Forests, peoples, and governments: Persistent land-use conflict in Northern Thailand

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Abstract

Land-use conflict in Northern Thailand has led to large-scale deforestation. This article suggests two reasons why this conflict has not been resolved despite the many legal and institutional approaches taken by Thai governments over the decades. First, conflicting directions embedded within the national policymaking level caused uncertainty for policy implementors at ministerial levels. Second, policy-drivers at the local level interacted with the specific socioeconomic context of upland residents in a way to make land-use conflict persistent. Contradictory messages by top policymakers, combined with the national ministries' focus on purely functional tasks, diminished the importance of a local area-based approach necessary for land-use conflict resolution. Additionally, vested interests favoring agricultural expansion into the forests have been more diverse and influential than those favoring forest conservation; the former having tools at hand to incentivize smallholders to encroach into forested areas. Further driving agricultural expansion was that, in a management vacuum, local private sector actors acted as the *de facto* policy coordinators for the fragmented government local operations; however, on the forest conservation front, there was no coordinating body. This imbalanced situation has proved fertile soil for conflict.

A considerable portion of conflict and peace economics literature considers disputes over exploitable natural resource wealth as the possible causes of, often violent, conflict. But much (and perhaps even most) of this literature often does no more than include a regression variable, for example fossil fuel-related exports, revenues derived from mining operations, or the GDP percentage of agricultural output. Detailed studies delineating more precisely what the "natural resources" in question consist of, what exactly they entail, who the contesting parties are, and just why they are in conflict make up a far more peripheral part of the literature. Yet this sort of detail would seem important to characterize any underlying, and perhaps long-standing, roots of conflict. For instance, are there certain bargaining failures at hand that perhaps could have been addressed had they been specifically identified and brought out for discussion?

This article, therefore, presents a mostly descriptive case study that discusses land-use related conflict between forest encroaching cash-crop farmers and agro-industry interests on one side, and various government agencies and forest conservation interests on the other. While forest conservation is professed, lack of a clear and concerted national policy and local implementation has led to both significant deforestation in Thailand's north, and to ongoing livelihood struggles among local populations.

The conflict over management of forest resources has, at times, led to suppression, protests, trials, and out-migration. However, they have rarely resulted in prolonged open outbreaks of mass violence—as such, Thailand's land-related conflicts have tended to be fairly "silent". Nonetheless, people and forests are damaged by the continued absence of clear and consistent national policy formulation and implementation.

Many Thai governments have put natural resource and environmental (NRE) management and sustainable land-use among the country's top policy agenda items—as reflected in quinquennial National Economic and Development Plans (NESDPs). Conservation was especially highlighted when, in 2002, the government

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adopted the late King Bhumibol Adulyadej's "sufficiency economy" philosophy as a developmental goal. Since then, the relevant implementing ministries have translated the sustainable development concept into legal and institutional frameworks. In addition, during the decades prior to this, Thai governments have undertaken numerous measures to protect forests and discourage encroachment. And yet conflict over land-use, caused by the conflicting aims of governments and local people, persists and continues to result in largely unsuccessful NRE management. What went wrong? And why has it been so difficult to successfully address this conflict?[1]

Many studies have investigated the causes of land-use conflict from historical, institutional, and administrative perspectives. Their results have shown that several factors may cause friction and block the implementation of sustainable land-use. These include:

- Contested tenure and/or overlapping land claims.[2]
- Coordination failure both among government policies and offices, and among upland forest stakeholders.[3]
- Inability to enforce laws and regulations.[4]
- Neglect of the local socioeconomic context and market forces.[5]
- Insufficient involvement of local residents and inequitable benefit-sharing between locals and the state.[6]

The issue of land-use conflict in the north has also often been co-mingled with a focus on the ethnic minorities who inhabit much of the northern highlands. Their practice of shift-cultivation was taken as the initial cause of forest encroachment.[7]

This article covers over fifty years of land-use conflict in Thailand's north, ranging from the beginning of the implementation of the NESDP in 1961 to just before the 2014 *coup d'etat*. It contributes to the existing literature by examining the conflict through a three-fold lens. First, over the years, policymakers (and policy sponsors) have issued conflicting, even contradictory and mutually exclusive, policy directions; second, national ministerial and local policy implementors have championed conflicting interests; and third, the socioeconomic interests of forest dwellers that made them vulnerable (and succumb) to agro-industrial interests, has not always been taken into effective account by either policymakers or implementors. As a result, at the local level, the private commercial sector has been able to act as the *de facto* policy coordinator of fragmented government operations—thereby favoring agro-industrial expansion and leaving both forest conservation and smallholders to suffer the consequences.

Northern Thailand's large-scale deforestation has been exacerbated, if not caused, by land-use conflict. For decades, this conflict has not been resolved, indeed it has been enabled by conflicting national aims with no mechanism for resolving policy contradictions. Similarly, fragmented local conservation initiatives are overwhelmed by public and private sector drivers for greater cash-crop outputs; a situation that facilitates and promotes deforestation. With minimal policy consideration for the population livelihoods versus land-use until 2019, sustained conflict was, and still remains, inevitable.

Furthermore, this article sheds light on the reasons behind hitherto inconclusive and inconsistent findings regarding the relationship between environmental degradation and violent conflict. Many studies overlook the political and socio-economic factors underpinning levels of social resilience. In this case, while the land-use conflict region overlaps with areas that are of high ecological value and sensitive to human-made destruction, it is also the only opportunity left for forest dwellers' survival. Therefore, the way the state chooses to deal with forest dwellers affects their land-use decisions, their level of trust, and their social cohesion. In turn, this determines their capability to handle exogenous shocks (including climate change), and so influences the risk of conflict.[8]

Structurally, this article first provides background information on Thailand's northern forests, peoples, and the multitude of public sector institutions assigned to govern them. Second, it focuses on the perspective of local smallholders and their livelihood struggles. Third,

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it examines national policy formulation. Fourth, it considers policy implementation at the national ministerial and local levels. Finally, this article discusses the whole from a game-theoretic perspective before concluding.

Background

The northern forests

Thailand is a unitary state, divided into 76 provinces and the capital city, Bangkok. The country's total land area is 51.7 million hectares, with 33% taken up by the Northern Thailand region. The north's mountainous areas are split into 17 provinces and further grouped into 4 clusters (see Figure 1). Many important watersheds originate from this region, which also contains more than half of Thailand's total forest reserves. Some 59% of the Northern Thailand region's forest reserves are protected with human activity being outlawed. Only about 18% of land in this region is flatland, the rest is categorized as upland (up to 500 meters of elevation) and, above this, as highland. Despite protection, from 1973 to 1998, the region suffered forest losses of 23.9 percentage points, a decline that continued thereafter (albeit at a slower pace). Large-scale conversion from forest to crop land after 1980 was driven by an increasing demand for food, biofuel, and timber.[9]

Since 1977, the government has set, but has not managed to meet, a target of maintaining a national forest cover of at least 40% of the country's total land area. Although conservation discussions were further enhanced with the introduction of the concept of "sustainability" in 2002, the forest area declined by a further 0.32 million hectares per year from 2008 to 2013.[10]

Local peoples, agro-industry, and their interests

Approximately 12 million people live in Thailand's north today. The majority are Khon Mueang, however, their population size is difficult to estimate. They originally come from a lowland Thai-ethnic group, having continuously migrated northward over the past half century. The remainder are ethnic minorities (the "hill tribes" people); their ancestors migrated from neighboring countries over the course of centuries to occupy land and practice shift-cultivation. Since the mid-19th century, the northern forest has been logged for commercial purposes with immigrants and forest dwellers settling on the cleared land. Today, about 13 ethnic groups reside in the uplands and highlands, with a total population a little larger than 1.1 million people. Starting in 1969, the Royal Project, initiated by King Bhumibol Adulyadej, encouraged upland ethnic minorities to substitute opium with legal cash-crop production and to change from shift to permanent cultivation. With timber companies still logging, lowland farmers and agrobusinesses migrated north to farm the cleared land. Forest management from 1986 to the beginning of the 21st century displaced a large number of forest dwellers to the lower lands (45% of whom were ethnic minorities). Contrastingly, at the same time, landless people, lowland people, and others from throughout the country, saw the cleared land as an opportunity for illegal occupation. Cash crop expansion in the uplands continued, with growing maize becoming the farmer's main source of income from the early 2000s. Given the priorities and activities of the Thai agro and animal feed industries, maize growing presents itself as the only rational economic option and so upland smallholders' livelihoods have inevitably conflicted with the goal of forest conservation. [11]

Politically, the Northern Thailand region, especially the rural upper north, was considered a stronghold of the former prime minister, Thaksin Shinawatra. During Thaksin's time in office, the issue of land-use conflict, in particular "forest reclamation", was not in the spotlight. But "land for the landless" and "land deeds for every land holder" were among his many populist policies. His strategy of mobile cabinet meetings around the country (especially in the rural north), gave him the opportunity to hear of local problems. It was reported that he occasionally distributed land deeds during his tours. In addition, his governments promoted rubber as a new moneymaking crop for northern farmers.[12]

National and subnational government institutions

The later analysis in this article is located within the policy setting described here. It provides an overview of the key policy actors at the national level and the policy

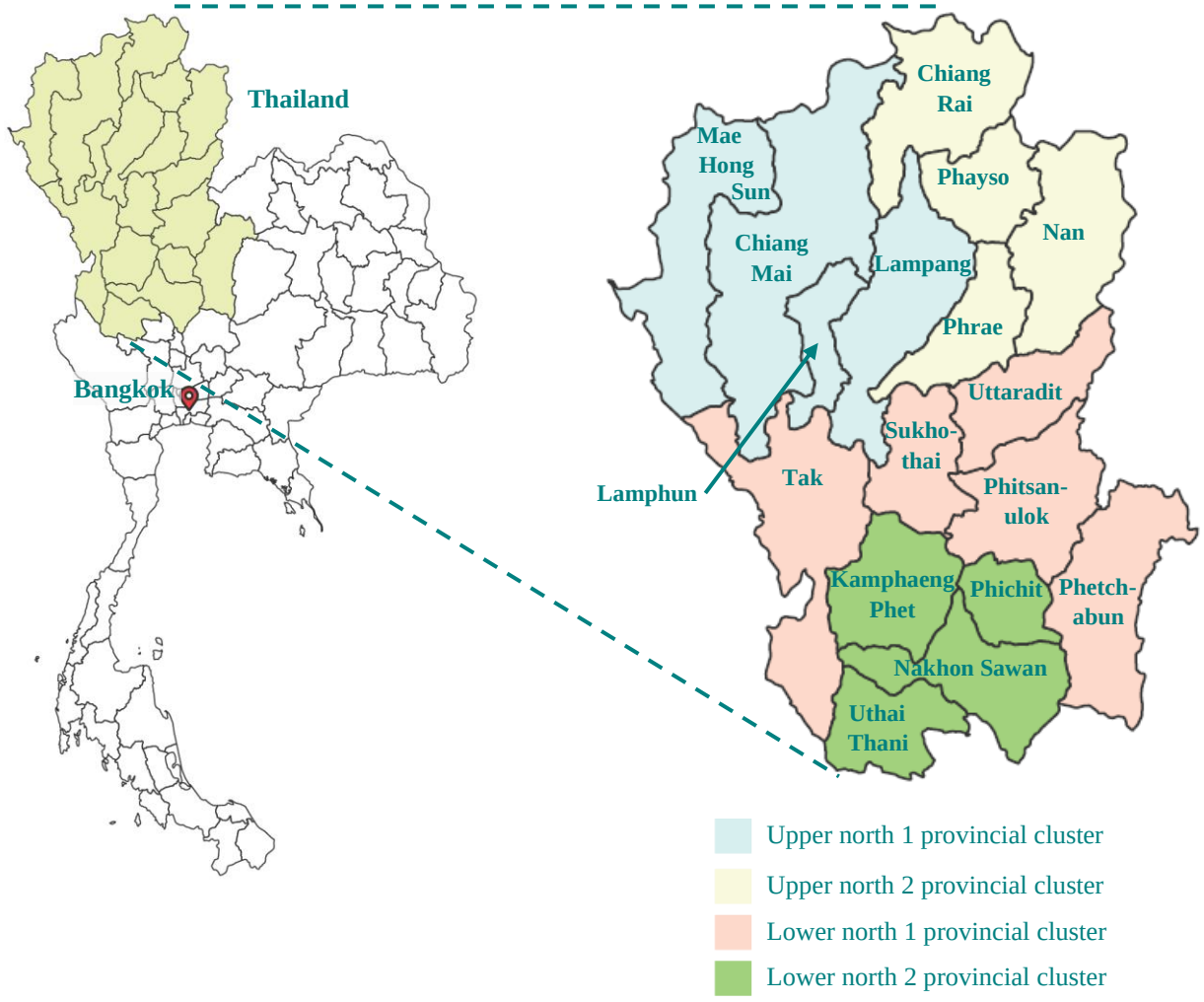

Figure 1: Northern Thailand and its 17 provinces.

implementing institutions at the subnational and local levels (see Figure 2).

Thailand's public administration is divided into three levels: First, the central government, consisting of ministries, bureaus, and departments; second, provincial governments; and third, both local-level administration organizations (LAOs), examples of which are subdistrict-level administrative organizations (SAOs), and provincial-level administrative organizations (PAOs). The central framework for the country's development is the NESDP, formulated by the National Economic and Social Development Board (NESDB). Each ministry's projects and implementation plan need to be consistent with this national plan. From policy drafting to implementation, the Ministry of Natural Resources and Environment (MONRE) and the Ministry of Agriculture and Cooperatives (MOAC), are the key ministries involved in issues of land-use, forest conservation, and the agricultural practices of upland farmers.[13]

The MONRE, established in 2002, has designated its Royal Forest Department (RFD) and its Department of National Parks, Wildlife, and Plant Conservation (DNP) to be in charge of forest management and conservation.

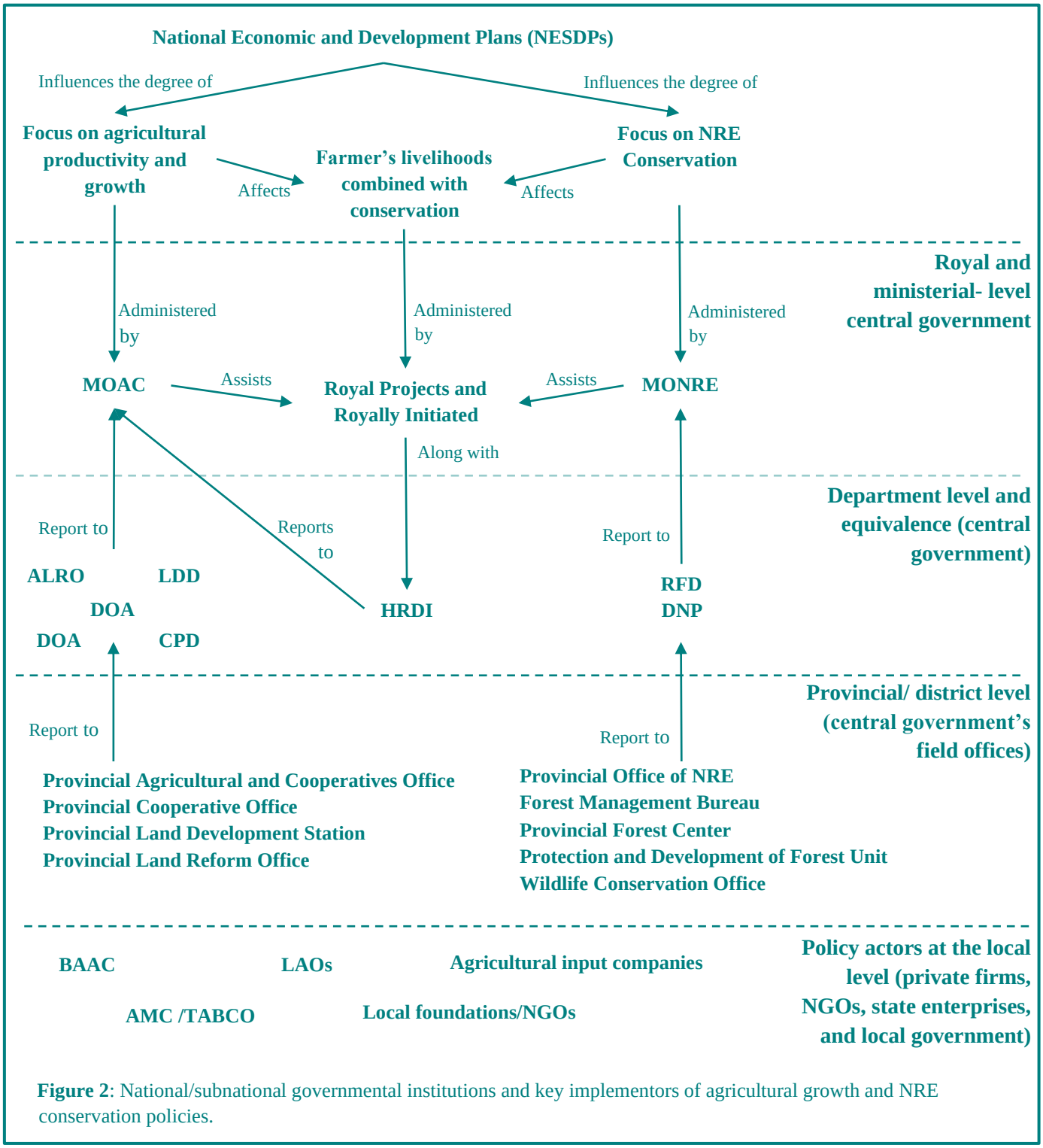

Figure 2: National/subnational governmental institutions and key implementors of agricultural growth and NRE conservation policies.

Prior to 2002, the RFD was housed within the MOAC and was the sole national government agency in charge of forest utilization and conservation.

Once the MONRE was founded, responsibility for protected areas (i.e., conserved forest) was transferred from the RFD to the newly created DNP. Since then, the

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RFD is left with responsibility for managing forest resources *outside* protected areas. At the local level, the MONRE has many field offices operating around the country (see the right-hand list in Figure 2). SAOs also take part in managing forest use, with 5,320 SAOs established so far.[14]

The MOAC performed the role of promoting cash-crops through many departments such as, the Department of Agricultural Extension (DOAE), the Agricultural Land Reform Office (ALRO), the Department of Agriculture (DOA), the Cooperative Promotion Department (CPD), and the Land Development Department (LDD). At the local level, their field officers perform supporting roles through their provincial and district units (see the left-hand list in Figure 2).

Another two key players at the field level are the Bank of Agriculture and Agricultural Cooperatives (BAAC) and Agricultural Marketing Cooperatives (AMCs). The BAAC is a state enterprise, established in 1966, providing financial assistance to farmers to reduce informal, high-interest rate lending. The BAAC and the MOAC helped farmers establish AMCs at provincial levels to collectively purchase farm inputs and sell produce at a fair price. In 1992, AMCs and the BAAC founded the Thai Agri-Business Co. Ltd. (TABCO) to represent all AMCs. TABCO collaborated with private companies to supply hybrid maize varieties to farmers to increase maize productivity.

The primary vehicles for the promotion of highland sustainability have been the Royal Project and Royally Initiated Projects. Established in 1992, the Highland Research and Development Institute (HRDI) is a public organization affiliated with the MOAC to conduct R&D to support and extend the area-based work of the Royal Project on upland/highland areas. The Royal Project has 39 operating sites across the upper Northern Thailand region. Many of these sites are in forest reserves and conserved forests.

Having outlined the policy arena, this article now turns to consider the perspectives of the various economic agents engaged in the struggle over forest conservation.

Local smallholders and their livelihoods

The unique history the upland farmers migration, socioeconomic conditions, and livelihoods made the area particularly vulnerable to land-use conflict. Three instructive characteristics of this situation are discussed in the following subsections.

Misperception regarding the composition of upland residents led to a narrow policy focus and mistrust between local people and the authorities

Upland ethnic minorities' shift-cultivation was viewed as a threat to the forest and harshly criticized by lowland people and those in the central region. Moreover, the minorities' history of illegal migration, their involvement in the opium trade, and some communist insurgent activities (1965–1983) led to popular and institutional mistrust of them. Negative stereotypes associated with hill tribe peoples led to the misperception that they were to blame for the deforestation in the northern uplands. However, as described previously, most upland residents were in fact lowland peoples who had inwardly migrated. The result was an overly narrow policy scope and the mis-targeting of upland development.[15]

Early political conflict and settlement prior to the designation of forest reserves made officers reluctant to enforce law

The National Forest Reserve Act (1964) provided a new definition of forests that immediately converted 40% of the total land to state ownership (that no one could acquire by law)— however, fully 10 million people were already living on this land. Areas designated as national forest reserve increased continuously to 46% of the country's total land area by the 1990s, while *actual* forest coverage fell from 53% in 1960 to 25% in 1985. These contrary trends reflect the ever-larger numbers of illegal encroachers residing in the national forest reserves. Furthermore, from 1976 to 1982, the government itself encouraged people to settle in zones in the north where communists were believed to reside (to decrease the opposition base)—a policy that encouraged much slash-and-burn activity.[16]

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Additionally, officers were reluctant to enforce laws because most upland settlements arose before the designation of forest reserves. Some of the designation and demarcation of national forest reserves were done by drawing lines on a map—i.e., without actual investigation of residence and cultivation before the reserves were established.17

Farmers' limited market opportunities associated with their geographical location

Upland farmers had no irrigation, no capital, no land ownership, and were far from markets. This resulted in a tendency to choose crops that received government support. Farmers were highly responsive to price-support policies such as price guarantees or maize pledging schemes, principally designed to provide farmers with guaranteed "fair" prices in order to mitigate market price volatility. Additionally, the high market demand for maize, an extensive network of local gatherers and silos, easy access to agricultural inputs from private companies, and ready loans from the BAAC, all made maize the easy choice. Upland farmers also became locked-in via a debt-cycle of continual loans to pay for their reliance on chemical inputs to ensure crop productivity.[18]

In all, when considering deforestation of the uplands, the government not only deals with ethnic minorities; they deal with a majority population of conventional smallholder farmers who are responsive to market incentives. This historical context, along with the geographically determined upland limitations, suggest that to tackle land-use conflict in the region, any conservation policy that separates farmers' livelihoods from forest conservation is likely to fail.

National policy formulation

Examining all eleven NESDPs (implemented from 1961 to 2016), several key elements likely caused confusion and uncertainty for policy implementors which would, in turn, lead to the unsatisfactory conservation policy outcomes. Three of these elements are discussed in the following sections.

The upland conservation agenda was neglected for over 20 years

From the first to the fifth national plan (1961–1987), the country's main goal was rapid growth through expansion of the agricultural sector and associated exports. At the start of the first plan, forest areas occupied roughly 53% of the total land area. While the plan set aside 50% (25.66 million hectares) of this land, the government also prioritized the expansion of agricultural output. Maize was promoted on the uplands, achieving a 30% productivity increase by the end of the period. Agricultural credit to farmers was expanded through the BAAC in the second plan (1967–1971), with the third plan (1972–1976) incorporating social dimensions. Still, the second and third plans show no evidence of any clear direction for NRE management. The fourth plan (1977–1981) supported crop intensification and the development of agro-industry; it also revised downward the target of maintaining of forest reserves from 50% to 40% of forest areas. A conservation plan at the time was constructed for the purpose of promoting forest utilization (e.g., timber production). By the beginning of the fifth plan in 1982, forest area had fallen to 30% of the country with the upper north region still geared toward increasing agro-output. Highland policy did not aim for conservation *per se*, nor on settling the land-use conflict; instead, it was primarily to tackle hill tribe issues. The presumed negative effect of minorities' involvement with the opium trade and their shift-cultivation was being used as an argument to resettle minority groups away from conserved forests. In the face of strong resistance, the government avoided actual resettlement and instead launched a series of development programs. Included in these was the provision of residence permits, although these did not give bearers a right to own land.[19]

A narrow approach to conservation being applied to most plans

In contrast to explicit development targets set for agricultural and agro-industry growth, there were only limited references to conservation in the first to fifth plans. For example, the fifth plan's "target" for

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conservation consisted of just stating the amount of forest area to be conserved. Its strategies, such as land demarcation and the designation of conservation areas, still lacked any engagement with people's livelihoods.

The RFD did not have many government or private sector allies identified in the national plans—in stark contrast to the production of cash-crops. Cash crop production and expansion received support from the BAAC and many government departments in charge of land, seeds, agricultural promotion, and research. Over the period 1978–1980, boosting Thailand's agricultural sector secured 46.7% of the country's total R&D budget. Conservation, however, received only 1.6% of the nation's R&D budget in this period.[20]

Contradictory goals and no clear priority on issues that require tradeoffs

The sixth to tenth national plans (1987–2011) showed an increased focus on various aspects of conservation. In the sixth plan (1987–1991), the 40% forest target was divided into 15% for "conserved" forests and 25% for "economic" forests. However, following a nationwide ban on logging in 1989, these figures were reversed in the seventh plan (1992–1996). In contradiction, throughout this period, the government also sought faster growth in the agro-processing industry.[21]

It was only from the eighth national plan (1997–2001), that we see aims to replace monoculture with sustainable farming. The ninth plan (2002–2006) adopted the King's "sufficiency economy" philosophy, emphasized local participation in NRE management, and designated all Class 1 watersheds as conservation areas. The tenth plan (2007–2011) emphasized the correct identification of reserved forest boundaries. Despite all these plans, forest coverage stood at only 33.6% by 2011.[22]

Contradictory priorities can be seen clearly in the tenth plan. While resource conservation was highlighted as important, another goal was to be a world-leading food producer through the expansion of conventional agro-production, from 12.4% of GDP in 2005 to 15% in 2011. No implementation plan suggests how these two goals were to be achieved simultaneously, especially as agricultural land in the north overlaps with forest land. So, while there were strategies to tackle forest encroachment, where did they rank and interface with the strategies and actions supporting the conflicting national goals?[23]

In the eleventh plan (2012–2016), measures such as registration of landowners in all conservation areas and providing precise definitions of acceptable land-use in conservation areas were added. However, the plan also aimed to further increase the share of agricultural commodities and agro-industry to at least 16% of GDP while still lacking any conflict resolution mechanisms.

Without clear, non-contradictory prioritization of national goals, area-specific plans, and specific directions to tackle the livelihood concerns of locals, what are policy implementors in national ministries and local areas to do? As one might expect, the responses were varied and are discussed in the following section.

Policy implementation by national ministries and their field offices

In policy implementation, there are three major channels by which Thailand's national annual budget is used to address local NRE issues. The first is through allocations to each ministry, which then funds implementation by ministerial field offices (Figure 2). The second channel is through direct budget allocations to provinces, or clusters of provinces in accordance with provincial/regional plans. However, at approximately 0.2–0.9% of the total national annual budget, the allocation is relatively small and cannot fully address the complex issues specific to each area. Given its small effect on NRE management, this channel is not further discussed in this article.[24]

The third channel, starting in 2007, is through allocations to LAOs, which then use their revenues (from local taxes/duties and from additional supporting government grants) to address local concerns. However, their role in area-based NRE management lacks strength due to a lack of skills, manpower and its dependence on central government funding. The implication of this is separately discussed later in this article; while this section focuses on the role of national ministries.

Two issues in particular stand out when examining the details of national policy implementation such as:

The structure of national annual budgets; actual expenditure; projects and activities related to northern land-use matters; forest conservation; and reforestation commitments by the MONRE and the MOAC from 2002–2014. The first issue concerns ministerial use of budgets and planning, while the second concerns the performance measures used to assess NRE work.[25]

Too few agencies, spending too little and all doing conventional unintegrated functional work

The MOAC's functional work has long focused on providing water for agriculture, managing commodity price levels, increasing the number of registered farmers of the primary economic crops (e.g., maize), and increasing agricultural productivity and efficiency. Work directly addressing highland agriculture and land-use issues are annually funded through the HRDI. However, the HRDI receives only 0.04% to 0.06% of the MOAC's annual budget. Departments such as the Royal Irrigation Department, the LDP and the ALRO also allocate part of their budgets to assist the work of the Royal Project and Royal Project Extension. However, the 39 Royal Project sites only cover an area of approximately 0.8% of the northern upland/highland area (with most of these being at high elevations). Although the HRDI has been expanding its work sites (including those for the Royal Project and Royal Project Extension), the combined area is exceedingly small when compared to the total upland and highland area in the region.[26]

In the same vein, the handling of persistent land-use conflict was not part of the RFD's and the DNP's main duties. When examining RFD budget allocations and corresponding projects/activities, the RFD is mostly focused on the utilization of forests, preventing forest fires, demarcation, and assisting in Royal Projects and Royally Initiated Projects. There was support for the registrations of community forests, but this did *not* cover those who found themselves living on land now designated as conserved areas. After 2009, reforestation and rehabilitation were added. The DNP's conservation work in protected areas also emphasizes demarcation, policing, arrest/suppress operations, and prosecution. Notably, resolving land-use conflict and finding a way out for the affected farmers was not part of their work.

Performance indicators of governmental units participating in upland development were mostly function-based—leaving little room for area-based and/or long-term activities

Since 2004, all government agencies were required to use performance agreements and measurements in which a series of key performance indicators (KPIs) were deployed. These KPIs were created by departments, or their structurally equivalent bodies. Rewards such as bonuses and promotion of public officers are based on successful performance versus these KPIs. The majority of the KPIs at the ministerial and departmental levels reflect purely functional tasks and vary little from year-to-year. As a result, there was little incentive to engage in the complexities of cross-departmental working to effectively achieve long-term national goals.

In the past few decades, the MOAC employed indicators such as agricultural gross domestic product and the number of registered economic crop growers. These indicators reflected the department's most basic functional work (i.e., supporting economic crop expansion) and did not consider the size of the cultivation area. Additionally, there are no KPIs that adequately capture progress concerning the long-term effects of area-based work—such as a reduction in the number of communities involved in land-use conflict. More importantly, for areas located in a national park, the MOAC indicators actually signal anti-conservation priorities.

A similar picture emerges from the MONRE's KPIs. For example, the leading indicators have been the amount of reserved forest and reclaimed forest, thus showing that emphasis has always been placed on a continuation of existing functional practices. Area-based work, involving long-term and tightly integrated collaboration across governmental units to positively influence local forest conservation behaviors, is not (yet) promoted by any performance indicators.

Policy implementation at the local level and the role of the private sector

This section considers policy at the local level and discusses three aspects in particular: First, the inability to locally enforce national conservation policies; second,

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local drivers for forest conservation and land-use conflict resolution remaining weak and inadequate; third, diverse drivers and institutions continuing to push for agricultural expansion at the expense of forests.

Inability to enforce a balanced conservation policy

Between 1941 to 2014, five substantial forest-related acts were promulgated taking a top-down command approach—none of them directly addressing NRE management by communities. The National Reserved Forest Act (1964) and National Park Act (1961) directly affected the right of traditional communities to access forest resources and declared them as illegal encroachers of state land (even though they occupied the land *before* the acts came into force). Subsequent protest by upland farmers led the government to pass the Agricultural Land Rent Control Act (1974) allowing six-year renewable land-rental contracts.[27]

Since Thai law does not permit legal title deeds to be held for any upland area, as a compromise, the government (the ALRO) introduced Sor Por Kor (SPK) certificates to farmers in 1982. These certificates provide usufruct rights for farming purposes only, do not entail full ownership, and can only be transferred to descendants.

In 1985, the National Forest Policy defined land with a slope of greater than 35 degrees as forest land that cannot be claimed by any land-use certificates, but it did not give attention to mitigating any consequent effect upon farmers' livelihoods. Policy enforcement further relocated at least 45% of upland ethnic minorities to new settlements with inadequate resettlement payments. In 1992, the RFD further classified national forest reserves into three zone types: Conserved forest (C), economic forest (E), and agricultural land (A). People were not permitted to inhabit or utilize the C-zones. However, relocation of people who occupied these lands before it was declared as a C-zone inevitably caused huge controversy. The government, therefore, compromised by introducing the concept of community forestry to motivate forest dwellers to get involved in resource management. In addition, 7 million hectares of degraded forest in the E-zone was transferred to forest dwellers in the form of SPK certificates. Compromise continued, with the government continually giving up degraded forest land (from A and E-zones) to the ALRO. For example, in 2002, the government allocated 93,200 hectares for cultivation by forest dwellers (via ALRO's SPK certificates).[28]

A clear indication of the lack of balance in the formulated conservation policy is the national government Cabinet Resolution of 30 June 1998 becoming an important tool to prove farmers' rights over settled land. Landholders who could prove that they had settled on and utilized certain parcels of land before June 1998 were entitled to take ownership of that land. This resolution led to many disputes and court cases, as in a number of instances it was technically difficult to prove settlers' ownership eligibility. Nonetheless, this resolution allowed forest-dwelling communities to remain temporarily in place until a more permanent solution could be developed. Recently, the 2019 National Park Act permitted smallholders, the landless, and poor farmers, who had occupied land before the enforcement of the National Council for Peace and Order No. 66/2014 (17 June 2014) , to live and cultivate that land, but it still does not grant ownership in the form of title deeds.[29]

Overall, the command-and-control approach, in conjunction with a series of compromise measures, has caused tension and confrontation between authorities and forest dwellers. Such an approach did not delve into the ultimate causes of land-use conflict—primarily because the concept of local participation and the consideration of farmers' sustainable livelihoods were missing.

Weak and inadequate local drivers for forest conservation and land-use conflict resolution

Despite their duties to assist the Royal Project, the Royally Initiated Projects, and the HRDI's on-going work, the leading KPIs of MOAC's and MONRE's departments do not support long-term conservation goals in land-use conflict areas. With no single agency identified to coordinate the fragmented forest conservation and land-use related conflict-resolution efforts, functional tasks are therefore addressed independently without strategic direction.

Civil society such as local foundations and NGOs

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have been part of the conservation movement from the start of the 21st century. Most of their work, however, is communication—to help voice locals' concerns and to increase conservation awareness generally. While SAOs have power to manage NRE within their boundaries, few SAOs have taken leading roles in local community forest management to date. The majority of SAOs are not yet ready in terms of capacity, governance, human resources, fiscal management, and accountability. As such, they are unable to perform roles requiring a high level of coordination and planning among relevant governmental units, NGOs, and local people.[30]

As for participation of local smallholders in NRE management, for over half a century the government did not engage locals as alliance partners in forest conservation. The Community Forest Act (2019), granting certain usage rights, was first drafted in 1991 but took 28 years (and several rewrites) to pass into law. So, it is only very recently that communities outside conserved forests can legally use forests (including using water reservoirs within their community forests).

As a consequence of all this, for the past sixty years, forest conservation efforts have primarily come from governmental units who serve their ministries' by executing purely functional tasks. This contrasts starkly with efforts devoted to agro-expansion.

Continual push for agricultural expansion

Growing cash-crops such as maize was believed to help in the alleviation of poverty in rural areas, while strengthening downstream agro-industries. Increasing productivity and the number of registered cash-crop growers were therefore part of the MOAC field officers' main tasks.

On the financial side, the BAAC allowed cash-crop farmers without land to use SPKs or Joint Liability Group arrangements as loan collateral. As most farmers take out annual agricultural credits from the BAAC, and hence automatically attain AMC membership, they find it convenient to purchase various farm inputs through AMCs. This relationship among farmers, the BAAC, and the private sector developed through the 64 AMCs spread around the country. The private sector exploited this relationship to actively engage in cash-crop promotion. TABCO, as the representative of all AMCs, collaborated with private companies to replace Suwan1, an open-pollinated maize variety, with a hybrid variety that increased productivity (requiring repeated seed purchase). As for the crop itself, an extensive network of middleman and millers' representatives grew to purchase maize from farmers and sell it to silo or feed mills.

Additionally, various governments implemented commodity price-support schemes through the BAAC. These policies were effective (in terms of farmers' participation) and, coupled with a strong demand for maize, made farmers ever more dependent on the BAAC.

For almost two decades, Thai governments have shifted the emphasis of successive national plans toward the encouragement of sustainable agricultural practices and forest conservation. However, the dynamics and key players at the local level relentlessly support a conventional cash-crop based approach. The private sector does not find much to be gained from farmers being diverted toward sustainable farming. What is missing is finding a role for the private sector in conservation.

Conversely, countering agricultural expansion, and consequent risk of land-use conflict, remains hindered by: The insufficient number of officials handling actual conservation work; the lack of an influential pro-conservation alliance; and slow progress in local participation in NRE management.

Discussion: A game-theoretic examination

Noncooperative game theory is an established tool for modelling conflicts of interests such as that between the state and villagers regarding forestland development. Its application allows us to understand why conflict is persistent and why Pareto-optimal outcomes cannot be easily achieved, especially in short-run contexts. In a simple noncooperative game, two players face each other, the government and the original inhabitants of land later proclaimed a national forest. The government has two options: (*S*) to strictly employ a command-and-control approach (any local use of forests is prohibited) *or* (*C*) to compromise in various ways (e.g., assigning usufruct rights and allowing full utilization). Likewise, land occupants have two options: Forest encroachment

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(*EN*) for a cash-crop based living *or* to comply (*RC*) with the government's conditions, that is, not encroaching. With a lack of communication and/or trust, a *myopic* vision would lead to a payoff matrix as in Table 1.

Table 1: Payoff matrix for land-use conflict in the northern upland

		Upland Inhabitants	
		Keep encroaching on forests (EN)	*Refrain from encroaching and comply with government conditions (RC)*
Government	*Strict command-and-control approach (S)*	-5, -5	-2, -10
	Compromise with exceptions/conditions (C)	-10, 5	5, **2**

Note: The payoffs are illustrative and chosen to afford a rough value comparison (i.e., not to convey an exact cardinal meaning).

For outcome (S, EN), the government loses due to high monitoring costs and escalating conflict over forest reduction. Farmers realize short-term gains from cash-crops, but at the cost of constant confrontation with state officers. The outcome (C, EN) incurs a higher loss to the government through the reduction of forest areas. Farmers again experience short-term gains from cash-crops but with fewer confrontations than outcome (S, EN). The outcome (S, RC) benefits the government as conservation goals are met, but at the cost of large monitoring expenses. Farmers, however, suffer loss of income, land access, and are unable to maintain their livelihoods. Finally, under outcome (C, RC) farmers generally comply with government strictures, but the government gives farmers land-use access subject to certain conditions. This would seem to be Pareto optimal, as the government benefits from no further encroachment and low monitoring costs, and farmers benefit from fewer confrontations (though their earnings are lower compared with non-compliance). As such, with the described options and pay-off in the table, cell (S, EN) is a Nash equilibrium in this one-shot game.

In Table 1, the highlighted low payoff 2 is important; any policy to increase it over the long-term would help secure the Pareto optimal outcome. One option may lie in the government defining land-use conditions in a way which reflects the level of trust (or lack of it) between the two parties. Farmers need long-term confidence in land-use rights to invest, re-invest, and generally take care of the forested lands they occupy. Also, given the strong market incentives to grow cash-crops, farmers need to be convinced that they benefit more from non-cash crop alternatives in the long run. Such trust and confidence might be fostered by genuinely incorporating an area-based approach, local participation in NRE management, and incorporating incentive-based conservation policies within the conservation strategy.

However, neither trust nor confidence has been established over the past 60 years. Lacking unity in policy direction, relevant ministries are not incentivized to favor an area-based strategy; their field offices perform isolated roles in accordance with their own functions and performance indicators. Separately and independently determined budgets allocated to each department led to fragmented funding toward local areas. This makes it difficult for any short-lived government to tackle local problems that require a holistic approach. The dynamic was quite different in relation to the expansion of cash-crops. Private sector and institutional drivers have taken on a role as de facto coordinators of fragmented governmental efforts to further their own interests. Furthermore, proper and effective incentive-based conservation policy has been long neglected. Based on an ill-suited command-and-control approach, the implementation strategies of NRE management mostly consisted of demarcation and designation of conservation areas. In contrast, conventional agricultural expansion policy included incentive-oriented schemes such as maize pledging schemes.

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Conclusion

From the upland farmers' perspective, agriculture "wins" as long as agricultural and forest conservation policies remain uncoordinated, and agricultural policy influence continues to prevail over that of conservation policy. In this climate, the ministerial implementor of national agricultural goals, the MOAC, developed effective local institutions and private sector networks to ensure the expansion of commercial crops. At the local level, incentive-based policies and stakeholders have been working in unison to promote cash-crop expansion. In contrast, conservation has been poorly served. A combination of contradictory messaging at the national policy level, a non-incentive-based policy approach toward conservation, and a lack of influential alliance partners, has enabled persistent deforestation.

While the new 2019 National Park Act and the 2019 Community Forest Act nod toward a "people live with forests" model, the government and farmers still need to agree on *balanced* conditions of land-use that take farmers' livelihoods into account. To begin with, national goals need to be clearly prioritized in respect to each other, as a necessary condition for successfully managing an area in land-use conflict. Additionally, finding a win-win model to incentivize ministerial/field offices to engage in area-based conservation approaches is vital—with a successful solution likely involving changes in departmental KPIs. Lastly, any incentive-based conservation schemes aimed at upland farmers need to be introduced through established agricultural institutions, and perhaps, through community forestry. In all, such activities may serve as a way forward to resolve Thailand's persistent land-use conflict and, consequently, mitigate the ever-present danger of the conflict becoming overtly violent.

Notes

The inspiration to write this article came from working as project leader in the action research "Social innovation for sustainable livelihoods of upland farmers" to assist upland farmers in Nan province of northern Thailand (to enable transition from maize farming toward more sustainable livelihood). I thank Thailand Science Research and Innovation for giving me this opportunity and for their support throughout. I am grateful to Jurgen Brauer, the EPSJ's editors and reviewers for their valuable comments and advice that help improve quality of the article immensely I also thank Thida Weangsamut for her excellent research assistance.

1. NESDPs: NESDB (1997). Sufficiency economy: this philosophy adheres to concepts of moderation and balanced development strategy to reduce vulnerability to shocks: NESDB (2002).
2. Yasmi *et al.* (2010), NHRC (2011); Phromlah (2014).
3. Offices: Yasmi *et al.* (2010). Stakeholders: Virapongse (2017).
4. Fujita (2003).
5. Teerasuwannajak and Pongkijvorasin (2015).
6. Phromlah (2014).
7. Hares (2009), Duangjai *et al.* (2015).
8. Theisen *et al.* (2013), Caruso *et al.* (2016).
9. Human activity outlawed: RFD (2020a). Forest losses: RFD (2020a). Further declines: Kyeyune and Turner (2016); Vongvisouk *et al.* (2016).
10. NESDB (2017).
11. Population: National Statistical Office of Thailand (2020). Khon Mueang: Baird *et al.* (2017). Ethnic groups: Ministry of Social Development and Human Security (2014). Cleared uplands: Virapongse (2017). Cash crops: Ekasingh *et al.* (2004), Brunn *et al.* (2017).
12. Founding the Thai Rak Thai party, Thaksin Shinawatra served two terms as prime minister (2001–2005 and 2005–2006). Following this, in 2008 and again in 2011–2014, he exerted much proxy influence via the People's Power and Pheu Thai parties in opposition. Land deeds: Phongpaichit and Baker (2008).
13. Pungprawat (2009).
14. Protected areas include national parks, forested parks, wildlife sanctuaries, nonhunting areas, and botanical gardens and arboretums.
15. Hares (2009).
16. Forest definition: Forests were defined as lands including mountains, rivulets, marshes, swamps, canals, waterways, lagoons, islands, and seashores. 10 million people: ICEM (2003). Slash and burn: Unlike shift-cultivation, slash-and-burn refers to permanent conversion of tropical forest to agriculture, without an extended fallow period. Hence, its associated environmental problems tend to be more severe; Ongprasert (2011).
17. Fujita (2003).

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18. Irrigation: If farmers register as growers of crops that receive support from government (i.e., economic crops), they would be entitled to compensation if their crops were destroyed by drought or flood. Given no irrigation, smallholders face a severe risk of drought. Debt cycle: Teerasuwannajak and Pongkijvorasin (2015).
19. Maize promotion: NEDB (1967). Crop intensification: NESDB (1977). Reserve size: 40% was believed to be the lowest level at which ecosystem balance can be preserved. Resident permits: Hares (2009).
20. Target: NESDB (1982, p. 14). Budget: NESDB (1982, p. 101).
21. Initial target: NESDB (1987), the division was specified in the first National Forest Policy (1985). Reversal: NESDB (1992).
22. Class I refers to top-grade watersheds at high elevation on the upper part of mountains with steep slopes, valleys, and cliffs. Any land-use alteration could easily cause severe environmental damage to these areas. See Forestry in Thailand, http://forprod.forest.go.th/forprod/ebook. 33.6% coverage: The reader may note that there was an apparent increase in forestation with official figures showing coverage at 25% in 1985 but 33.6% in 2011. The continuous decline in national forest area can be divided into 2 phases: from 1973-1998 and from 2000 to 2016. The sudden jump in 2000 was a result of better data due to a change in scale used in analysis of satellite images. Before 2000, forest area data was drawn from satellite image maps with scale of 1:250,000 scale, while the data after 2000 was based on maps with a scale of 1:50,000.
23. Expansion: NESDB (2007). Encroachment strategies: These included the involvement of LAOs in NRE management and amendment of laws to support coordination among conservation stakeholders at local levels.
24. Parliament (2020).
25. MOAC annual report from OAE (2020); DOAE (2020); DNP (2020); RFD (2020b); SOC (2020).
26. Budget allocation to HDRI: OAE (2020).
27. Forest-related acts: Rights and Resources Initiative (2020). Effects on communities: Kurashima and Jamroenprucksa (2005).
28. Relocation: Virapongse (2017). Zoning: C-zone land is comprised of Class I watershed-related protected areas. The E-zone designated poor-condition forests for commercial plantations, and reserved areas for landless farmers or community forestry. The A-zone is suitable for agriculture and for allocation to landless farmers by the ALRO.
29. Cabinet Resolution of June 1998: SOC (1998), the resolution allowed those who lived on forest land before it was designated as reserved/conserved forest to continue inhabiting the land. For newcomers who occupied the land after the issuance of the resolution, they would be prosecuted/ arrested. For those who occupied the land after the land was designated conserved/reserved forest but before the issuance of the resolution, they were to be relocated, but if relocation was not possible, were allowed to live on that land but prohibited from further encroachment. NCPO orders: Secretariat of the House of Representatives (2020), the NCPO issued number of orders aiming to cease deforestation and forest encroachment through measures such as reclaiming illegally used forest land and re-establishing healthy forest (NCPO Order No. 64/2557 & NCPO Order 66/2557). NCPO Order No. 66/2014 indicated that the primary targets of NCPO order 64/2557 would be the capitalists or large-scale encroachers, while impoverished people, landless people and people who dwelled in the forest area before the area was declared to be forest reserve area, must not be affected by the Order.
30. NESDB (2017).

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