

## Article

# Credibility and the Social Function of Property: A Saga of Mega-Dams, Eviction, and Privatization, as Told by Displaced Communities in Malaysia

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**Abstract:** Globally, the forced displacement of socially vulnerable communities causes significant contestation, irrespective of whether that occurs for mega-projects or smaller infrastructural, agricultural, urban renewal, or property developments. Despite multilateral guidelines for “socially inclusive” development, it is difficult to avoid the marginalization of evicted, local communities. Grounded on the credibility thesis, this article provides a new, theoretical basis for understanding the “social function of property” and how this may be used as a criterion to assess whether development-induced and resettlement projects should be given the go-ahead. Methodologically, this article employs the FAT (Formal, Actual, and Targeted) Institutional Framework to unpack the social function of property. To this end, it analyzes the acquisition and privatization of the common property of Indigenous Peoples to construct the Malaysian Bakun Hydroelectric Project, purportedly Asia’s second-largest dam. The FAT analysis ascertains the following three conditions on which basis projects should be halted: (1) the property of the evicted communities fulfills a critical role in providing social welfare; (2) the said function is disregarded by the expropriating agency; (3) the power divides between the expropriator and expropriated prevent meaningful participation by the latter. This study demonstrates that the social function of property can be effectively measured and validates the FAT Framework as a viable tool to analyze development-induced projects (and policies), with particular reference to expropriation, privatization, and formalization.

**Keywords:** credibility thesis; FAT framework; development-induced displacement and resettlement; customary rights; social security and land grabbing; Indigenous Peoples; shifting cultivation



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## 1. Introduction

Land policy has, for long, been vexed by a critical question: what property rights can rally credibility, i.e., garner social support amongst the users of a resource? This question is of importance when considering the impact of policies on socially disadvantaged communities, even more so with regard to expropriation, displacement, and resettlement. Against this backdrop, a rising stream of studies has been focusing on the *function* of property rights in analyzing land policies [1–6], rather than on their *form* (be it formal, private, or secure).

Previous research has, for long, focused on the form in which policies deliver new institutions, positing that certain preferred institutions—notably, formal, private, and secure property rights—may enhance performance, as expressed in higher prices, more investments, or better planning. Formal, private, and secure property rights are, respectively, defined as incorporated in law or other official rules; individualized and excludable rights; and long term and free from external intervention.

For instance, as one study claims, “There is a growing body of evidence which reveals how the *formalisation* of property rights [Form] (. . .) can raise the level of *investment* [Performance]” [7], p. 7. Another study claims that “*Private ownership* [Form] results in *sustained-yield* use and *preservation* [Performance]” [8], p. 8 (emphases added). In contrast, the “Form–Performance” assumption is not corroborated by empirical studies or is inconclusive at best (cf. reviews by [9–12]).

Due to the discrepancy between theoretical assumption and empirical reality, for long, scholars have argued that the research on property rights needs to recalibrate analyses in which we “merely describe the characteristics or attributes” of institutions (i.e., form variables) towards research that examines the “performance or quality measures” (i.e., function variables) [13–15]. Against this backdrop, a theorem was proposed, known as the “credibility thesis” [16], postulating that:

“[W]hat ultimately determines the performance of institutions is not their form in terms of formality, privatization, or security, but their spatially and temporally defined function. In different wording, institutional function presides over form; the former can be expressed by its credibility, that is, the perceived social support at a given time and space”. [16]

Put differently, by refocusing away from the form of institutions, the credibility thesis seeks to uncover the functions (or meanings) that socio-economic actors accord to property rights, and how these perform in real times and real spaces as a vital explanans for policies’ effect on communities and resource users. Thus, when the function that a policy endeavors to establish lacks credibility, i.e., is insufficiently aligned with the *endogenously* [17] evolved institutional function on the ground, there is an elevated risk for social conflict, cleavage, and marginalization.

Since its mooted, the credibility thesis has been validated with regard to land, settlements, and natural resources, including, but not limited to, formalization, titling, privatization, conservation, displacement, and resettlement [18–25]. The theory has also sought to measure institutional function, both in a *qualitative* as well as in a *quantitative* sense. To achieve that, various analytical tools have been developed and field-tested, such as the Conflict Analysis Model (CAM) [26,27]; the Credibility Scales and Intervention (CSI) Checklist [22,28,29]; and the Formal, Actual, and Targeted (FAT) Institutional Framework (hereafter: FAT framework) [10,18,30]. Moreover, studies have also employed existing techniques, including Agent-Based Modeling [31], (endogenous) transaction cost analysis, [22] and qualitative socio-anthropological methods, such as ethnographies, multi-dimensional scaling, and pile-sorting [32].

This study aims to make a dual contribution to the study of land, and by extension, settlements and natural resources. First, it aims to provide a stronger theoretical basis for the concept of the “social function of property” as expounded over a century ago by the French jurist Duguit [33]. As a concept, the social function of property has critical explanatory power; simultaneously, it is unclear what precisely a “social function” denotes and how it comes about. Precisely at this point, the credibility thesis could have added value, as it has extensively theorized on the *function* of property rights, how it emerges, evolves, and is maintained or endangered. In this context, there is obvious synergy between Duguit’s notion and the credibility thesis.

Second, this study will also demonstrate how the social function of property can be established, validated, and measured, the endeavor of which can be achieved through qualitative as well as quantitative methods. Through the associated methodologies of the credibility thesis, it is within our reach to measure social support and functionality. Thus, we can identify the parameters that cause property to assume a social function (e.g., as a buffer against external shocks or to provide access to non-state utilities) instead of other functions, such as for economic transfer or political clout. To achieve this second objective, this research will apply the FAT framework to a case-study on the land acquisition and resettlement for the Malaysian Bakun Hydroelectric Project (or Bakun Dam), purportedly, Asia’s largest dam outside of China.

As this article will demonstrate, this mega-project involved the involuntary displacement of the Orang Ulu, an Indigenous People whose livelihood depends on communal hunting, gathering, and fishing, managed under customary law. To make way for the dam and reservoir, the Orang Ulu were relocated to a resettlement area governed under a *private* property regime, which undermined the customary role of village elders in the governance of common lands. The study is based on fieldwork conducted in 15 “long-houses,” sizeable communal dwellings built on stilts that can house up to 100 families. The fieldwork relied on qualitative and quantitative methods, particularly, participant observation, semi-structured interviews ( $n = 21$ ), and a survey ( $n = 220$ ), coupled with textual analysis of primary Malaysian documents hitherto unavailable in English, such as government notices, state regulations, reports by non-governmental organizations (NGOs), and court cases.

Apart from the Introduction and Conclusion, this article is divided into five sections. Section 1 reviews the theory on the credibility thesis and presents the analytical framework. Section 2 discusses the role of dams in Malaysia’s modernization efforts, an overview of historical and contemporary land rights of the Orang Ulu, and the impact of dams on these rights. Section 3 presents the research design in terms of methods, data, and the case-study (with facts, figures, and a description of the expropriation). Section 4 presents the findings structured around the Formal, Actual, and Targeted Framework, as applied to two timepoints ( $t_1$  and  $t_2$ : before and after resettlement). Section 5—the Discussion—reviews the study’s ramifications in terms of the conditions on which basis projects should be halted.

## 2. Theoretical Review

### 2.1. The Credibility Thesis and the Function of Institutions

An important debate in the study of land, settlements, and natural resources is that of the function of institutions. The debate emerged in response to the scholarly focus on the form of institutions (private, formal, and secure) as a determinant of performance. In this view, informal and common property inhibit efficient resource use, and for this reason, formal and private rights are advocated as a means to uplift the victimized, poor, and socially weak (A detailed discussion of this debate is included in [16]). Note that in this debate inhibiting efficient resource use is stringently conceptualized as inefficiency in terms of economic inefficiency of using the resources). Contrarily, a growing group of scholars emphasize that land may often fulfill a social instead of an economic function, particularly in terms of the provision of (non-state) welfare and security [29,34,35]. In this context, Davy and Pellissery [36], p. S68 note that “Informal dwellers are not merely victims, however; they also produce non-state welfare through economic and social practices on the margins.” Or, as Zhang [35], p. 881 aptly observed:

“[I]nformality is an alternative form of welfare provision (. . .), various studies demonstrate that the informal sector provides redistributive goods to the socially disadvantaged, with minimal public- or private-sector expenditure, so that the informal practices have been tolerated by the state.”

This stream of research has an evident synergy with the seminal writings of Duguit [33], who in opposition to the notion of property as an economic asset, proposed over 100 years ago, the “social function of property”. The idea that land can play a social function, more particularly, in the buffering of exogenous shocks and risks (e.g., economic crises, armed conflict, and natural disasters), has been consistently studied over the decades [37–40] and has recently centered around the “credibility thesis” [16,17].

The credibility thesis takes the research on the social function of property a step further by positing that institutional performance is determined by institutional function rather than form. In effect, in understanding why a given property right fails or succeeds, the primary question is not whether it is formal or informal, public or private, secure or insecure, but what function (or role) that property right has been accorded by socio-economic actors. In this context, credibility is defined as “the aggregate perception of

endogenously shaped institutions as a common arrangement” [16], p. 88. Thus, credibility is not about the individual acceptance of a rule but relates to the *aggregate* perceptions of institutions as something *common*. It is also not about exogenously imposed rules, but about arrangements that have *endogenously* emerged from the multitudinous interactions between stakeholders. For instance, if an individual believes that others will behave in a certain way and have no incentive to deviate from the rules by which they are governed, these rules (institution) will be perceived as credible. It is thus not whether an individual actor—be it a farmer, entrepreneur, or state official—personally accepts certain rules, but whether an actor expects that other actors will abide by them. Consequently, credibility is not about changing rules but about shifts in expectations, while institutions are only credible to the extent that actors expect others to act accordingly.

The credibility thesis bears a triple ramification for our understanding of property rights:

1. **Disequilibrium:** It draws attention to *incessant* change, as inherent to function, in lieu of equilibrium, consensus, or cohesion. Ergo, it zooms in on how institutions are propelled by socio-economic actors’ perennial interactions, bargaining, and conflict [41,42]. As the Nobel Prize in Economics laureate, Myrdal, once famously wrote [43], p. 12, “there is no such a tendency towards automatic self-stabilisation in the social system”, instead it “is constantly on the move away from such a situation”.
2. **Ontology:** The credibility thesis underscores institutions as they *are* and the need to understand them in terms of what they do and signify, rather than a priori labeling institutions as “inefficient”, “persistent”, or “stagnant” when they do not satisfy the expectations of what one believes institutions should be. Policy and planning’s oft-committed mistake is considering what institutions should be (i.e., formal, private, or secure) and intervening accordingly, without having contemplated or ascertained *what* they are and *why* the institutions are what they are.
3. **Time–space specificity:** The credibility thesis’ inquiry into function probes into the unicity of time and space, as the endogenous ascendance, paradoxical “persistence”, and eventual demise of institutions’ function is not bound by a teleological endgame or universal convergence but is fundamentally shaped by context. Differently worded, the use and disuse of the function of institutions is the outcome of adaptation to a spatiotemporally dependent context and, as such, determines institutional function’s emergence, survival, or extinction.

A major objective of the research agenda around credibility seeks to determine *how* and *when* land assumes a social rather than an economic function. In this context, three preconditions have been identified [16], pp. 207–211; ref. [30], which, if present, should lead to caution when contemplating interventions in the form of property rights (such as through formalization and privatization):

1. The existing function of property is essential for upholding local livelihood, i.e., prior to expropriation, the community’s sole or main source of security is derived from the land;
2. The expropriating agency does not acknowledge this social welfare function of property, i.e., when the land is lost, insufficient or no social security is available;
3. The power divides between the expropriating agency and the expropriated community prevent meaningful participation by the latter.

To date, the credibility thesis has been tested in different geographical contexts in the Global South and the Global North, as well as for different assets and property institutions, ranging from land registries, lease systems, condominiums, natural resources, affordable housing, informal settlements, and mining [1,9,20,32,34,35,44,45].

A vital aspect of the study on credibility concerns the methodological dimension, i.e., the way the data are collected and analyzed, regardless of whether these are collected qualitatively or quantitatively. As it stands, several methodological strands have emerged:

- Studies that examine conflict as a proxy for assessing credibility by means of the Conflict Analysis Model or CAM [22,26,27];

- Research that uses the Credibility Scales and Intervention Checklist (CSI Checklist) to predict or assess the success of policy options ranging from interventionist (ordaining/prohibiting) to non-interventionist (condoning, co-opting, or facilitating) [22,28,29];
- Studies employing Agent-based Modeling, hypothesizing “dynamic disequilibrium” [46] as a proxy for credibility, i.e., a state in which institutions feature incremental, infinitesimally small changes (high credibility) in alternation with sudden shocks (low credibility) [31];
- Research based on using Institutional Archeology to minutely analyze the contexts, scales, and loci of property rights, while accounting for contextuality, to understand the functioning of property rights [9,44,45,47];
- Studies that examine socio-economic actors’ perceptual divergences as an explanatory variable through the Formal, Actual, and Targeted Institutional Framework or FAT Framework [10,18,30]. Differently worded, socio-economic actors’ differences in perceptions may serve as an effective indicator of the functionality or dysfunctionality of an institution.

Here, we will focus on the last strand of research.

### 2.2. Importance of the Formal, Actual, and Targeted

Zooming in on socio-economic actors’ perceptions of property rights is an established way of assessing performance. In this respect, Van Gelder [48], p. 2007 argued that a “tripartite view” of institutions is helpful. In effect, we need to distinguish between the official, existent, and intended dimensions of institutions. Against this backdrop, the Formal, Actual, and Targeted (FAT) Institutional Framework or FAT Framework was developed based on the axiom that the divergence between what institutions are *formally* declared to achieve (the Formal), what they *actually* achieve (the Actual), and what socio-economic actors’ *targets* they should achieve (the Targeted) is a measure of credibility. Differently worded, the greater the divergence between the perceptions of what states profess their institutions do, what they do in actuality, and what the actors believe they ought to do, the lower the institutional credibility, and vice versa. After its initial development [16], the FAT Framework has been widely applied, field-tested, and refined [10,18,22,29,30,34,49,50]. Based on these studies, perceptual divergences were found to be a reliable proxy for the assessment of policy credibility and to determine the likelihood of difficulties in policy implementation [49], p. 6.

### 2.3. Applying the FAT Framework to Mega-Projects

Mega-projects, not in the least, the building of dams, are a major cause of contention around the world due to the evictions of local communities and resource users [51,52]. Concern over the social marginalization induced by mega-projects has spurred the furthering of protocols and guidelines to ensure “pro-poor” and “socially inclusive” development [53–57]. It is attempted to manage the adverse impacts of such projects, assuming that “displacement is a predictable, intentional, scheduled and largely regulated event” [58], p. 1228. However, research has ascertained that many such protocols, in fact, justify projects that should never have received a go-ahead in the first place [59–61].

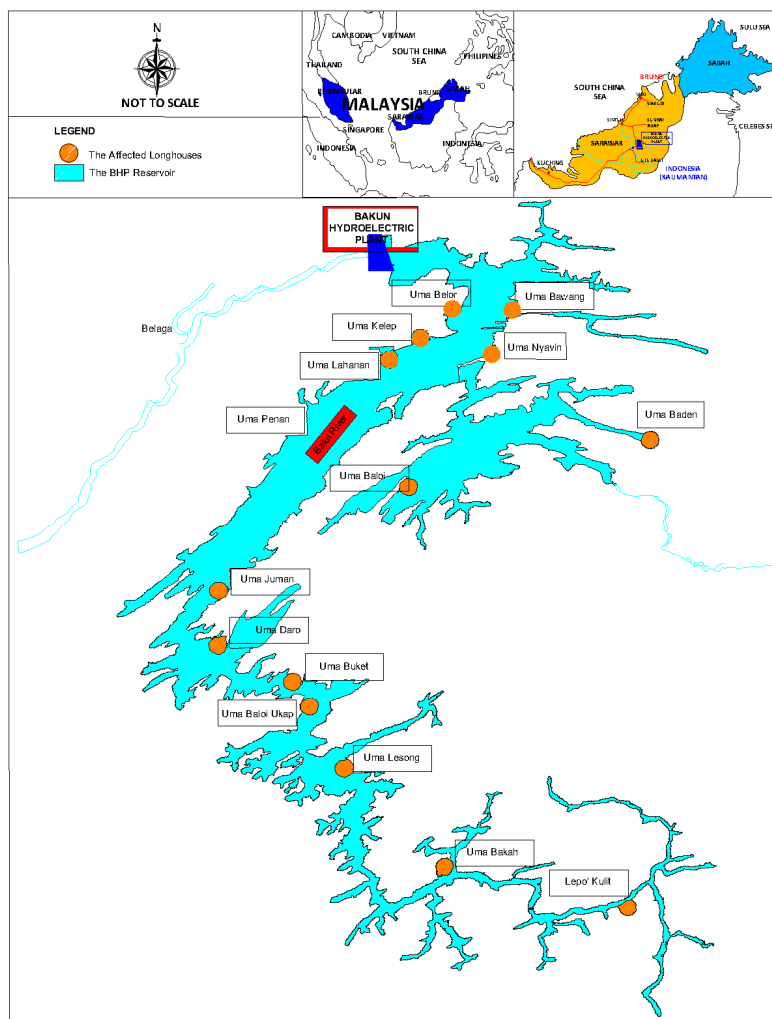
At this point, the FAT Framework could be useful, as it directs the scholarly gaze towards a new, holistic criterion: the social function of property. Theoretically founded on the credibility thesis, the FAT Framework is meant as an analytical, hermeneutic, and spatiotemporally sensitive tool, rather than a formal list of indicators that can identify the function of institutions (regardless of whether these are economic, political, environmental, or social functions). Before moving on to explain the application of the framework, we will first provide some basic information about our case-study.

### 3. Materials and Methods

#### 3.1. Disregarding the Function of Property

One of the critical issues around the Bakun Dam Project is that it disregarded the social function of the property of the Indigenous Orang Ulu, which was in place prior to resettlement. The Orang Ulu, meaning the “people of the interior”, constitute less than six percent of the total population of Sarawak State [62]. They are a socio-economically marginalized ethnic group that comprises 27 Indigenous sub-groups. The Kapit Division (comparable to a Province) where the Bakun Dam is located was one of the main areas where the Orang Ulu resided (The other divisions are Bintulu, Miri and Limbang [63], p. 303).

Before the construction of the Bakun Dam, there were 15 Orang Ulu longhouses, known as *Rumah Panjang*, located along the Balui River in the Belaga District (Figure 1). The people housed by these large communities amounted to 9428 [6]. The Orang Ulu were displaced and resettled to a newly developed area, termed the Resettlement Schemes of Sungai Asap (hereafter: RSSA), 30 km away from the Bakun Dam. The RSSA measures around 7400 hectares (Table 1) (The resettlement scheme is surrounded by 11 existing Orang Ulu longhouse communities [64], pp. 2–3, i.e., Long Banan, Long Nayan, Long Semutut, Long Koyan, Long Bala, Long Sibau, Long Apak, Long Urun, Long Tengah, Long Ketuet and Long Pera).



**Figure 1.** Longhouse communities of Orang Ulu affected by the Bakun Dam. Source: Illustrated by authors. Note light blue.

**Table 1.** Facts and Figures of RSSA.

Item	Basic Data
Location	Belaga District, Sungai Asap Sub-District
Area of RSSA	7400 hectares
Relocated population	approx. 10,000 persons, mostly Orang Ulu
Year of relocation	1999
Existing settlements at RSSA	11 (all Indigenous)
Distance to original settlement	30 km
Original land	17.7 acres/family (average)
Land compensation	3 acres/family
Land title	Private title (lease of 99 years)
Housing compensation	One unit against payment of RM 52,000
Financial compensation	For lost assets other than land/housing
Land use prior to displacement	Shifting cultivation, hunting/gathering, and traditional fishing
Land use after displacement	Small-scale cash cropping for oil palm, pepper, tobacco, and rubber

Source: Illustrated by authors based on refs. [62,64]; Oral communication, Assistance District Officer, Sub-district Office, Sungai Asap, RSSA, 250912.

Prior to displacement, the Orang Ulu engaged in subsistence hunting, gathering, fishing, and shifting cultivation (or swidden agriculture) under a common property regime. Yet, after resettlement, their land use was forcefully changed to commercialized, private property. This shift in land use hides a profound change in the original function of property along two dimensions (Section 4.1.3: The Targeted).

First, customary land use of the Orang Ulu is mobile in time and space, which serves to maximize resource use while preventing its degradation under a given population density. This is not only the case for the hunting and gathering but also for shifting cultivation, under which forest plots are used on a rotational basis over decades and, once cultivated, are left fallow again to allow for the natural regeneration of soil fertility. The system ensures the security of food supply and helps buffer exogenous risks [65].

Second, common village lands are redistributed by the Customary Council of Elders in response to demographic change. Concretely, if, in one family, workforce increases due to a newborn, whereas, in another family, it decreases due to death, illness, divorce, or marriage, the village elders mediate to have land reallocated from the latter to the former. This institutional arrangement ensures that each family has sufficient land to maintain its livelihood [66].

This dual mechanism—rotational land use and flexible tenure in response to demographic change—is essential under conditions of subsistence farming, hunting, gathering, and fishery as the Orang Ulu practiced. Differently put, when poor communities solely depend on the land (with no alternative employment in services or industry), these two mechanisms function as a means of *social welfare*. The logic behind such factually secure, yet allegedly “insecure” property rights is well documented for other land uses, e.g., pastoralism [32,37–39,67–69] and subsistence farming [37–39,70].

As the results section demonstrates, the communal, subsistence land use of the Orang Ulu was supplanted by privatized, commercialized agriculture that ran counter to the logic of the previous social function of property. While the Orang Ulu had originally been assured a total of 12 acres, they only received 3 acres per family (Table 1). Compare this to the average of 17.7 acres (!) that each Orang Ulu family held before resettlement (Appendix A; Table A1). Equally important to note, in a significant break with the custom of common property, each household received a *private* title to land. The plots were leased against a term of 99 years and were intended for commercial crop cultivation [71]. Authorities claimed that private, commercial agriculture would enable the Orang Ulu to become economically independent. In light of the small size and privatized farming at the RSSA, it now becomes clear why the Orang Ulu’s previously mobile and communal practice of shifting cultivation, hunting, and gathering had become impossible after resettlement (note:

fishery had also become unworkable, as there was no freshwater resource at the RSSA) (Section 4).

In another break with tradition, the communal longhouses were replaced by individual homes. Remarkably, the housing was not a replacement, as families were only entitled to it against a payment of RM 52,000, out of reach for most families with a monthly income below RM 700 (USD 224.31) (During the fieldwork, the currency exchange between Malaysian Ringgit to US Dollar was around RM 0.32 to 1 US Dollar. Note that this approach by Sarawak State also contradicts international guidelines set by institutions such as the World Commission on Dams [72], pp. 241–242 and the World Bank [54–57,73], which call for a full replacement for expropriated housing). Some financial compensation was given for lost assets other than land and housing (such as livestock or cash crops), yet the full payment would only be given after resettlement. Before continuing to the description of the fieldwork, we will provide some facts and figures about the Bakun Dam.

### 3.2. The Bakun Dam

The Bakun Hydroelectric Project (Figure 2) is situated in Sarawak State, the largest state of the 13 states in the Malaysian federation. The state endeavors to aggressively develop dam construction and become a major powerhouse [74,75] (Please note that Malaysia is a federation of states, each of which with their own respective executive, legislative and judiciary organs). While the Malaysian federal government initially approved the construction of the dam in 1986, its operation was substantially delayed for a quarter of a century due to a mix of social contestation, mismanagement, and economic setbacks.



**Figure 2.** Aerial view of the Bakun Dam (a). View of Bakun Dam (b). Source [76].

The Bakun dam's basic features are sizeable, with a total capacity of 2400 megawatts, a water reservoir of 70,000 hectares, and a storage volume of 43.8 billion cubic meters (see Table 2). Upon its operation in 2011, its total costs had mushroomed to RM (Ringgit Malaysia) 7.3 billion (originally estimated at RM 2 billion; 1 RM  $\approx$  \$0.2 US). While the dam was foreseen to export up to 90 percent of generated electricity to peninsular Malaysia, Brunei, Indonesia, and the Philippines, this never materialized, creating problems of over-capacity [77,78] (This was due to political problems and the stalling of an associated project to transport the electricity).

Today, the federal government of Malaysia owns and operates the Bakun Dam through Sarawak Hidro Berhad, a wholly government-owned corporate entity of the Ministry of Finance. Yet, to get to this point, the project passed through numerous setbacks. Initial surveys on the feasibility of the dam had started in the early 1960s, which eventually led to its approval in 1986. Due to changed economic conditions, it was shelved in 1990 to be revived three years later. The Bakun Dam was implemented under the Malaysian privatization program, through build–operate–transfer and build–operate contracts. It was



adopted as a pet project by Mahathir Mohamad, the country's former prime minister, from 1981 to 2003 and from 2018 to 2020.

**Table 2.** Facts and figures of Bakun Dam.

Item	Basic Info
Location	District of Belaga, Kapit Division, Sarawak State
Impounded rivers	Batang Rajang and tributaries
Height and length	205 m × 750 m
Installed capacity	2400 megawatts
Reservoir area and volume	70,000 hectares; 43.8 billion m <sup>3</sup>
Year of approval	1986
Date Environmental Impact Assessment (EIA) submission	8 September 1994
Commencement construction	30 September 1994
Date EIA approved	27 March 1995
Delays	1st time halted and revived (1990/1993); 2nd time (1997/2000)
Year of operation	2011
Operating entity	Sarawak Hidro Berhad (wholly owned by Ministry of Finance)
Costs	Budgeted RM 2 billion (USD 0.64 billion) Final total RM 7.3. billion (USD 2.33 billion)

Source: Drawn by authors.

The project's construction was initially awarded to the conglomerate Ekran in 1994, allegedly due to its expertise in dam construction, even though its actual business was in real estate and forestry. In this context, many have pointed to rent-seeking, and not in the least, the personal links between Mahathir and Ekran's owner, Ting Pek King, a timber magnate and developer hailing from Sarawak [79–82]. Due to the significant capital outlay required, the government decided the project should be funded through a joint-venture, using equity capital and loans, most of which were from local sources [83].

Due to the 1997 Asian Crisis, the federal government deferred the project, which coincided with a conflict between Ekran and its engineering consultant, the Swedish-Swish multinational ABB. In result, Ekran withdrew from the project that same year. In 2000, the Bakun Dam was revived again, this time, through a wholly government-owned company, Sarawak Hidro. The construction of the dam was granted to a new consortium, known as the Malaysia–China Hydro Joint Venture. This entity is led by Sime Engineering Berhad, in itself a subsidiary of the state-controlled Malaysian Sime Darby (which owns 70 percent of shares) and Sinohydro, a state-owned company of China (which holds the remaining 30 percent) (Other members of the Malaysia–China Hydro Joint Venture included WCT Berhad, MTD Capital, Ahmad Zaki Resources, Syarikat Ismail and Edward & Sons [84]). The Bakun project thus became the first dam in Sarawak with involvement from China (in fact, predating the Belt and Road Initiative), and was later followed by the Murum and Baleh dams (the latter of which is under construction, with commissioning scheduled by 2026).

The Bakun Dam has caused a profound environmental impact. Over 700 square kilometers of virgin tropical rainforest had to be cleared, leading to the loss of rare animal and plant species [82,85–87]. The socio-economic impact was equally disruptive, with the eviction and forced displacement of an estimated 10,000 persons, most of which were Indigenous Orang Ulu [72,88–91]. In line with federal law, an Environmental Impact Assessment (or EIA) was carried out. The EIA, however, was surrounded by controversy and proved a symbolic exercise, rushed to completion [92–94], and notably, was approved *after* construction on the dam had already commenced (see Table 1) (Other studies have zoomed in on the Bakun's energy supply [78,95,96] and compensation [97]).

### 3.3. The Fieldwork

The fieldwork was carried out at the RSSA, the newly constructed settlement where to the Orang Ulu had been relocated. An exploratory study was conducted, consisting of 21 semi-structured interviews. It included villagers, local leaders of the Orang Ulu at different administrative levels (village, sub-district, district, and division/state), and other stakeholders, notably, federal and state officials and representatives of NGOs and the Bakun's operating corporation, Sarawak Hidro Berhad. The full fieldwork involved a pilot survey of fifteen households, followed by a survey among 220 respondents from 15 "longhouses", large communal dwellings built on stilts and holding up to 100 families in separate living quarters (We used multi-stage cluster sampling [98,99] to achieve a higher degree of representativeness, while theoretical saturation [100,101] was employed to assess the sample size, up to the point where additional data yielded no new insights into the research questions. The exploratory and full-scale fieldwork periods extended from spring 2011 until the fall of 2012). Surveys were conducted without assistance from students, interpreters, or otherwise. A household-to-household approach was used, while group meetings or group discussions were avoided to avoid response bias. Apart from open-ended and single-answer questions, respondents were asked to rate statements (based upon the semi-structured interviews) using a five-point Likert scale.

The total population in the resettlement area was 11,616 (accounting for 2219 households) [102]. Of the total sample, 74.5 percent of the respondents were working as farmers, 8.2 percent as forest loggers, 5.5 percent as transport workers, 4.1 percent as professional and clerical workers, while 7.7 stated other employment. In terms of monthly income, 44.1 percent earned less than RM 450 while 25.5 percent earned between RM 451 and RM 700. Those earning between RM 700 and RM 1000 accounted for 18.6 percent, with the remainder earning more than RM 1000.

As previously stated, we used the FAT Framework to structure the research. Different from existing policy protocols, the framework does not consist of a stringent, formal set of indicators but is a tool that assists the researcher through a spatiotemporally sensitive process of hermeneutical data interpretation:

- The tool is temporally sensitive, as it can be applied at different timepoints—before, during, and after an institutional intervention. The operationalization of such a temporal analysis is represented as  $(t_1, t_2, t_3, \dots, t_n)$  with a FAT analysis occurring at each timepoint (See, for instance, the following analytical depictions Figure 7 in [10], Figure 4 in [18], and Figure 6 in [30]). Here, the analysis was conducted at two timepoints: prior to resettlement at  $t_1$ , and after resettlement at  $t_2$ .
- The tool is spatially sensitive, as it can be adapted for the analysis of different geographies and issues regardless of whether these pertain to nature reserve management in China [18] or urban commons in Greece [10]. As stated, we employed the tool to analyze a mega-dam project, its expropriation, and its resettlement process.
- Lastly, the FAT Framework is hermeneutical in that it does not uncover institutional function as an a priori truth. In contrast, it is a phenomenological interpretation, which can be achieved after institutions have been unpacked in their multi-layered dimensions. As Kiser and Ostrom [103], p. 179 stated, institutions "exist in a language shared by some community of individuals rather than as the physical parts of some external environment". Thus, it is the "language" that the FAT Framework is after, not the "physical parts".

Keeping in mind that the FAT Framework seeks to analyze the Formal (what property rights should one *formally* enjoy?), the Actual (what property rights are *actually* enjoyed?), and the Targeted (what property rights does one *target*?), the research process is depicted in Figure 3. In the following section, we will follow the three dimensions of the FAT Framework while applying it at two timepoints.

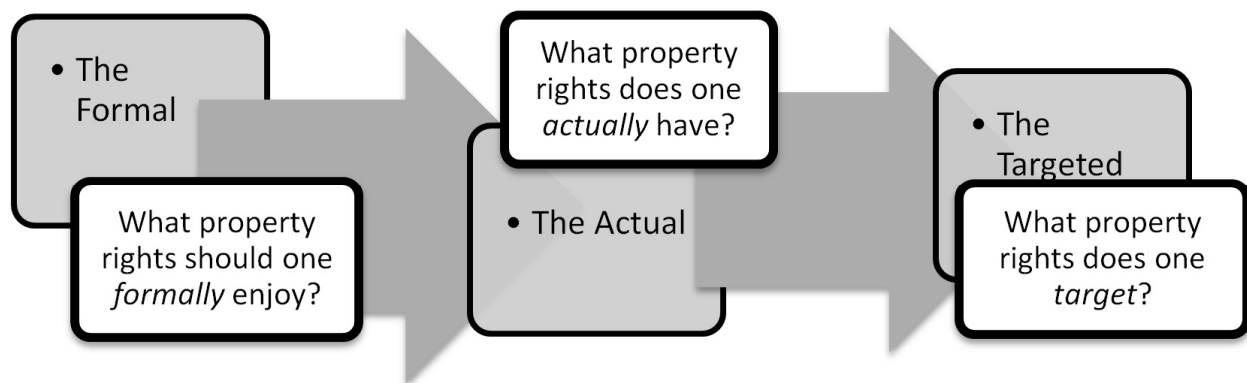


Figure 3. FAT Framework. Source [16].

## 4. The Results

### 4.1. $t_1$ : Before Resettlement

#### 4.1.1. The Formal

To better understand the formal property rights arrangement for the Indigenous Orang Ulu, we need to delve into its historical background. Prior to colonial rule, land, forest, and other natural resources used by Sarawak's Indigenous communities were governed under customary law [104–106]. Starting with the regime (1841–1868) of Sir James Brooke, a British adventurer and the first white Rajah of Sarawak, this was about to change. After the establishment of the British colonial administration over Peninsular Malaysia (Malaya), the South Australian Torrens Titling System was introduced, which led to the nationalization of Indigenous lands in Sarawak.

While the Orang Ulu were given the freedom to roam about and harvest the fruits of the jungle, based on “native title” [103,107], some of these lands were declared nature reserves and “off-limits” for Indigenous Peoples. The British deemed native land unproductive and believed that Indigenous practices, particularly shifting cultivation, would hamper economic progress. In this context, the colonial state limited the exercise of native title by freezing its extension and interpreting it as a weakly secured, communal right over state land [87]. Native title is thus, in a way, distantly comparable to what in common law is referred to as leasehold, whereby a land user obtains a temporary right from the state or Crown. However, native title is considerably more encumbered through limitations on transfer, sale, and inheritance.

Custom is—at least, according to law—recognized in Malaysia. According to the Malaysian Federal Constitution (Article 160), “custom and usage have the force of law” [108]. The recognition of custom over land in particular is reinforced through the 1965 National Land Code (Section 4.1), which states that “if there's a conflict between the National Land Code and any customary legislation, the customary provision prevails” [109], p. 3. According to the Human Rights Commission of Malaysia [106], the recognition of customary rights in Sarawak can be traced to the 1958 Sarawak Land Code (Section 2), which defines native customary land as follows:

“Land in which native customary rights, whether communal or otherwise, has lawfully been created prior to the 1st day of January 1958 and still subsist as such.”

In effect, according to this code, Indigenous Peoples must demonstrate lawful activities carried out before 1958 if land is to be recognized as native customary land (These activities have been defined in the same law (Section 5.2): (1) The felling of virgin jungle and the occupation of the land that is thereby cleared; (2) The planting of land with fruit trees; (3) The occupation or cultivation of land; (4) The use of land for burial grounds or shrines; (5) The use of land of any class for rights of way; (6) By any other lawful method (deleted via legal revision)).

Thus, with the state as the ultimate owner or landlord, the Orang Ulu may in principle use lands communally, under the condition that these are recognized as native customary

land. Members of the community, in turn, acquire rights to individually use the land and its resources by being the first cultivator of the virgin jungle or by seeking permission from the village headman, the *Tuai Rumah*, and the community elders [107,110]. Under native customary land, common property rights are inherited and retained by the community and passed down to future generations. This includes the right to cultivate cleared farming land and other rights given to those who have first reclaimed land; he/she/they may pass down this land to heirs.

#### 4.1.2. The Actual

In contrast to the description of the Formal above, the statutory recognition of Indigenous rights comes with caveats. For one, the stipulations described above are only applicable in the interior areas, and only if a permit has been acquired under Section 10 of the Sarawak Land Code from the Sarawak Land and District Office [111].

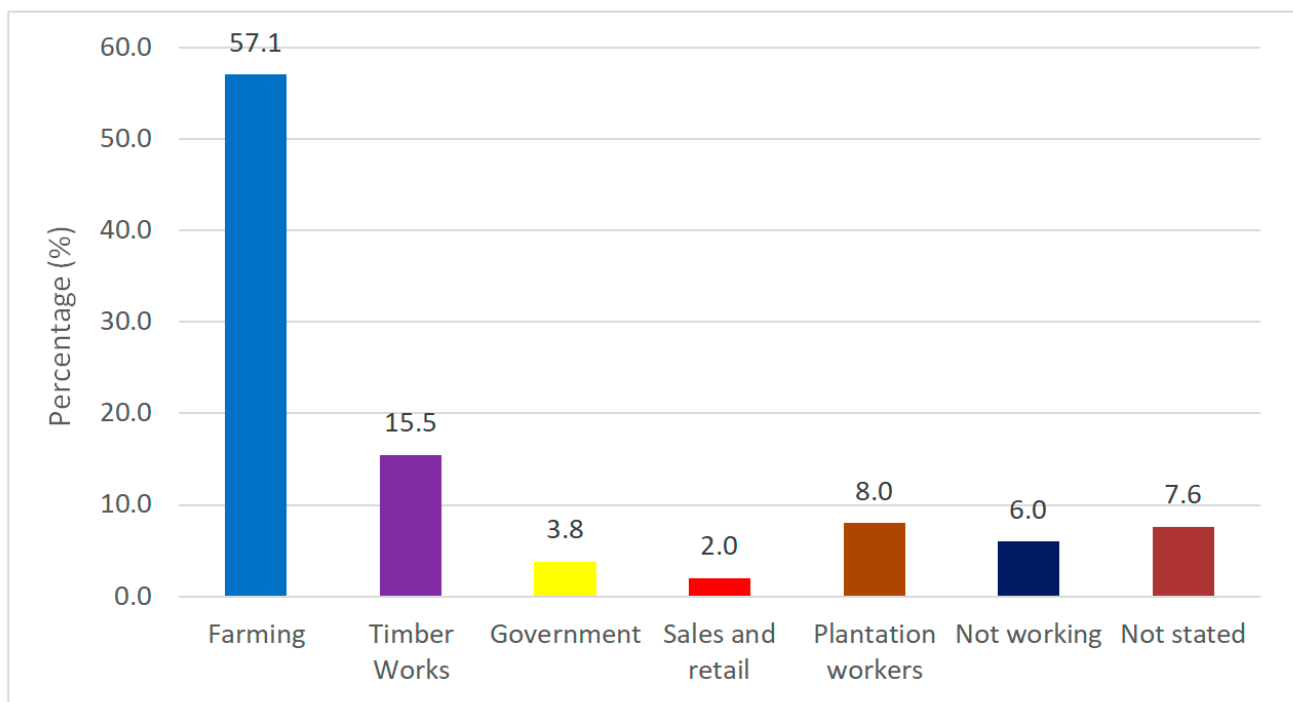
Second, as the name suggests, “native title” or native customary land is a separate category of land that has been encumbered with legal limitations on the rights to transfer, lease, or sell outside the non-Indigenous community. These restrictions have been made based on the entitlements of native title: only Indigenous people accorded with Indigenous status by the community are eligible. The use of land under native title also cannot be transferred to other uses; for example, it cannot change from agricultural use to industrial use. The reason for this is to protect the land from falling into the hands of non-Indigenous groups [112]. Since native title is a communal title, the land is, technically speaking, state-owned, unless surveyed and titled by the government. In light of these legal limitations, it should not come as a surprise that native title has a substantially lower economic value as compared to privately owned land [106].

Third, the state government is reluctant to recognize Indigenous lands and uses various legal means to achieve its aims. For instance, the amendment of the 1958 Land Code passed by the Sarawak State Assembly on 9 May 2000 nullified the original stipulation that activities of Indigenous Peoples through “any other lawful method” can qualify land as native customary land [111]. This amendment narrowed the legal basis on which native title can be applied for in two ways: (1) native title can only be recognized “prior to the 1st day of January 1958”, which implies that land claimed afterwards or that was not included in surveys before 1958, cannot entitle as native customary land; (2) native customary land should “still subsist as such” after the deadline. When considering that Indigenous Peoples employ shifting cultivation or swidden agriculture as a spatiotemporally mobile, agricultural system to optimize resource use while preventing it from being depleted, the paradoxical nature of this requirement becomes evident: under the 2000 Amended Sarawak Land Code, the Orang Ulu are effectively barred from leaving land fallow.

The legal conundrums described here extend to compensation [113] and are a major issue when it comes to the expropriation for mega-projects. The Bakun Dam is a point-in-case.

#### 4.1.3. The Targeted

The social function of property (here: the dependence on land as a means of social welfare) is evident. Prior to resettlement, the Orang Ulu were predominantly involved in subsistence farming through shifting cultivation, hunting, gathering, and fishing [62,114]. Figure 4 shows the employment situation of the Orang Ulu before resettlement; as much as 57.1 percent of the population was involved in small-scale farming. In addition, a total of 13.6 percent stated they were either ‘not working’ or had a ‘not stated’ occupation. The last percentage constituted of two Orang Ulu sub-groups, the Penan and Ukit, who led a nomadic life and earned a living with no specific (salaried) job [64].



**Figure 4.** Percentage of population by employment at the RSSA in 1996. Source [64], pp. 3–12.

Traditionally, each Orang Ulu sub-group lives in its own common longhouse containing 10 to 15 *amin* or households. Statutory and customary leaderships co-exist at the local level. On the one hand, there is the official Village Development and Security Committee led by a chairman (without any requirement on ethnicity). The chairman is seconded by a deputy chairman and officials that oversee specialist tasks, such as for women affairs, youth, welfare, sport, and religion. On the other hand, there is the customary (*Adat*) organization overseen by the traditional headman or *Tuai Rumah*. The *Tuai Rumah* is the lowest ranked leader at the village level and reports to higher-level community leaders, such as the *Penghulu* (sub-district level), *Pemancar* (district), and *Temenggung* (division and state). Notably, all Indigenous leaders receive a monthly allowance from the government [61]. The customary organization under the *Tuai Rumah* and the formal organization of the Village Development and Security Committee complement each other in the administration at the grassroots level.

In terms of land governance, the traditional leaders of the Orang Ulu (i.e., the *Tuai Rumah*, *Penghulu*, *Pemancar*, and *Temunggung*) and the village elders are entrusted with the power to manage the native customary lands. Their tasks include the monitoring and enforcement of rules on the use, control, and transfer of land rights within the community. Moreover, they have the power to allocate land to the community members and settle land disputes, such as boundary conflicts. If disputes cannot be solved within the community, they can be filed to a native court that is independent and separated from the civil courts and operates from the village level up to the district level.

The land rights of the Orang Ulu are distinguished into three types (This counts for all indigenous peoples in Malaysia, including for the Orang Ulu):

1. *Pemakai Menoa* or communal lands, also known as territorial domain, refer to the lands of the longhouse community, which are used for farming, fishing, hunting, and forest produce;
2. *Temuda* (termed *Talun* by the Orang Ulu) refers to the land used for shifting cultivation (through slash-and-burn or swidden agriculture), which was formerly cultivated but left fallow to regenerate into the forest;

3. *Pulau Galau* or virgin forest area (known as *Tuan Long* by the Orang Ulu) indicates an area within the *Pemakai Menoa* where the community can obtain food through fishing, hunting, or gathering.

The Orang Ulu were reluctant to give up their ancestral lands and, prior to the relocation, had requested in the RSSA:

- Longhouses without payment (as their original longhouses were self-built, see Table 2);
- Communal forest reserves (allowing for independent food gathering);
- Free utilities (as water was freely available from the river in the original settlements, while electricity was not provided).

In their view, these demands were but a limited compensation for having to leave their traditional homes, ancestral lands, and burial grounds. Remarkably, a proportion of the Orang Ulu refused relocation to the RSSA. Instead, they established a village of their own. This settlement, named Naha Jalei, is located on the borders of the artificial lake created by the Bakun Dam (Figure 5).



**Figure 5.** Naha Jalei Village established by Orang Ulu refusing to relocate (**left**)—Villagers from Naha Jalei returning from hunting (**right**). Source: Photos by Nor-Hisham.

#### 4.2. *t*<sub>2</sub>: After Resettlement

##### 4.2.1. The Formal

To gauge the Formal *after* resettlement, we asked the Orang Ulu how they viewed the rights they should have according to law and the formal procedures for expropriation. To start with the former, the resettled Orang Ulu were dissatisfied with the annulment of the native title and its replacement by private title (based on temporary lease). Close to 90 percent found the invalidation of native title unacceptable, while a similar percentage disagreed that private title brought better benefits than native title (Table 3).

**Table 3.** Views on native title (in percentage; *n* = 220).

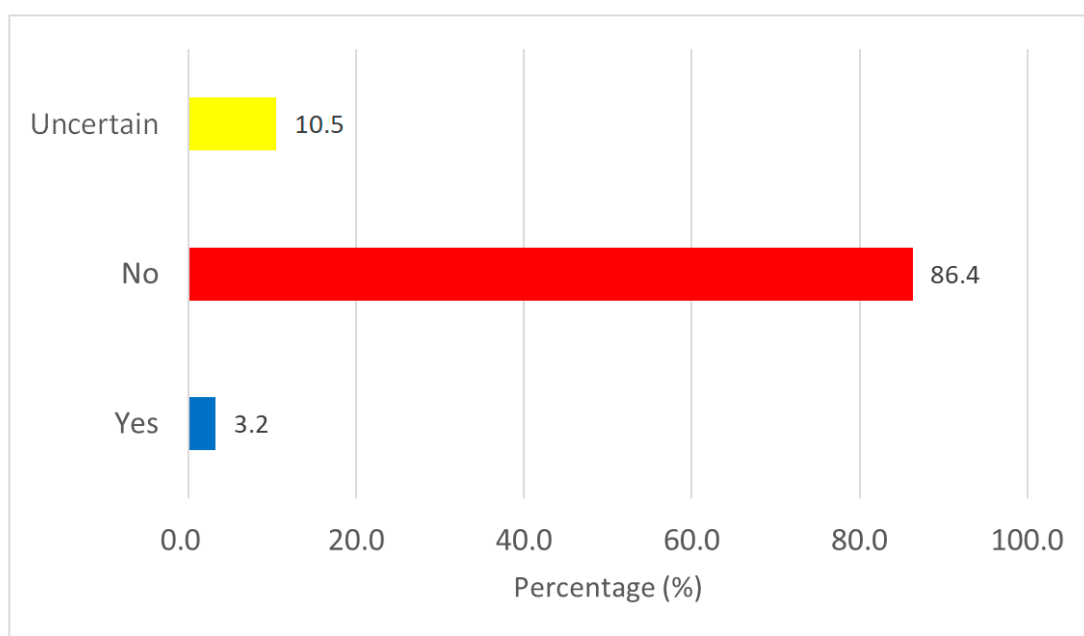
Question	Strongly Agree	Agree	Uncertain	Disagree	Strongly Disagree	Total
Was termination of native title acceptable for you?	1.4	0	10.9	23.2	64.5	100.0
Does private title provide better benefits than native title?	3.2	1.4	8.2	61.8	25.4	100.0
Is native title important for Indigenous peoples?	94.1	1.8	0	0.9	3.2	100.0
Is native title sufficiently protected by policies and laws?	5.5	3.6	5.9	77.7	7.3	100.0

Source: This survey.

Native title, as the formal recognition of customary land rights, was regarded as being of the utmost importance, with virtually all respondents agreeing (of which 94.1 percent strongly agreed) that it was important. When further probed on whether they felt that native title was sufficiently protected through laws, 85 percent disagreed. In this context, the Executive Director of an Indigenous NGO clarified as follows:

“In theory, there is recognition for the ‘Temuda’ [land for shifting cultivation], however, local people face problems with the ‘Pemakai Menoa’ [communal lands] and the ‘Pulau Galau’ [virgin forest]. In many cases, there is a problem with these land types” (Oral communication, Executive Director, Borneo Resources Institute, 210911).

According to the expropriation procedures, clear and timely notice of the upcoming eviction should be given, coupled with a transparent process for the land surveying and the compensation. However, when the respondents were asked whether they believed that the authorities had complied with the procedures, a great majority (86.4%) disagreed, while another 10.5 percent was uncertain (Figure 6).



**Figure 6.** View on authorities’ compliance with land acquisition procedures. Source: This survey.

The reasons for this became apparent when disaggregating the various aspects of the expropriation (Figure 7). In terms of the notification, 42.3 percent felt uncertain about whether it was clear, and another 36.4 percent felt uncertain about whether it was timely. An overwhelming proportion (94.6%) disagreed (48.2% of which strongly disagreed) that their land had been properly surveyed. Almost half (44.1%) believed the survey methods were not transparent. The issue of compensation incited even more controversy, with 95.9 percent deeming the compensation unfair, 90 percent feeling uninformed about the calculation of compensation, and 94 percent having no understanding of how the compensation was arrived at.

In this respect, one of the village elders of a resettled longhouse community noted the following:

“Some of the crops were counted while some were not. Some of the properties were counted, some were not. Some of my friends who had less land received more compensation, whereas myself, who has more land than them, got less” (Oral communication, Uma Belor, 020912)

These statements were echoed by villagers:

“They [the government] promised to replace our land with at least five acres. Finally we ended up receiving only three. (...) We can no longer roam to gather food or hunt wild animals as we did before. Our area is limited while the neighboring lands around our longhouses belong to the logging and palm plantation companies (Oral communication, Luhak anak Tungau, villager, RSSA, 230511)).

In light of the above, the overall majority (86.0%) of respondents believed that they had not consented to the Bakun Dam project.

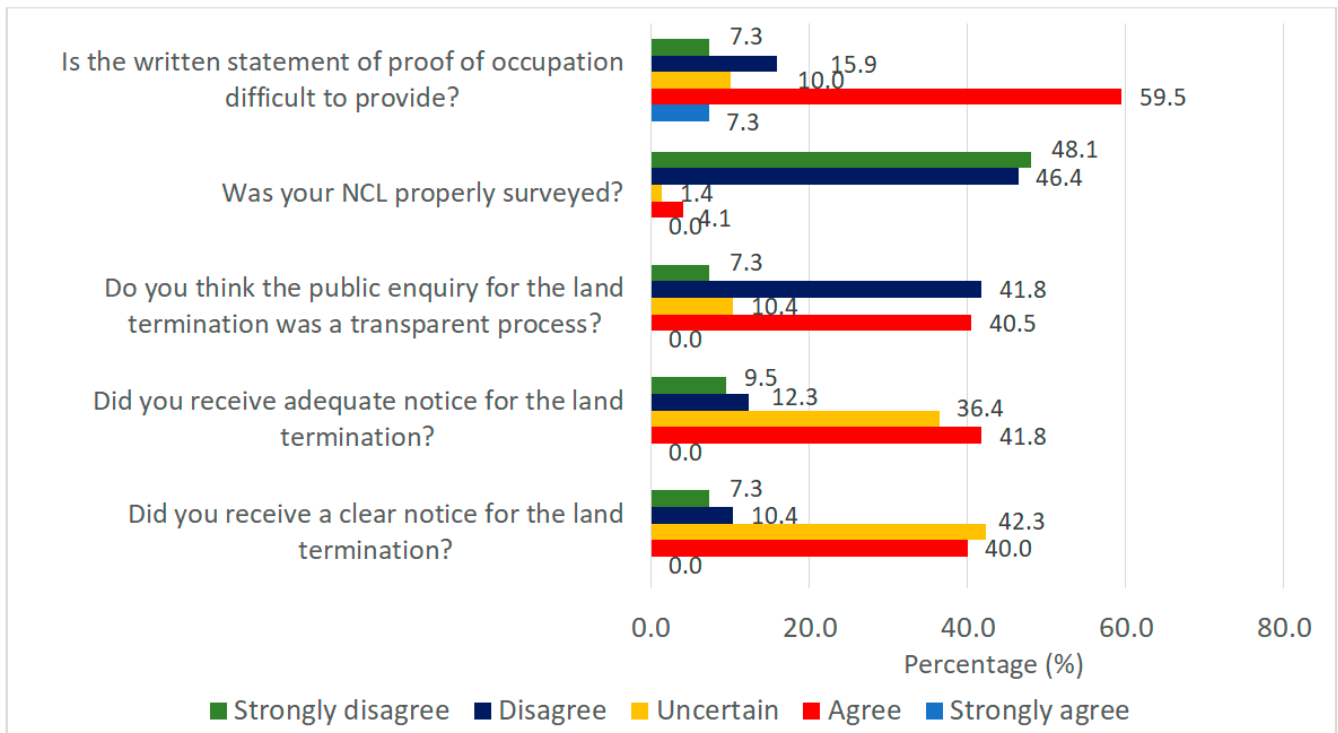


Figure 7. Views on land acquisition procedures. Source: This survey.

#### 4.2.2. The Actual

Moving on to the Actual, the second component of the FAT Framework, we examined the respondents’ views on the rights they enjoyed in actuality. After the resettlement, the Orang Ulu received private property to 3 acres of land that could allegedly be used for commercial plantation, thereby supplanting native title. Of concern is how the private title in the RSSA compared to previous rights enjoyed to: (1) the *Pemakai Menoa* or communal lands; (2) the *Temuda* or shifting cultivation land; and (3) the *Pulau Galau* or (virtually) undisturbed forestland.

It was found that the loss of communal lands and virgin forest area has had a major negative impact on the Orang Ulu’s food supply. More than 9 out of 10 respondents (or 93.6 percent, of which 71.6 percent felt strongly) felt that the Bakun had reduced food resources due to the lack of land for hunting and gathering. A community leader explained as follows:

“In the past, we could easily find wild boar, deer, fish, fruits, and so on, in our ‘Pulau’ [virgin forest]. The ‘Pulau’ was our food store. Since we have been resettled, it has disappeared. Free food is gone, and gone all together! Now we cannot simply go to other areas to find food as these belong to others. Here, everything needs money and without it we cannot live” (Oral communication, Pemancar, RSSA, 290912).

Local people stated that at the RSSA money was needed for everything, even to bring children to the primary and secondary schools required significant amounts of money. For instance, pupils from the Uma Bawang Longhouse required at least RM 2.00 per person per day for going to school.



What aggravated the situation was the fact that the land at the RSSA had not been reclaimed and prepared prior to arrival of the Orang Ulu. One of the community elders described as follows:

“Before we resettled, the government promised that everything would be ready at the RSSA. However, when we arrived, farm plots were unclear and it was still a thick forest. We had to cut down and burn the trees by ourselves. There were no proper access roads to the farms” (Oral communication, community elder, Uma Belor, RSSA, 021012).

Not only did the new settlers have to clear their own plots, the so-called “river”, which had been portrayed by the authorities as a key source of protein for the Orang Ulu, proved merely a small brook unsuitable for fishery (Figure 8).



**Figure 8.** The slash and burn for shifting cultivation at the RSSA (a). The stream at the RSSA claimed by authorities as suitable for fishery (b). Source: Photograph by Nor-Hisham.

Furthermore, agricultural practices were affected by the displacement. Of the respondents, 92.3 percent stated that they could no longer practice shifting cultivation in the RSSA. It was also felt by many interviewees that soil quality and agricultural yield were significantly lower at the RSSA, as compared to their original settlements along the Balui River. One of the informants made the following remark:

“Previously, our crops grew very well with less fertilizer. However, now, even with the use of fertilizer, the crops grow slowly. Crops such as black pepper, tobacco, and corn are growing so slow” (Oral communication, villager, RSSA, 02102012).

The issue of soil fertility has been corroborated by other sources. For instance, Rousseau (1994:2.4) noted that the soil quality at the RSSA was found to be largely in category III, which is less fertile than the land the Orang Ulu originally had. Remarkably, even the Kapit Divisional Department of Agriculture acknowledged that 43 percent of the land was less fertile in the RSSA, as compared to the original site, and was also of unsuitable topography for agricultural cultivation.

The survey also found that 44.2 percent of the respondents felt that the land they received at the RSSA was too small. One of the Indigenous community leaders remarked the following:

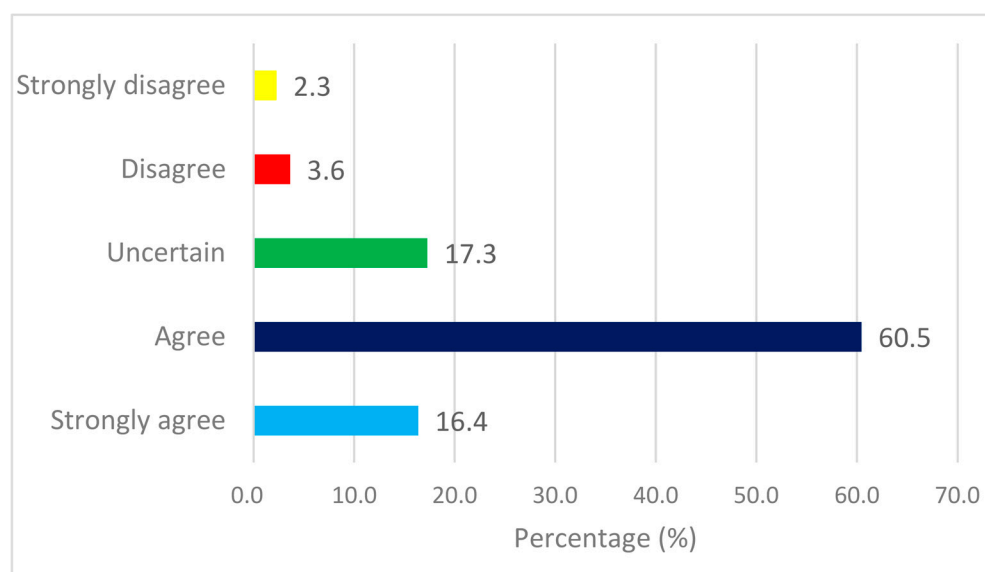
“Before the relocation, we were promised 12 acres in compensation per family, but during the relocation we were told that we were only entitled to nine hectares. Finally, when we had already been relocated, we were given only three acres” (Oral communication, Pemancar, RSSA, 021012).

Importantly, 88.6 percent agreed (including 64.5 percent strongly) with the statement that the allocated land area was insufficient to buffer future demographic change. Under customary law, the distribution of land in the longhouse communities was flexible, to account for changes in family size. At the RSSA, however, such flexibility was no longer

possible due to the private, rather than communal, nature of the land rights, as well as the limited size of the plots. One of the (few) female community leaders expressed the following:

“The government now provides us only with three acres of land. It is not enough, it is just not enough. What can we do with such a small size? How about our grandchildren?” (Oral communication, headwoman, Uma Nyaving, RSSA, 011012).

A final element in the rights that is enjoyed in actuality concerns the weakening of Indigenous institutions. In their original settlements, the Customary Council of Elders would decide on the allocation and control over land rights. However, over three quarters of respondents (76.9 percent) agreed that the council had decreased rights and power at the resettlement area (Figure 9).



**Figure 9.** Is the power of the Customary Council of Elders reduced at the RSSA? Source: This survey.

#### 4.2.3. The Targeted

Following the final component of the FAT Framework, the Targeted or the institutions that social actors wish to enjoy, we examined aggregate perceptions of the rights the Orang Ulu target. The majority of them (72 percent) stated that they would have liked the Bakun Dam to have been undertaken differently and, regardless of the angle, considered it evident that the function of land as a source of security plays a crucial role. Over ten years after the displacement, two effects underscore this: (1) abandonment of the RSSA and a return to whatever is left of the original lands; (2) illegal encroachment on state land in the RSSA as overt acts of civil disobedience.

As a major indicator in examining whether the Orang Ulu felt socially secure at the RSSA, they were probed for their intentions to stay or move out of the resettlement area. Markedly, more than half of the respondents (54%) intended to leave the RSSA, while almost one-third (33%) felt uncertain about whether they should stay or not. The overriding reason for moving out, indicated by 88.7 percent of the respondents, was to improve food availability and income. An equally telling reason, given by 7.1 percent, was the fact that others had already moved out. When visiting the resettled people at the Uma Belor longhouse, it was found that entire blocks of houses were unoccupied. One of the few remaining residents provided the following explanation:

“Some are moving out because there is no suitable job for them. Others also show their rejection to the government by moving out, but the majority has moved out to the town due to difficulties in raising income” (Oral communication, teacher and villager, RSSA, 111012)

Of the survey respondents, 92.2 percent (of which 45.5 strongly) agreed that the illegal encroachment on state land was driven by the small private plots they had received as compensation. An Indigenous leader explained as follows:

“How can we make a living with just three acres of land? We have to make a decent income to feed our family. To earn additional income or food, some settlers have to expand their farms into state land, they have no choice” (Oral communication, Pemancar, RSSA, 021012).

As shown in Figure 10, even small areas along roadsides were illegally reclaimed. During field observations around the RSSA, it was found that some of the villagers had even planted crops, such as bananas, on lands belonging to the logging companies.



**Figure 10.** Illegally reclaimed land planted with corn (a) along main road leading to the RSSA community center; (b) main road to Uma Belor longhouse, RSSA. Source: Photos by Nor-Hisham.

From all of the above, it is obvious that the federal and state authorities disregarded the social function of property. This is not only clear from the limited land allocated but is also clear from the lack of any attempt to assist the Indigenous population to transition towards a new, secure life away from a traditional livelihood. After relocation, the Orang Ulu were left behind to fend for themselves, and a significant issue surfaced around vocational training. Of the respondents, 40.0 percent stated they had not been given vocational training but were in need of it. Among them, 45.5 percent would have liked training in (commercial) agriculture, 20.9 percent for aquaculture, 15.9 for handicraft, 11.8 for sewing, and 5.9 for others (such as motor and electrical repair, homestay, bakery, and beauty and cosmetics). A village headman stated the following:

“Many of my people just left their land vacant because they don’t know how to till the land in the RSSA. We are not used to this way of life. (...) Thus, we really need help from the government” (Oral communication, Tuai Umah, RSSA, 111012).

## 5. Discussion: Measuring the Social Function of Property

This research demonstrated that the social function of property can be empirically established and measured through the FAT Framework. This fact is not only important from an academic perspective, but also from a practical perspective, as it offers the possibility to better evaluate, adjust, and improve land policies. As said, the FAT Framework is a hermeneutical and spatiotemporally sensitive analytical tool that can be deployed via qualitative, quantitative, or hybrid approaches. Here, we employed the latter, i.e., a combination of qualitative and quantitative methods. The FAT analysis was used to analyze the Bakun mega-dam project, was conducted at two timepoints ( $t_1$  and  $t_2$ , before and after resettlement), and found the following:

1. Formal: The expropriating agency disregarded the social function of property;

2. Actual: Power divides between those expropriating and those expropriated prevented meaningful participation by the latter;
3. Targeted: The social function of property is essential for the livelihood of the expropriated. In the Sections 5.1–5.3, the findings are, respectively, discussed.

### 5.1. Expropriating Agency Disregards Function of Property

In terms of the Formal (what property rights are formally declared to do), before resettlement, the official property rights situation was one in which the Sarawak Land Code granted native title to the Orang Ulu, under which they were allowed to use land, as long as it was recognized before 1958 and had been in continuous use as native customary land ever since. After resettlement, more than 80 percent of the respondents disagreed that the government had abided by the law in expropriating native title, while an equal percentage disagreed that the invalidation was acceptable. As a result, over 8 out of 10 did not agree with the statement that they had freely consented to the Bakun Dam project.

### 5.2. Power Divides Prevent Meaningful Participation

In terms of the Actual (what property rights do in actuality), the legal status of native title was already weak before resettlement. The Orang Ulu had limited means to protect their landed interests against the state. Customary land use of the Orang Ulu is essentially mobile and flexible in time and space: a plot of forest is cleared, cultivated for a few years, and left fallow for a newly reclaimed plot until its fertility is naturally recovered. However, under the effective laws, the Orang Ulu stand in a disadvantaged position vis-à-vis the state.

First, it is not possible to move to new land and have this recognized as native customary land as only claims predating the time limit of 1958 are deemed valid. Second, it is not possible to return to land left fallow because native customary land can only be recognized when it has been in continuous use ever since 1958. Third, native customary land is encumbered in terms of geographical area (only for the interior regions) and the rights to sale, lease, and transfer, as a result of which it has lower economic value than privately owned land. The value problem returns with a vengeance during expropriation, as Indigenous people receive lower compensation and, as a result, lose the value gap between what was needed to uphold a livelihood based on customary shifting cultivation (where living costs were covered through what nature provided) and a new life based on privatized, cash crop cultivation (where costs of living should be paid for).

This is also what came to pass during the expropriation for the Bakun Dam mega-project. Overnight, the Orang Ulu were drawn into a life in which they had to purchase foodstuffs rather than being able to acquire it themselves through shifting cultivation, hunting and gathering, and traditional fishery. After resettlement, at  $t_2$ , the overall majority of respondents felt that the Bakun Dam had led to reduced food availability. They also stated that the private land in the RSSA was insufficient to buffer demographic change. As a result, many illegally encroached on state land to find sufficient food (over 9 of 10 respondents maintained that they reclaimed state land because the private plots were too small). Not surprisingly, close to 80 percent reported that the traditional power over land of the Customary Council of Elders had been undermined.

In a twist of irony, the government had actually anticipated the lack of land at the RSSA. The social impact assessment commissioned by the Sarawak State Government stated that two problems could arise if the land allocated was less than five hectares: (1) it is likely that many of the resettlers will expand their agricultural area from their assigned private plot; and (2) the resettlers may return to the reservoir area or migrate to other parts of the state [63], pp. 2–9 (This observation is in line with the observation by [115] who found that the three acres of land allocated to the Orang Ulu was insufficient).

### 5.3. Importance of Social Function of Property

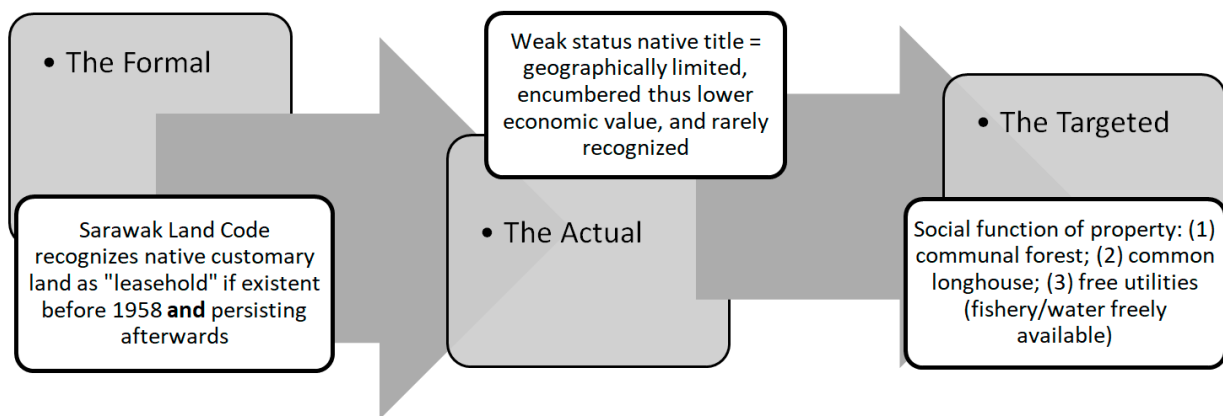
In terms of the Targeted (what property rights are targeted to do), we found that the Orang Ulu unequivocally expressed the importance of land for social welfare before reset-

tlement at  $t_1$ . Dependence on land was reflected in their employment: close to 60 percent were involved in (subsistence) farming, while an additional 14 percent were unemployed or engaged in hunting/gathering (and other non-salaried occupations). For these reasons, the Orang Ulu requested to be equally compensated by the authorities for the expropriated property through communal forest, common housing, and non-paid utilities (water and electricity).

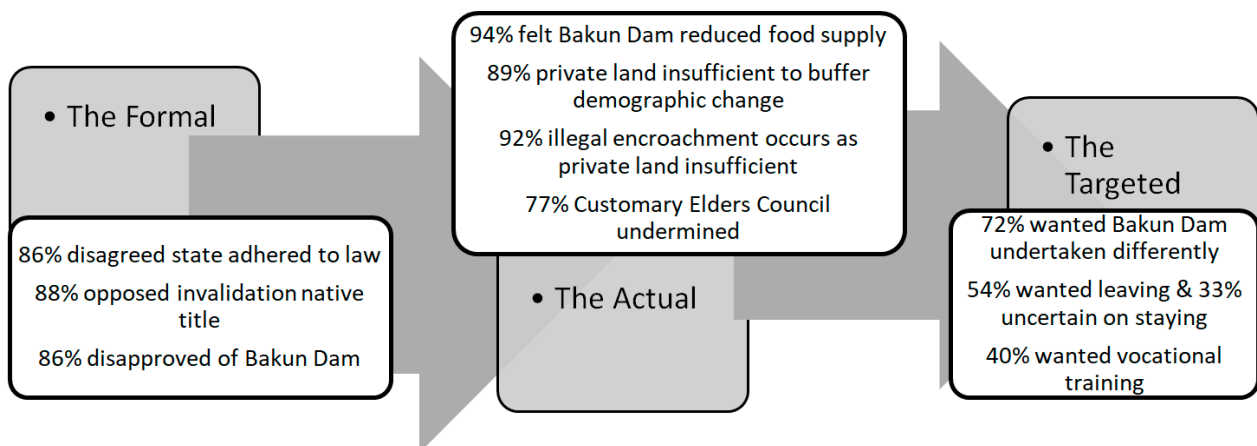
After resettlement at  $t_2$ , the government’s disregard of the social function of property became evident: more than 70 percent of the respondents wished that the Bakun mega-project had been conducted differently; over half of them were thinking of leaving the area to which they had been resettled, whereas another one third were uncertain about whether they would stay; and 40 percent said they needed some form of vocational training to help them transition to new employment.

An additional benefit of the FAT Framework is its potential in visualizing the complex processes of development-induced displacement and resettlement, and how the social function of property features in these at different timepoints. Based on the above, we can now summarize the ramifications of this study’s findings in a single image (Figure 11).

**$t_1$ : situation before resettlement**



**$t_2$ : Situation after resettlement**



**Figure 11.** Temporal FAT analysis of Bakun Dam. Source: Illustrated by authors.

**6. Conclusions: Towards a Future Research Agenda**

“We live on the land and from the land, and to the land our bodies or our ashes are committed when we die”. [116], p. 3

“We get income and food from the land and forest (. . .), we get medicine from the forest and we worship the rivers, hills and trees. Most importantly, our ancestors are buried on this land” (Oral communication, villager, RSSA, 230511).

The saga about the function of property as told here from the perspective of displaced communities is, unfortunately, all too common and one that has been told many times before [37–40]. An important study concluded that instead of gaining support for development projects by negotiating in good faith with affected people, governments frequently rely on the power of the eminent domain to impose expropriation without adequate compensation [117]. It is also why free, prior, and informed consent is critical to achieve acceptance of project implementation by those affected [118–120]. Different from how it is often portrayed by political and economic actors seeking to develop land for economic gains, land more often than not functions as a source of livelihood, social security, and welfare. Particularly, when those living *on* the land are living *off* the land for subsistence, this truth should not be forgotten. Taking away land under such conditions without adequately compensating for its social function risks the marginalization of those dependent on it [118].

This research underscored the importance of the social function of property in the studies on land, housing, settlements, and natural resources. Simultaneously, by using the theoretical lens of the credibility thesis, we were in a position to elucidate what “function” denotes, how it emerges and evolves, as well as how it can be supported or is being undermined. Critical in this endeavor is the measurement of the credibility of the social function of property: how credible are property rights for resource users prior to a policy, and how did that credibility change after it was executed?

Our research showed that the credibility thesis can assess the social function of property—qualitatively *and* quantitatively—by examining actors’ aggregate perceptions along dimensions of the Formal (what institutions are *formally* purported to be), the Actual (what these institutions *actually* achieve), and the Targeted (what resource users *target* these institutions to achieve). Importantly, this research showed that an analysis based on the Formal, Actual, and Targeted (FAT) Framework can be conducted at multiple timepoints—in our case, *ex-ante* at  $t_1$ , before the indigenous peoples’ displacement, followed by *ex-post* analysis at  $t_2$  afterwards.

In so doing, this research demonstrated the potential of the FAT Framework in analyzing mega-projects and other development-induced and resettlement projects, not only for mega-dams, as in this article, but also extending to real estate, infrastructure, agriculture, mining, and global events (e.g., for high-level sports and political gatherings). In this respect, this article taps into larger research agendas seeking to unpack the function of property; to assess when, where, and how property fulfills a social function; and to prevent and mitigate the marginalization and displacement of local communities. Apart from FAT analyses that use perceptual divergences as an indicator [10,34,48,119], future research on development-induced and resettlement projects could also use additional tools developed under the credibility thesis *and* field-tested, such as the Conflict Analysis Model (CAM) [9,30,51,74,120,121] and the CSI (Credibility Scales and Intervention) Checklist [10,22,29].

Before closing, let us have a look at the quotes with which this conclusion began. The first was put forward by the *éminence grise* of land studies, Rowton Simpson, whereas the latter was uttered by an Indigenous peasant far removed from the world of academic research. Despite the fact that these two people are separated from each other in space and time, their words bear an almost uncanny resemblance. They capture the essence of the notion that property may assume a social rather than an economic function, as is often the case for resource-poor groups. Recognizing the social function of property has crucial ramifications for understanding the failure or success of land policies and should serve as a critical reminder that there are pertinent conditions under which such interventions are better halted.

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## Appendix A

**Table A1.** Native customary land before resettlement (totals/per family).

Common Native Customary Land (ha)	Number of Families	Native Customary Land Per Family (ha)
<b>Mid Balui river section</b>		
Uma Baw'An	4761	42.9
Uma Nyaving	4623	45.8
Uma Belor	2086	20.7
Uma Kelep	1483	15.0
Uma Lahanan	2832	20.3
Uma Penan	incl. in Balui Liko	0
Uma Balui Liko	5346	66
Uma Juman	5236	36.6
<b>Subtotal</b>	<b>26,367</b>	<b>33.0</b>
<b>Upper Balui river section</b>		
Uma Daro'	913	8.7
Uma Buket	198	2.7
Uma Balui Ukap	734	7.6
Uma Lesong	566	4
Uma Bakah	1162	3.9
Lepo' Kulit	1686	6
Uma Badeng	6243	8.6
<b>Subtotal</b>	<b>11,502</b>	<b>8.6</b>
<b>Total</b>	<b>37,869</b>	<b>17.7</b>

Source [64].

### List of Interviewed Organizations

Association of the Orang Asal Network Peninsular Malaysia  
 Borneo Research Institute  
 Consumers' Association of Penang, Malaysia  
 Department of Environment of Kuala Lumpur  
 Department of Environment of Putrajaya  
 Economic Planning Unit, Prime Minister's Department  
 Ministry of Energy, Green Technology and Water (MEGTW)  
 Natural Resources and Environmental Board  
 Sahabat Alam Malaysia, Penang  
 Sahabat Alam Malaysia, Sarawak  
 Sarawak Hidro Berhad  
 Sarawak Economic Planning Unit, Kuching Sarawak  
 Sub-district Office of Sungai Asap, Sarawak  
 Traditional administrators at the Resettlement Scheme of Sungai Asap, Sarawak  
 Village Development and Security Committee of the RSSA, Sarawak

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