the availability of water resources have shifted the attitudes of local communities with regards to their limited access to forest resources and have served to justify the appropriation of natural resources for alleged conservation aims.

These findings are important for a number of reasons. First, they show how the winners and losers from specific environmental changes and policies diverge with regards to ethnicity and socio-economic class. Second, the research findings show that an increase in women's access to education and labour migration opportunities can contribute to their empowerment, which in turn has translated into a safer control over and access to resources. The ability of migration to provide viable livelihood strategies and the empowerment of women is highly contested, context specific, and greatly dependent on cultural norms and socio-political and economic circumstances (Melde et al. 2017; Vigil 2019). Nevertheless, this research shows how migration can indeed support transformative social change under certain conditions. When this is possible, these changes can then shift the power dynamics that underlie pervasive social and gender inequalities in the context of environmental and climate change. Thirdly, and by paying attention to how discourses shape realities, the research shows how the assumptions that focus on the links between conservation and environmental protection have shifted the propensity of local communities to dispute what they perceived as an unjust allocation of forest resources. In so doing, this research demonstrates the need to pay more explicit and sustained attention to how access to natural resources is shaped by both environmental changes and environmental and climate-related policies. At the same time, evolving social identities intersect to give way to diverging power configurations in resource entitlements. As well, this research shows the authority of prevailing discourses that shape perceptions of how resources should be allocated and hence who should control them. By influencing the distribution of natural resources, these social, economic and political processes will play crucial roles in pathways towards either sustainable or unsustainable development.

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