

Slippery land, ever-shifting boundaries: claiming and accessing alluvial (is)lands in the Ayeyarwady Delta, Myanmar

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Abstract

In Myanmar, since the transition to a quasi-civilian government in 2011, resolving land disputes has been high on the political agenda. Grounded in Political Ecology and inspired by Science and Technology Studies, this article investigates the critical geography of the strategies through which alluvial (is)lands in the Ayeyarwady Delta are made into disputed resources. This interdisciplinary research brings together an historical analysis of publicly available satellite imagery, geomorphological studies, qualitative interviews with villagers and officials, and participatory observation over three years. More specifically, and empirically, the article sheds light on the socio-material dynamics of three alluvial sites in the Ayeyarwady Delta, along the main river stream. Based on an in-depth understanding of the river dynamics and of legal and administrative considerations, (is)lands' inhabitants devise multiple resource-making strategies that are underpinned by different, overlapping, and often conflicting discursive justifications and principles. Dependency on the (is)lands, vulnerability to far-reaching environmental changes, and multiple forms of prior appropriation are commonly used to justify claims and practices. Theoretically, these resource making strategies lead us to interrogate what makes the materiality of ever-shifting socio-environments such as alluvial (is)lands. There is a "volatile" materiality that consists not only of the ever-changing shape and position of alluvial (is)lands, but also comes into being through competing practices and claims that may exist before and long after sediments and grass actually materialize. This volatile materiality takes an oral and written dimension in multiple inscriptions devices such as fences, landmarks, land titles, maps, or even stories.

Keywords: Resources, access, materiality, alluvial (is)lands, Ayeyarwady River Delta, Myanmar

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Résumé

Au Myanmar, la résolution des conflits fonciers a acquis une importance politique majeure depuis la transition politique engagée en 2011. Ancré dans les champs théoriques de la *Political Ecology*, et des Etudes des Sciences et Techniques, cet article contribue à une littérature émergente en géographie critique qui a pour objet la matérialité des ressources. Nous analysons les multiples stratégies au travers desquelles les îles alluviales du delta de l'Ayeyarwady sont façonnées. Nous adoptons une approche interdisciplinaire couplant analyse d'imagerie satellite, étude géomorphologique, entretiens qualitatifs avec des villageois, représentants élus et agents de l'administration, et observation participative sur trois ans et décrivons les dynamiques socio-matérielles à l'œuvre sur trois sites alluviaux le long du bras principal du delta de l'Ayeyarwady. Nous montrons comment les résidents de ces sites alluviaux utilisent leurs connaissances fines des dynamiques des terres et des eaux du delta et du cadre institutionnel qui en régit les usages, pour façonner, littéralement et figurativement, les ressources qu'ils revendiquent. De multiples stratégies sont à l'œuvre ; elles sont justifiées de diverses façons qui peuvent se recouper, se superposer ou être contradictoires les unes avec les autres. Une dépendance importante voire exclusive aux îles alluviales, une vulnérabilité à des changements environnementaux présentés comme inéluctables, et de multiples formes d'appropriation antérieure sont couramment avancés pour justifier revendications et pratiques. D'un point de vue théorique, nous en venons à questionner ce qui constitue la matérialité de socio-écosystèmes en état de flux constant tels que les îles alluviales. Nous parlons d'une « matérialité transitoire » qui ne dépend pas seulement des changements dans la taille et localisation des îles mais qui est également façonnée par des revendications et des pratiques qui peuvent exister bien avant et après que les sédiments et les herbacées émergent des flots. Cette matérialité transitoire se retrouve et acquiert réalité également au travers de divers dispositifs d'inscription tels que clôtures, titres fonciers, cartes, ou encore l'histoire orale.

Mots-clés: Ressources, accès, matérialité, îles alluviales, Delta de l'Ayeyarwady, Myanmar

Resumen

En Myanmar, la resolución de los conflictos por la propiedad de las tierras ha adquirido una gran importancia política desde que comenzó la transición política en 2011. Basándose en los campos teóricos de la *Political Ecology* y los Estudios de Ciencia y Tecnología, este trabajo participa de una literatura emergente en el campo de la geografía crítica que se centra en la materialidad de los recursos. Analizamos las múltiples estrategias a través de las cuales se forman las islas aluviales del delta del Ayeyarwady. Adoptamos un enfoque interdisciplinario que combina análisis de imágenes satelitales, estudio geomorfológico, entrevistas cualitativas realizadas con las poblaciones de las aldeas, los representantes elegidos y los agentes administrativos, así como la observación participativa durante tres años, y describimos las dinámicas sociales y materiales en vigor en tres sitios aluviales a lo largo del brazo principal del delta del Ayeyarwady. Demostramos cómo los habitantes de estos sitios aluviales utilizan su íntimo conocimiento de la dinámica de la tierra y del agua del Delta así como el marco institucional que los rige para plasmar los recursos que reivindican, literal y figurativamente hablando. Recurren a múltiples estrategias, las cuales están siendo justificadas por diferentes discursos que pueden coincidir, superponerse o contradecirse entre sí. Una dependencia significativa o hasta exclusiva respecto a las islas aluviales, la vulnerabilidad a los cambios ambientales presentados como inevitables, y las múltiples formas de apropiación anterior son argumentos que están comúnmente aportados para justificar las reivindicaciones y prácticas. Desde un punto de vista teórico, llegamos a cuestionar lo que constituye la materialidad de los socio-ecosistemas en un estado de flujo constante como las islas aluviales. Hablamos de una "materialidad transitoria" que no sólo depende de los cambios en el tamaño y la ubicación de las islas, sino que también está conformada por reivindicaciones y prácticas que pueden existir mucho antes y después de que los sedimentos y las plantas herbáceas emerjan de las aguas del río. Esta materialidad transitoria también se encuentra y coge forma a través de los diversos dispositivos de inscripción como vallas, títulos de propiedad, mapas o incluso historias orales.

Palabras clave: Recursos, acceso, materialidad, islas aluviales, Delta del Ayeyarwady, Myanmar

1. Introduction

On February 1, 2021, the Myanmar military arrested the civilian government leaders and announced a one-year "state of emergency". When we started this research a few years ago, tensions in Myanmar were of a different nature and much less visible than the current political crisis, but very real too. In July 2019, contested land encroachment on a river island in the Magwe Region in Upper Myanmar had for instance led to several deaths (DVB 2019; U Aung Thu Nyein 2019; U Sit Htet Aung 2019). This put alluvial (is)lands on the political

agenda and led the relevant government agencies to review existing modalities of alluvial land management, paving the way to recent legal developments.

Alluvial (is)lands located along the Ayeyarwady River and known as *kaing*"*kyun*" or *myei-nu'kyun*" in Burmese² are very fertile. This is illustrated in the names local inhabitants use to designate these: the silver sandbank (*ngwei-thaung*), the treasure island (*ya-ta-na' kyun*"), the diamond (*sein*) or golden (*shwei*) island.³ Residents of villages located on alluvial (is)lands or along riverbanks grow a wide variety of crops including maize, beans, chilies, tobacco, onions and other vegetables. The land, however, keeps changing owing to processes of erosion and accretion. Land can disappear on one side of the river and reappear on the other side, altering in the process. Land can also become stable for some years before it erodes again owing to the strength and changing dynamics of the river. Some river dwellers lose while others win as eroding land generally reappears in another form, potentially near other villages than those that experienced previous land losses. This notably makes alluvial (is)lands prone to conflicts (Lubeigt 1974; 1998: 43; U Maung Maung Nyunt 2018; U Zaw Min 2019).

In the Magwe case, residents of two villages previously described as "*friendly neighbors*" (U Hein Thar 2019) made rival claims on a piece of land of no more than seven acres (2.8 hectares). Residents of one of the villages had reportedly been cultivating the land since 2003, renting it from residents of the other village (U Kaung Myat Min 2019). In 2018, however, after they had experienced land loss due to erosion in another part of their village, cultivators started building houses on this piece of land they had rented. This led to violent conflicts with residents of the other village who had rented out the land until then, inflicting heavy casualties (*Ibid.*). The head of the Township Department of Agricultural Land Management and Statistics (DALMS) claimed that, although residents of the first village had been "officially" cultivating the land, there was no proof that they "owned" it since no official survey had been conducted. Village tract administrators⁴ further claimed that the DALMS had designated the contested piece of land as a site for school development to the benefit of the second village since 2003 (U Aung Thu Nyein 2019).⁵ That villagers of one village cultivated land that had been officially allocated to another village was unproblematic until residents of the first village significantly changed their modalities of land use and started building houses. This was perceived by residents of the second village as an attempt to appropriate land and, today, tensions between the two villages continue.

This story shows the intertwined nature of social and ecological dynamics of alluvial (is)lands in relation to their shifting materiality. Modalities of access and use of alluvial (is)lands that have been socially negotiated over time can suddenly become conflictual in relation to changes, not only in the shape and position of the alluvial (is)lands themselves, but also in the dynamics of land in surrounding areas.

This calls for adopting a multi-scale approach to study these dynamics. In this article, we analyze access and use of alluvial (is)lands as resulting from ever-shifting socio-material configurations in three distinct sites located in the upper reaches of the Ayeyarwady Delta (Figure 1). We describe how residents make use of the ever-shifting institutional and biophysical alluvial landscape to further their claims as (is)lands progressively drift across village (case study 2) or regional (case study 1) boundaries, or emerge in the continuity of existing landforms (case study 3). Theoretically, we interrogate the notion of resource *materiality* that has recently found traction among critical geographers (Bakker 2004; Bakker and Bridge 2006; Castree 2003; Whatmore 2002).

² In Burmese *Kyun*" means island. *Kaing*" (*Saccharum Spontaneum*) is a type of grass that grows and contributes to stabilize alluvial (is)lands (e.g. Stamp and Lord 1923: 143). The word *Kaing*" also qualifies the type of cultivation practiced on alluvial land.

³ The transcription of Burmese terms follows the "standard conventional transcription" system recommended by John Okell. 1971. *A guide to the romanization of Burmese*. London: The Royal Asiatic Society. p. 66–67.

⁴ The administrative structure in Myanmar consists of village tract (comprising several villages), township, district, state/region and central level authorities, from the smallest to the largest unit.

⁵ The term "site for school development" or "school land" (in Burmese, *kyaung*" *myei*) is widely used to refer to land that is "put aside" under the management of village or village tract authorities when new land allocation takes place. Such land is usually located at the boundary of two villages and meant to be used for the construction of schools or any other collective amenities. Pending development, land is often rented out to farmers, including to outsiders. The rent collected is meant to contribute to the constitution of a "development fund" that can be used for building or maintaining collective amenities but is also commonly diverted by village elites and/or government officials in charge of land management (Ivars 2020).

What indeed can be said to be material in an alluvial landscape that, to paraphrase Kuntala Lahiri-Dutt, is a malleable environment "that combines and confuses water with land" (2004a: 508) and constantly waxes and wanes, in turn appearing from or disappearing into "nothing"? We show how residents have learned to use what we call the "volatile materiality" of the alluvial (is)lands and, in doing so, are actively shaping it too.



Figure 1: Farmers contesting land allocation decisions in Kun Thee Pin, Nyaungdone Township on June 20th 2019. Source: the authors.

The following section rapidly sketches the theoretical underpinnings of an empirically grounded study. We start from the notion that (natural) resources do not exist *per se* but are actively shaped through claims and practices that are themselves influenced by the materiality of the said resources, in a complex dialectical relationship. We then describe the research area and the interdisciplinary approach we adopted (section 3) and continue with an historical reading of the institutional framework governing alluvial (is)lands in Myanmar (section 4). Section 5 analyzes the socio-material dynamics of three alluvial (is)lands. In each case, we describe conflicting claims, access and use practices of alluvial (is)lands, and the discursive justifications residents use to further and secure their claims at the expenses of others. In the final section, we identify the cross-cutting multi-faceted resource making strategies that shape the volatile materiality of alluvial (is)lands. These, we argue, have an oral and paper dimension embedded in a multiplicity of inscription devices.

2. The volatile materiality of alluvial (is)lands

Political ecologists have long studied ecological dynamics and their socio-political dimensions (e.g. Fairhead and Leach 1996; Kull 2004; Scoones 2001; Zimmerer and Young 1998). More recently, inspired by Science and Technology Studies, a growing body of literature in critical (environmental) geography (Bakker 2004; Bakker and Bridge 2006; Castree 2003; Whatmore 2002) and anthropology (Li 2014; Richardson and Weszkalnys 2014) has investigated the role that (resource) materiality plays in shaping the dynamics of access and uses of resources. These scholars highlight that 'things' matter and contribute to shaping social relationships but that, dialectically, these things and resources do not exist *per se* but are made and produced "through material, representational and symbolic practices" (Bakker and Bridge 2006: 18). This echoes long lasting contributions by political ecologists who highlighted that what "makes" the environment and environmental dynamics into knowledge are situated processes (e.g. Blaikie and Brookfield 1987; Escobar 1999; Forsyth and

Walker 2008) and that, accordingly, conflicts and disputes over resources largely result from contestation over meanings and material organization (Brosius 1999).

Alluvial (is)lands provide a particularly interesting case for reflecting on the complexity of socio-environmental configurations and, more specifically, on the notion of (resource) materiality. Indeed, alluvial (is)lands challenge one of the key binaries underpinning our understanding of the environment, between land *and* water (Lahiri-Dutt 2014b). Scholars who have worked in similar environments as those studied in this article, such as the Chars in Bangladesh (Lahiri-Dutt and Gopa 2013; Lahiri-Dutt 2014a; Sarker *et al.* 2003; Zaman 1989), the islands of the Early-Modern Rhône in France (Reynard 2013), along the Danube River (Richardson 2016), or the floodplains of northern Colombia (Camargo 2017), highlight that they are unstable and uncertain environments "that can morph from one into another, and can fuse into each other" (Lahiri-Dutt 2014b: 512). What, then, can be said to be material? As alluvial (is)lands are indeed in constant flux, we call for understanding their materiality as ever-shifting socio-material configurations and use the word "volatile" to qualify this impermanence (on the concept of volatility in deltaic environments, see Krause 2017). The volatile materiality of alluvial (is)lands is, then, not only related to changing dynamics of sediments and grass. It also comes into being through multiple and often conflictual practices and claims that may exist before, and long after, sediments and grass actually materialize in the Ayeyarwady waters.

These claims are often expressed through multiple "inscription devices", a term we borrow from Bruno Latour. He used it to talk of the tools used by scientists in modern laboratories to simplify complexities, that is, to make things more readable (1983: 161). More recently, the concept has been used by anthropologist Tania Murray Li who explored "the inscription devices that have produced land as a resource available for global investment" (2014: 590). Other authors, inspired by Science and Technology Studies (STS), have also used the word "inscription" to talk of the practices through which users change the "scripts" that designers of agricultural technologies assume the former will follow when using them (Glover *et al.* 2017; Ivars and Venot 2018). In line with this, in this article, we use the term inscription devices in reference to a series of artefacts (such as fences, landmarks, land titles, maps, or stories) in which actors "inscribe" their claims, and doing so, "make the (is)lands."

The alluvial (is)lands of the Ayeyarwady River Delta can only afford temporary and precarious occupation – even though this may last for decades. Their volatile materiality constitutes opportunities for some, but threats to others as land can be washed away or existing claims are weakened as alluvial (is)lands change in shape and position. This allows new claims to emerge within an institutional framework that is, itself, volatile and complex (see section 4). As highlighted by Camargo (2017) in his study of the floodplains of Northern Colombia, we suggest that conflicts over access and use of alluvial (is)lands are consubstantial with their volatile materiality because of the many affordances they provide. Further, because they are grounded and reinforce specific (often static) representations of alluvial (is)lands, laws and policies for their management can trigger their own set of conflicts by endorsing specific rights over others.

This article, hence, investigates the multiple strategies residents devise, together with and around multiple agents (including the river, its sediments and grass but also multiple inscription devices), to "make" resources they can claim and use. By doing so, we analyze how the volatile materiality of the alluvial (is)lands of the Ayeyarwady River Delta come into being through multiple and conflicting socio-material processes.

2. Research area and methods: a temporal and spatial history of three (is)lands along the Ayeyarwady River

To grasp the volatile materiality of alluvial (is)lands in the Ayeyarwady Delta, we adopted an interdisciplinary approach linking social science methods (mostly interviews and participatory observation), geomorphological analysis, and the use of remote sensing techniques and Landsat imagery from 1988-2018. The research is also informed by ethnographic work conducted by the first author in the township of Nyaungdone between 2017 and 2019, and focused on exploring delta inhabitants' resource making strategies in the context of environmental and political transformations.

We conducted a first analysis of Landsat imagery at the scale of the delta to identify different river stretches that were more or less dynamic, depending on the extent to which river channels shifted over the last 30 years (see Gruel 2018). We then selected three areas that we believed could allow coverage of a diversity of socio-material configurations and that could be grasped within short-term trips (we spent less than a week in each of the first two sites and about one month in the third site). Pragmatic considerations (distance, ease of access, previous contacts, and administrative authorizations) also played a role in this selection. The three case study areas can be cursorily described as follows (see Figure 2):

- The **first** case study site (the most upstream) is located in a very dynamic stretch of the river, with numerous shifting sandbanks. The area has witnessed significant erosion over the last 30 years, including the destruction of long stretches of embankment on the main riverbanks. The case study area spans several townships that belong to two regions: the Ayeyarwady and the Yangon Regions.
- The **second** case study site is located in an area where the river widens and sediments are deposited. There are almost no sandbanks, and accretion has been particularly important since the early 2000s. (Is)lands first emerge along the right riverbank before they grow in size, and progressively drift eastwards within the limits of embankments that have been little affected by erosion over the last 40 years. The area spans several village tracts of the Nyaungdone Township in the Ayeyarwady Region.
- The **third** case study site (the furthest downstream) is located at a major bifurcation of the delta. Overall, water and land areas have remained relatively stable over the last 30 years with a slight tendency to erode. The case study area, however, is very dynamic with land masses significantly changing shape and position. This area spans the townships of Nyaungdone and Pantanaw in the Ayeyarwady Region.

We conducted a further historical analysis of satellite images over these three areas and elaborated maps that represent the years when specific stretches of (is)lands have appeared and have persisted since then (Figures 4, 6 and 9). Landforms first emerged as sandbanks on which *kaing*" grass fixed itself, hence allowing for loamy sediments to deposit. As the soil structure progressively improved and stabilized, cultivation became possible.

The maps and illustrations in this article have a particular status. Some of them are presented and discussed in their capacity as inscription devices used by some actors to further their claims. Others, we generated ourselves to support our argument. They are partial representations of complex socio-material configurations that cannot be fully appreciated through static images, but we have tried to embed the volatile materiality of alluvial is(lands) in these illustrations (animations showing the evolution of landforms in the three case study sites can also be found at: <http://deltasoutheastasia-doubt.com/2020/02/08/animation-myanmar/>)

In addition to this desk-analysis, we talked with elderly people and village-level elected representatives to document local histories of (is)land access and use. We also conducted interviews with residents to better understand their claims, the ways they legitimize them and disqualify competing claims. We focus on disputes between different villages rather than between residents of a specific village (though these are widespread). This is to provide an overview of claims and practices that is as broad as possible. We complemented this village-level analysis by interviews with selected officials of the Department of Agricultural Land Management and Statistics (DALMS) at Township and District levels. This allowed us to get a better sense of the official history of land allocation in the case study areas. To understand the latter we also conducted an in-depth review of official correspondence letters, maps and reports, most often obtained from villagers.

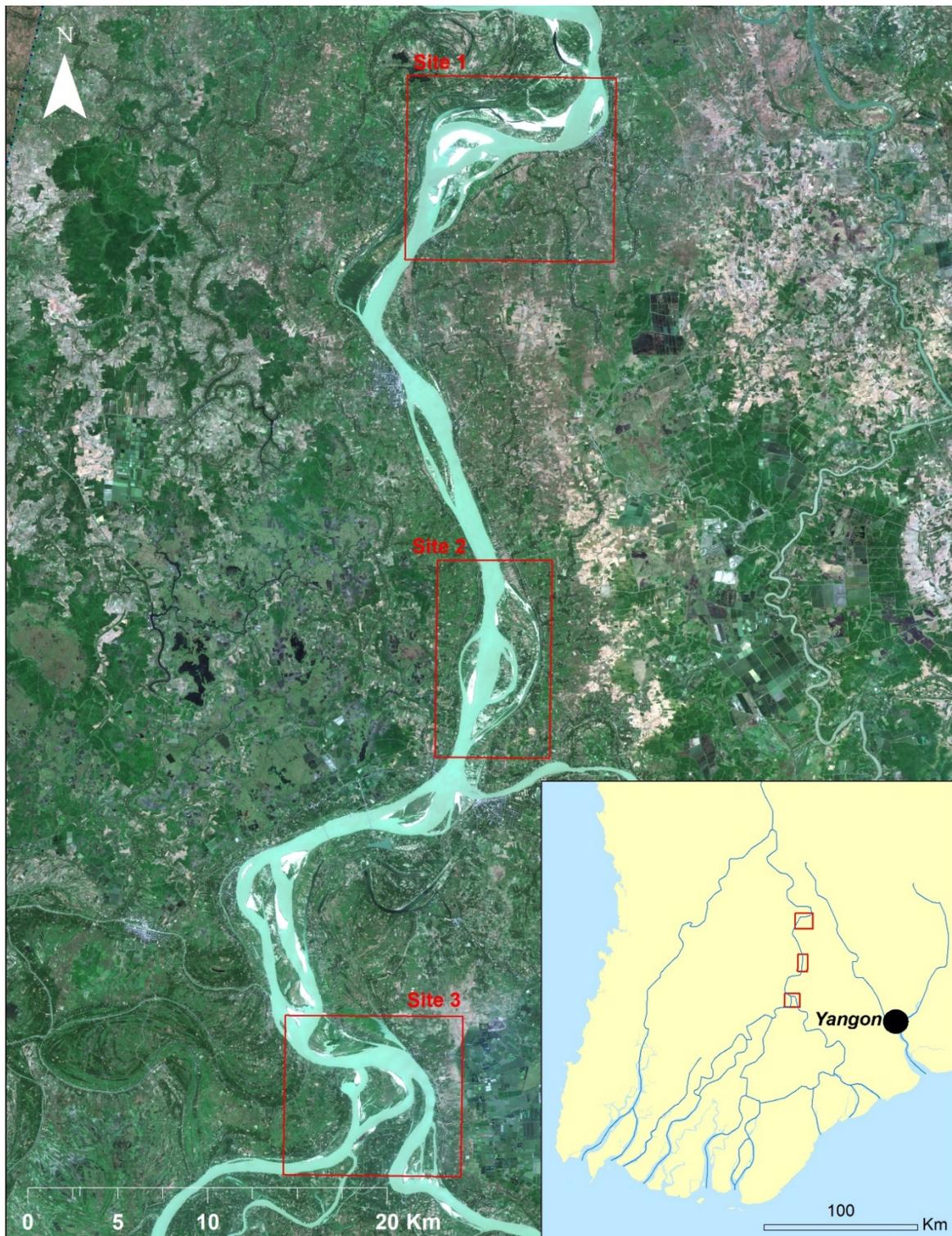


Figure 2: Location of the study sites. Source: the authors; Image Sentinel 2, 5 February 2018.

3. Administering an ever-shifting landscape

This section describes the institutional framework that regulates access to alluvial (is)lands, and how it has evolved since 1852 (see Figure 3 for a synthetic representation). This complex institutional framework provides multiple opportunities to legitimize certain practices and claims and disqualify others. Previous decisions and *de facto* practices never really disappear, and any single piece of legislation is generally interpreted in different ways, and only partially followed in a context of legal pluralism (see Boutry *et al.* 2017; Mark 2016; Scurrah *et al.* 2015 and Suhardiman *et al.* 2019 for a detailed description of the broader land tenure institutional framework and related issues of land governance in Myanmar).

*Alluvial land management under British rule in Lower Burma (1852-1942) and up to 1962*⁶

During British rule, alluvial land management followed Burmese customary law but the Burma Land Revenue Directions (1911) were often used to adjudicate conflicts – in case existing norms and conventions were contested. Two key dimensions drove alluvial land management at the time: (1) a formal distinction between so-called permanent alluvial land (*myei-yint*) and non-permanent alluvial land (*myei-nu'*) that was formalized by the so-called Direction 40 that was relevant for Lower Burma (GoBB 1945: 113-115), and (2) the importance given to identifying administrative boundaries on the basis of which land was to be allocated.

Direction 40 described permanent alluvial land as land that was not liable to change in position or in texture (or both), though it could be flooded part of the year. This type of land was to be administered as land on the mainland. Cultivators occupying and reclaiming *myei-yint* land kept their land use rights season after season based on the Burma Land Revenue Directions 83-85. Non-permanent alluvial land (*myei-nu'*), in contrast, was land liable to yearly change. *Myei-nu'* land was to be redistributed every year. However, it was common practice that people who had been granted the right to use the land in a given year were to be given priority in allocation the following year – if they were still eligible for such allocation on the basis of their place of residence (U Tin Gyi 1931; see below). Such practices instituted a *de facto* prior appropriation right, making the management of the two types of alluvial land rather similar.

In case local arrangements could not be devised, administrative boundaries were to be used to identify who was eligible for alluvial land allocation and land use rights. Identifying the administrative boundaries that had to be considered for allocation was, however, in itself, prone to disputes. The establishment of "village tracts" as an administrative unit (in addition to townships and districts) by the British Government proved pivotal in determining allocation and access rules. Each village tract had jurisdiction over land that appeared within its boundaries/territory (*ok-chok-yei' ne-ni-meik*)⁷ and only residents of that village tract could be granted access to that land. In case of conflicts between villages located on the same side of a river, the Burma Land Revenue Directions advised the drawing of a line as an extension to the existing boundary between the villages towards the river. Land located on either side of this line was to be allocated to residents of the corresponding village. When disputes arose between villages located on opposite sides of a river, the Land Revenue Direction 5 of 1911 recommended considering the main/deep-water channel of the river (*yei-nek chaung'*), as flowing in the month of February as the relevant boundary for land allocation. The main water channel often materialized the boundary between administrative units that was key to identify jurisdictional authority. In case authorities of two adjacent administrative units did not want to consider the deep-water channel to delineate their respective jurisdiction, they could select another boundary (direction 6), again offering room for local negotiation.

The Land Revenue Direction 5 further accounted for the dynamics of alluvial land. It notably specified that if land changed position but remained "identifiable", jurisdiction (hence land use rights) was to stay with the administrative unit where the land originally laid. This was the case even though land had moved to be

⁶ Between 1942 and 1945, the empire of Japan occupied Burma. In 1945, the country was placed under British colonial administration until it gained independence on January 4th, 1948. The Anti-Fascist People's Freedom League (AFPFL) controlled the government during the first ten years of independence, later replaced by a military caretaker government (1958-60). The year 1960 marked the return to civilian rule under U Nu until the military coup of 1962.

⁷ The term *ne-ni-meik* in Burmese can be translated both as boundary and territory.

geographically located in another administrative unit. In case of gradual erosion and land "reappearing" in another administrative unit, then jurisdiction over alluvial land management was to be granted to the administrative unit where land "reappeared" regardless of previous jurisdiction. The terms "identifiable" and "re-appearing" are used as such in the Burma Land Revenue Directions of 1911 (GoBB 1945: 97) without being further explained. It becomes clear that the rules, only to be used where local arrangements had not been devised, offer significant scope for interpretation notably regarding the extent to which, and ways in which, land that shifts position and shape remains "identifiable" or not. This issue is still of importance today and it is not uncommon that villagers use the same name to designate land that shifts and changes over time to argue that such land is indeed identifiable, which gives weight to certain claims (see case study 1).

The Land Revenue Directions of 1911 remained the main legal framework to adjudicate alluvial (is)lands disputes from the country independence in 1948 to the military coup of General Ne Win in 1962 (U Maung Maung Nyunt 2018; U Zaw Min 2019).

Changing rules in the Socialist Military Period (1962-1988)

The 1963 Tenancy Law and its bylaw 16 brought significant changes to the management of alluvial land. These included (1) changes in the terminology used to designate alluvial land; (2) replacing the "deep-water channel rule" by the "nearest village rule", which led to (3) the dissociation of jurisdictional management and the allocation of land use rights; and finally (4) the introduction of socio-economic criteria to determine eligible villages and households for land allocation, which could outweigh the nearest village rule (GoB 1963 and 1970; U Zaw Min 2019). Village tract and township level authorities were (and continue to be) the main stakeholders as far as alluvial land allocation was concerned together with the Settlement and Land Records Department (now Department of Agricultural Land Management and Statistics, DALMS) (see Figure 3).⁸

- *Definitional aspects:* the 1963 Tenancy bylaw uses the terms of *myei-nu'* and *myei-yint* but in a slightly different way than earlier (U Maung Maung Nyunt 2018). Only the term *myei-nu'* (non-permanent) is used to designate alluvial land. The term *myei-yint* is used to designate alluvial land that has become "permanent" (*khaing"mye lar-taw-myei*) and, in the process, has 'stopped' being alluvial, at least formally. Alluvial land (*myei-nu'*) is subject, at least in theory, to annual reallocations. *Myei-yint* on the other hand is to be administered as land on the mainland (*myei-ma*, as was the case during the British period). The Tenancy bylaws did not provide guidelines to differentiate between the two types of land, but bylaw 16 insists that land department agents continue demarcating these on maps. In practice, a specific piece of alluvial land (*myei-nu'*) was considered to have become permanent if plot boundaries were still identifiable after flooding.
- *Introducing the nearest village rule (ni"sat-ni"kat):* when alluvial land emerged, administrative authorities measured the distance between the fence (*ywa-si yoe*) of each village site in the vicinity and the extremity of the land that had emerged. Land was then to be allocated to residents of the nearest village site. Determining which village-site was the nearest was, however, not straightforward as the rule offered ample room for interpreting what constituted "new land" and what land had to be considered when measuring distances. Whether alluvial land that had become permanent in previous years – *khaing"mye lar-taw-myei* – had to be accounted for when measuring the distance was the subject of disputes. Practices varied widely across time and place, often reflecting local arrangements between some residents and land official departments in charge of measuring and demarcating the land. The introduction of this

⁸ In 1972, the district administration was abolished, leaving no intermediary between the township and the regional level (Taylor 1987: 314). The district administration was revived under the SPDC (1997-2011; see below). Such administrative changes had consequences on the way alluvial land disputes were handled but this is beyond the scope of this article.

rule made the establishment and official recognition of village sites particularly strategic to lay claim on specific alluvial (is)lands (see case study 3).

- The introduction of the nearest village rule led to a *de facto* dissociation between jurisdictional land management and land use rights. Villagers who were granted land use rights (*lok-kaing-kwin'*) could belong to a different village tract than the one having jurisdiction over the area according to administrative maps. For instance (second case study), when land appeared along the riverbank, in the administrative territory of a given village tract, insular village-sites that belonged to another village tract could be closer to that land than riverbank village sites. This was and continues to be a source of conflicts as having administrative jurisdiction on land is often understood as a form of entitlement by cultivators.
- *The introduction of socioeconomic criteria:* the nearest village rule was constrained by the consideration of socioeconomic criteria on the basis of which land was also meant to be distributed. Village tract authorities that supervised land allocation demarcated and distributed plots according to lists (*tan"si-za-ya"*) provided by relevant village(s) (some of which may thus belong to other village tracts – see above). Land distribution was meant to benefit landless farmers, agricultural laborers and coolies from the nearest village-site, based on a lottery system.⁹ However, the situation of cultivators receiving land had to be equivalent to what was estimated as the average economic level of cultivators in the area (GoB 1962).¹⁰ If land allocation created an imbalance whereby cultivators from the nearest village would have significantly higher cultivable land per capita, then the extra land had to be allocated to cultivators from the second nearest village, and so on.¹¹ U Zaw Min (2019) noted that this was sometimes ignored. Instead of being allocated to the second nearest village, "extra land" was for instance categorized as "village fund" land and access informally granted to people who were not included in the allocation lists (see footnote 5 and Ivars 2020). As had been the case during the British period, cultivators benefitting from land allocation a given year generally benefitted from similar allocation in subsequent years.

The State Law and Order Restoration Council (SLORC) (1988-1997) and the State Peace and Development Council (SPDC) (1997-2011)

The period of the SLORC/SPDC military regime has been characterized by large scale land confiscation processes (Hudson-Rodds and U Sein Htay 2008; Ivars and Venot 2020; U San Thein *et al.* 2018). This also concerned alluvial land (Displacement Solutions 2015: 56; South and Katsabanis 2007: 49).

The rules and regulations inherited from the 1963 Tenancy Law were applied selectively. Uncertainties that prevailed under the socialist regime concerning the identification of jurisdiction and the allocation of land use rights remained. Village tract and township administrations could collude with land record officials to allocate land to powerful local figures or entrepreneurs, including outsiders, in exchange for commission fees. This was notably made possible by classifying alluvial land as "village fund" or "township fund" land.

⁹ Soil quality varies on alluvial (is)lands. The lottery system was meant to ensure a form of justice (through uncertainty) among potential beneficiaries of land allocation. In practice, however, powerful individuals often managed to be allocated the most productive plots by paying extra fees to the authorities in charge of the allocation. In other cases, there was simply insufficient land to allocate, something that also justified the use of a lottery system.

¹⁰ This was measured as the available (rice equivalent) cultivated land per household.

¹¹ In theory, well-off farmers were excluded from land allocation so as to narrow the income gap within a village. However, our interviewees indicate that large land holders still benefited from land allocations.

Myanmar quasi-civilian governments (2011- today)

The 2012 Farmland Law and Rules draw extensively on the 1963 Tenancy Law and bylaws (GoM 2012a, b). Most often, land allocation is handled by village leaders and officers of the DALMS even though the Township level Farmland Administration Body (FAB) officially oversees land allocation.¹² In case of disputes between two administrative units, the higher administrative level is in charge of field investigation (e.g. the district handles disputes between villages from two townships). The regional/state and central level FAB have decision-making authority although, in practice, decisions are often taken at lower administrative levels.¹³

The 2012 Farmland Law and Rules, however, introduced a significant change. It made it possible for cultivators to receive land titles, known as Land Use Certificates (LUCs or Form-7), for "permanent" agricultural land. In contrast, alluvial land is considered to be non-permanent and remains under the authority of the State, which can redistribute it on a yearly basis. Still, farmers receive temporary land use rights, which are registered by the Township FAB into a list called form-17. As was the case during the socialist period, the fact that alluvial land can "turn into" permanent land (hence become eligible to LUCs, equivalent to permanent land use rights) is, however, envisioned by the law. This created the scope for new conflicts regarding the demarcation between permanent and non-permanent land.

In recent years, the Ministry of Agriculture Livestock and Irrigation (MoALI) has issued letters instructing land department officials to systematically identify the boundary between alluvial land that has become permanent (*myei-yint*) and non-permanent alluvial land (*myei-nu'*). This has become crucial as the law mentions that permanent land (*myei-yint*) shall not be considered when measuring the distance between village-sites and new land when implementing the nearest village rule (U Aye Win Oo 2018). Yet, the law does not provide any specifications on the ways to distinguish permanent (*myei-yint*) and non-permanent alluvial land (*myei-nu'*). Finally, the law specifies that the socio-economic conditions of the eligible villages are to be taken into account when allocating land, but it does not provide further specification on how this is to be done. Overall, like its predecessors, the 2012 Farmland Law offers much scope for interpretation, hence a potential for local arrangements but also new conflicts (GRET 2020; U San Lwin Oo 2019).

In February 2020, The Law Amending the 2012 Farmland Law (No.2/2020) was enacted. It paves the way for what could be a major change in alluvial (is)lands management. Article 7 notably mentions that alluvial land (*myei-nu'kyun'*) shall be distributed according to administrative boundaries rather than according to the nearest village rule. How this will translate in practice remains to be seen, however, as ever-shifting resource making strategies shape alluvial (is)land management as much as institutional frameworks may (see below).

¹² The FAB is composed of representatives from the Ministry of Agriculture Livestock and Irrigation and from the General Administration Department at the relevant administrative level. The Ministry of Transport and Communications (MoTC) also has jurisdiction over riverbank boundaries and alluvial islands under the Conservation of Water Resources and Rivers Law of 2006 (for preventing erosion of villages and towns).

¹³ Township and higher level FABs handle land dispute cases and take decisions in coordination with village tract FABs. The latter are made of the village tract administrator, the General Administration Department (GAD) clerk, the DALMS clerk, and two village representatives (on the structure of the administration, see Kyi Pyar Chit Saw and Arnold 2014).

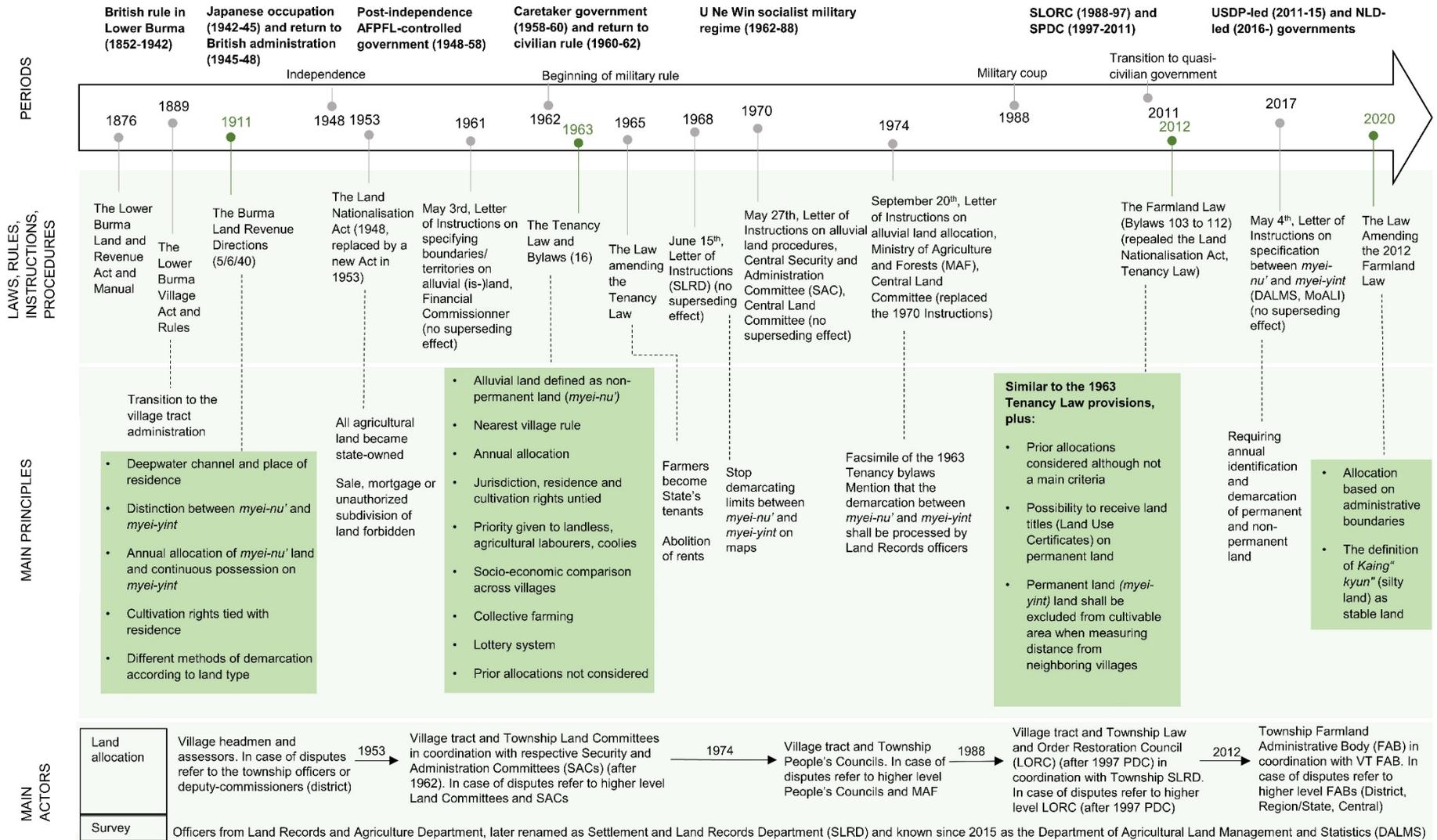


Figure 3: Main legal provisions for alluvial land management since the introduction of British rule in Lower Burma (1852- today).

4. Claiming alluvial land: volatile socio-material configurations

Thet Ket Kyun and Yei Paw Thaung: contesting the rule of the 'river between us'

The first case study illustrates the challenges faced by residents who live and cultivate land appearing in the middle of the river (a type of land known as *yei-le-kyun* "myei"). It also exemplifies discussions around the implementation of the thalweg (deep water channel) boundary rule between two regions.

Until the 1980s, most villages in Yei Paw Thaung Village Tract lived and cultivated a large alluvial island called Yei Paw Thaung Kyun Ma Gyi (Figure 4 right panel). At the time, the island was located in the Zalun Township in the Ayeyarwady Region. The main channel of the Ayeyarwady River that flowed west of the island served as a boundary between Yei Paw Thaung Village Tract and other villages tracts of the Ayeyarwady Region.

This river stretch is particularly dynamic with several river channels that can be disconnected from each other during the dry season. An historical analysis of Landsat images shows that, from the mid-1990s onwards, the large Yei Paw Thaung Kyun Ma Gyi Island progressively "drifted" in a westerly direction. During this "(is)land drift", the northern and eastern sides of the island were progressively eroded. At the same time, an island locally called Yei Le Kyun (literally: the island in the middle of the water) emerged between Yei Paw Thaung Kyun Ma Gyi Island and the right riverbank. As sediments deposited in the thalweg, the Yei Le Kyun Island eventually merged with the right riverbank in the early 2000s. Later, in the mid-2010s, what remained of the Yei Paw Thaung Kyun Ma Gyi Island also merged with the right riverbank, further south west. (see <http://deltasoutheastasia-doubt.com/2020/02/08/animation-myanmar>).¹⁴

Some residents of Yei Paw Thaung who had lost land or had to move their dwellings due to erosion claimed access and used land on Yei Le Kyun Island. Rather unproblematic at first, these claims were challenged by residents of two village tracts located on the right riverbank (Thet Ket Kyun and Kyar Inn), especially after Yei Le Kyun Island merged with the riverbank in the 2000s.

Residents of the different village tracts justify their claims on multiple grounds. Denominating land as "Yei Le Kyun" is, in itself, a way for Yei Paw Thaung villagers to legitimize their claims. The name indeed echoes that of ancient alluvial (is)lands they used in the middle of the river. It is meant to indicate this is land they have used in the past (though it might have disappeared and reappeared in a different place). They also argue that the land they claim is located east of the boundary between their village tract and the right riverbank village tracts. This is disputed by villagers of the latter, who consider this border to be located further east (Figure 5, right panel).¹⁵ Villagers of Thet Ket Kyun, on the other hand, call the land differently and argue that it has appeared as an extension of the riverbank as opposed to being an island that would have drifted. They also argue that their village-site is closer to the disputed land.

¹⁴ As in the two other case studies, we only describe geomorphological dynamics that we can relate to competing claims assessed through interviews. Socio-material reconfigurations observed in the area are much broader in scope.

¹⁵ Interviewees mentioned that this border was a northeast-southwest straight line drawn between two trees on opposite riverbanks, which makes it open to interpretative flexibility.

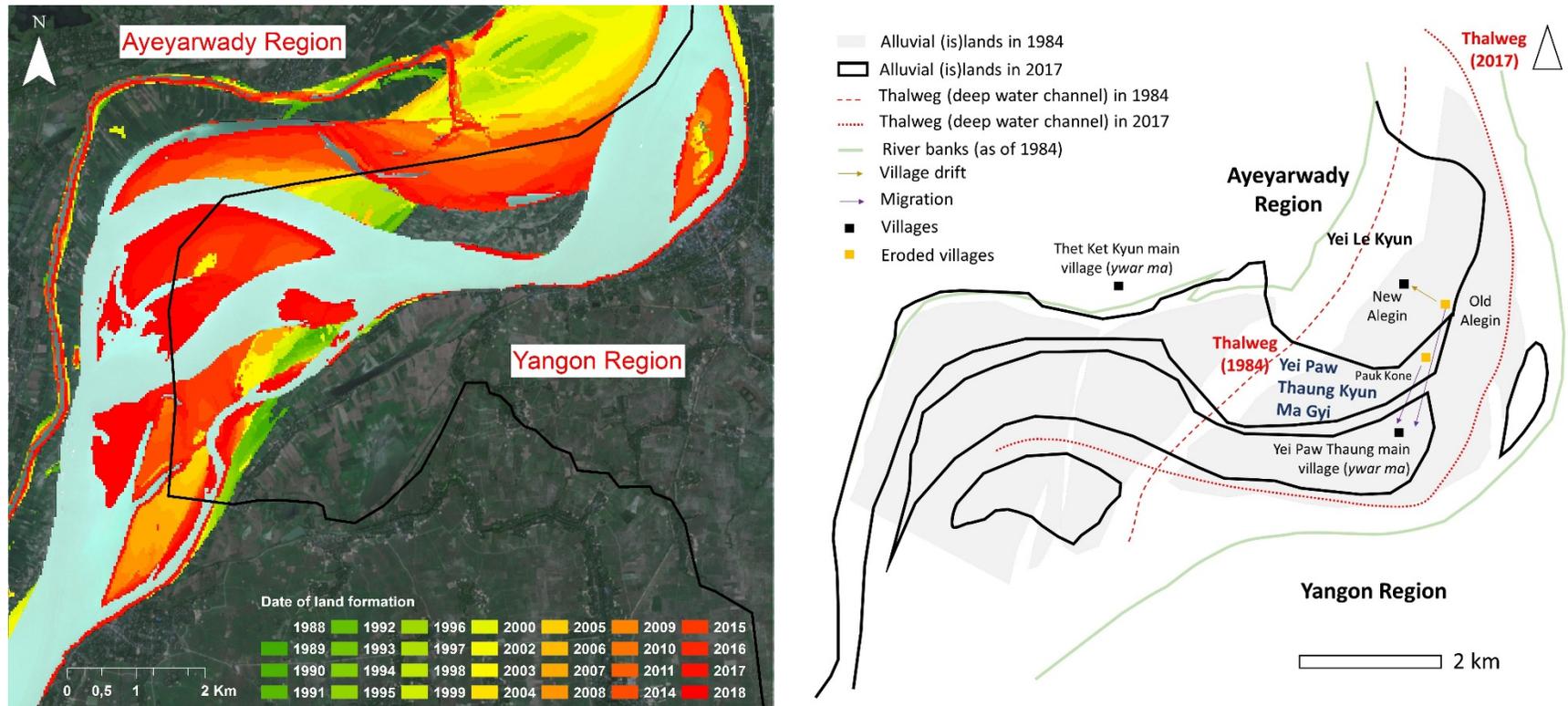


Figure 4: (Is)lands dynamics and disputes: Thet Ket Kyun versus Yei Paw Thaug (source: the authors; Image Sentinel 2; 5 February 2018).

Resolving the conflicts was made even more complex in the early 2000s as the boundary between the Ayeyarwady and Yangon Regions was re-drawn along the thalweg of the Ayeyarwady River. As a consequence, the Yei Paw Thaug Village Tract (and others) was put under the jurisdiction of Taikkyi Township in Yangon Region (it had been part of the Ayeyarwady Region before).¹⁶ The disputed land was located in the Ayeyarwady Region. The regional State Peace and Development Council (SPDC) allocated a large portion of it to residents of Thet Ket Kyun and Kyar Inn villages tracts (around 400 and 500 acres respectively - 162-203 ha.) (Figure 5; right panel). Farmers from Yei Paw Thaug were allowed to access (less fertile) sandy land located, in the continuity, further east. This did not end the disputes, because land continued to emerge while Yei Paw Thaug Kyun Ma Gyi further eroded in the east. In 2004, the two regional authorities reached a new agreement to allocate 286 acres (115.75 ha) of land to Yei Paw Thaug residents for a period of three years (from 2004/2005 to 2006/2007; see Figure 5; right panel). This type of arrangement was not envisioned under the legal framework of the time. According to some interviewees, this temporary land allocation was justified by the fact that Yei Paw Thaug Village Tract (and notably residents of Aletin and Pauk Kone villages) had been significantly impacted by erosion and economically impacted by it. The village tract authorities of Thet Ket Kyun used the fact that they had jurisdiction over land to collect "rental fees" from Yei Paw Thaug farmers willing to cultivate the land. In 2007, cultivators from Yei Paw Thaug did not return the land. This was justified by the president of Yangon North Region SPDC when he stated that:

Erosion occurs in Yei Paw Thaug, and the cultivable area is decreasing. Returning the (conflicted) land (to Ayeyarwady Region) would create disparities. Discussions should be made not by looking to the policy but by considering the conditions of people. (GoM 2007; Authors' translation)

Some of our interviewees further stated that land had not "fully appeared" during the three-year period and that they had not been able to cultivate it because of physical threats by residents of Thet Ket Kyun, thus justifying their argument that they could continue cultivating as land allocation had been granted for 3 years.

The two regional authorities eventually agreed to re-allocate half of the disputed land to Thet Ket Kyun Village Tract in 2007/2008 and the other half the following year. However, villagers from Yei Paw Thaug continued to hold on to what they perceived as "their" land, triggering violent conflicts. In the early 2010s, the conflict further escalated as both regional authorities sought to respond to the demands of their respective constituents. The Ayeyarwady Region distributed Land Use Certificates on land emerging in connection with the disputed area, even though Yei Paw Thaug villagers considered the emerging land was not "permanent". The General Administration Department (GAD) of the Yangon Region, on the other hand, supported the request and grant of new village land to residents of Aletin in the disputed area, even though it had no jurisdiction. They justified it on the grounds that Aletin village had lost land due to significant erosion since the 1980s. This resulted in strengthening the claims of Yei Paw Thaug Village Tract residents over the disputed land, as they could use the argument of proximity (*ni'sat*) between their (new) village-site and the disputed land. Following demands from Thet Ket Kyun villagers to re-specify the boundary between the Ayeyarwady and Yangon Regions, officials from the Settlement and Land Records Department (SLRD, now DALMS) conducted further field investigations in 2013. They determined that the disputed land was located west of the regional boundary (as drawn in the early 2000s), hence confirming that the Ayeyarwady Region had jurisdiction (MoAI 2013). However, as Yei Paw Thaug, now administered by Yangon Region, continues to drift westwards and to merge with the right riverbank, its villagers get closer to the disputed land. Conflicts are likely to endure as recent rulings and practices appear to be at odds with each other, and justified on competing – yet legal – grounds.

¹⁶ Until then the border between the Yangon and Ayeyarwady Regions was located east of the river.

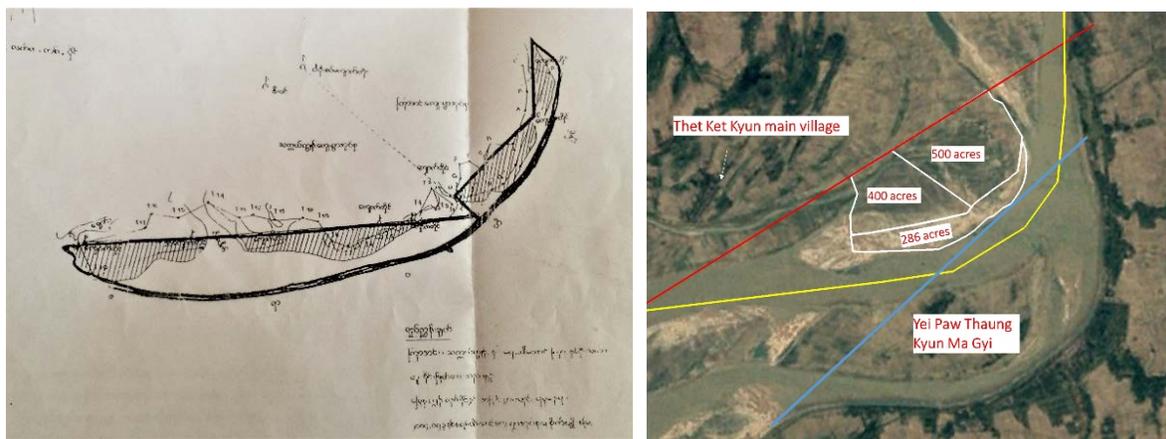


Figure 5: The 286 acres (115.75 ha) disputed by residents of Yei Paw Thauung and Thet Ket Kyun. The left panel map has been produced by the Settlement and Land Records Department (SLRD, now DALMS). Note: The hatched area on the left panel shows land cultivated by Yei Paw Thauung residents in 2004/05 and claimed by inhabitants of Thet Ket Kyun. The white area within the crescent shaped black outline shows sandy land that is not yet cultivated. On the right panel, the red and blue lines represent the boundary between village tracts as seen by Yei Paw Thauung and Thet Ket Kyun residents, respectively. The yellow line is the administrative regional boundary; the white lines show land allocated to different villages tracts, the most southern one corresponding to the crescent shaped black outline on the left panel (source: left panel: government map collected from villagers; right panel: the authors, based on interviews and consultation of official maps; google earth image of December 2004 in the background).

Dhamma Thu Kha and Nyaung Waing: contesting the nearest village rule

The second case study illustrates conflicts that emerge in relation to the application of the nearest village rule in a river stretch where the main channel of the river widens and significant accretion and sedimentation has occurred over the last 30 years. An historical analysis of Landsat images shows the progressive disappearance of the Shwe Din Gar Kyun Island in the south-west of the study area (see figure 6, left panel). Simultaneously, sediments have progressively accumulated around a small island in the main channel until a large land mass stabilized and progressively drifted eastwards in the mid-2000s, almost completely merging with the left riverbank (<http://deltasoutheastasia-doubt.com/2020/02/08/animation-myanmar/>).

Until the late 1980s, the village of Dhamma Thu Kha that falls under Tha Byu Yei Le Kyun Village Tract in Nyaungdone Township was located on an alluvial island known as Shwe Din Gar Kyun, lying along the right riverbank (see figure 6, left panel). Due to the island's progressive erosion, a large number of residents lost their agricultural plots, and in some instances, their homes. At the same time, another island in the middle of the river increased in size and was first claimed by residents of villages located on the left riverbank.

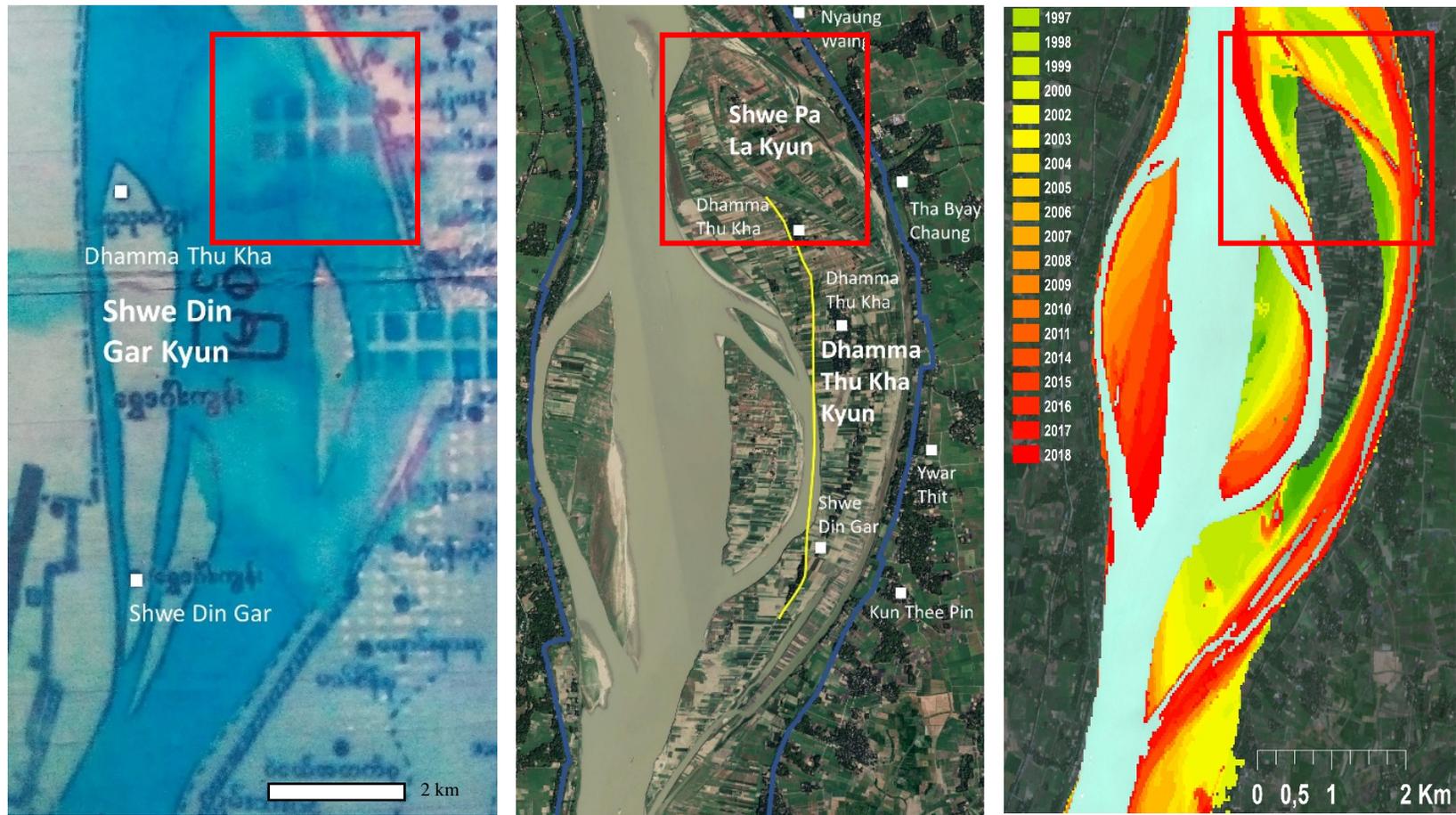


Figure 6: Shifting (is)lands. Note: the left panel is an official settlement map dating from the 1970s used by Nyaung Waing farmers to support their claims (map collected from villagers); the middle panel shows the location of village settlements as per 2020 (image Google Earth, January 2020); the right panel shows the date at which specific terrain was formed (source: the authors; background image, Sentinel 2, 5 February 2018). The red square shows the area discussed below.

The leaders of Dhamma Thu Kha made an official request to access part of the newly emerging (is)land in the middle of the river in the late 1980s, arguing that they were affected by erosion, and that there was a larger number of landless cultivators in their village. In 1991/92, the Township authorities responded favorably to their request and drew a line west of which all land that appeared was to be administered by Tha Byu Yei Le Kyun Village Tract (see yellow line in figure 6, middle panel). Dhamma Thu Kha villagers further obtained new village land (*ywa-myei*) from the township authorities. They build two distinct village settlements and lived permanently on the island (until then, villagers from the left bank had only cultivated on the island).¹⁷ This led the island to be known as Dhamma Thu Kha Kyun (figure 6, middle panel). The new village sites, however, were located east of the demarcation line (see figure 6, middle panel). Our interlocutors from Dhamma Thu Kha explained this was because land there was more elevated and provided a safer place to establish a settlement (the right panel of Figure 6 shows that the village settlements have been established on land that had existed for a long time, hence is more elevated). When residents of Dhamma Thu Kha started building their houses, this led to disputes. Some farmers from Tha Byay Chaung village on the left riverbank did not recognize the agreement their leaders had reached with leaders of Dhamma Thu Kha village. In addition to the direct appropriation of land, what was at stake was the fact that establishing their settlement on the (is)land could provide Dhamma Thu Kha residents an opportunity to claim land that could emerge in the vicinity in the future, on the grounds of the nearest village rule.

From 2001 onwards, farmers from yet another left bank village, Nyaung Waing, laid claim on land that started to emerge north of Dhamma Thu Kha Kyun. At the time, this did not trigger any conflict with farmers from Dhamma Thu Kha. The latter had access to sufficient land elsewhere. The situation changed in 2013/14 as the Village Tract Administrator of Nyaung Waing and other residents who had close ties with him received Land Use Certificates (LUCs) over a total area of 149 acres (60 ha., see green area in figure 7). At the same time, residents of Dhamma Thu Kha laid claim on land that appeared to the west, contiguous to these 149 acres. Landless and smallholders from Nyaung Waing who had been excluded from previous allocations and did not receive LUC questioned the right of Dhamma Thu Kha villagers to cultivate that land.

Village leaders of Dhamma Thu Kha argued that their village site was closer to the coveted land than Nyaung Waing village site and that land would be reclaimed by landless residents. In 2014, the Township authorities agreed to allocate 60 acres (24 ha.) of land to Dhamma Thu Kha (pink area in Figure 7) but when land actually appeared in October, farmers from Nyaung Waing quickly cleared and started cultivating it. After complaints from Dhamma Thu Kha, the Township authorities instructed the residents of Nyaung Waing to return the land. The following year, a similar dispute arose, this time, regarding the access to 80 acres (32 ha.) of land located further north (yellow area in Figure 7). Our interviewees from both sides accuse each other of crop destruction, physical violence and threats. In an effort to appease the tensions, the Township Farmland Administration Body in charge of solving land disputes, decided to allocate half of the 80 acres (32 ha.) to each village in 2016. On paper, it justified this decision by the fact that the distance between the two village sites and the disputed land was identical. Claimants in Nyaung Waing, however, continued to contest the legitimacy of Dhamma Thu Kha's claims on the ground that their original village was located on the other side of the river. One of our Nyaung Waing interviewees showed us a large printed map from the socialist period (left panel of figure 6), stating:

Look at their original village on the other side of the river. They just came here, built their houses and grabbed the land [...] Our village has a history, our monks had brought four bells from Britain under Konbaung time¹⁸, but, them, they don't have history. [...] They are only switching from one bank to another.

¹⁷ Though owned by farmers from villages on the left riverbank, land on Dhamma Thu Kha Kyun Island was largely cultivated by Dhamma Thu Kha residents as left bank villagers mostly focused on rice cultivation east of the river.

¹⁸ The Konbaung dynasty was the last dynasty that ruled Burma/Myanmar from 1752 to 1885.

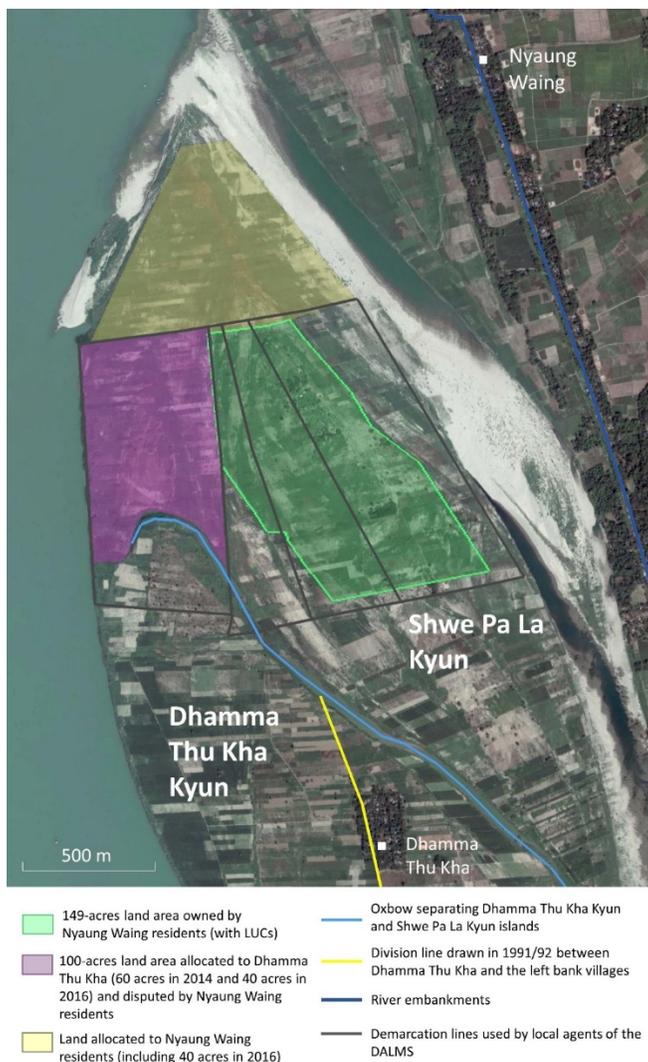


Figure 7: Disputed (is)lands by Nyaung Waing and Dhamma Thu Kha residents (image Google Earth of April 2016). Source: the authors, based on interviews and consultation of official maps.

By June 2019, Nyaung Waing residents continued to contest administrative decisions. Some inhabitants demonstrated together with farmers from other villages in the Township and with the support of a national Non-Governmental Organization. They cleared the grass that had grown during the rainy season on the disputed land allocated to Dhamma Thu Kha and symbolically spread seeds on the land. They also set up sign posts along a dead arm of the river that they considered to be the "true" border between the two villages, which if considered would strengthen their claims (blue line in Figure 7 and Figure 8).



Figure 8: One of the signposts set up by Nyaung Waing residents in June 19th, 2019. The sign states that the land standing beyond it is Nyaung Waing's ancestral land: Source: the authors.

Pyitawtha and Htone Wa: jurisdiction over versus dependency on alluvial (is)lands

The third case study illustrates conflicts that arise between two villages located in different Townships of Maubin District in the Ayeyarwady Region. Conflicts relate to the allocation of land across administrative boundaries, as residents of alluvial villages are impacted by erosion.

The villages are located in a river stretch where the Toe River branches out from the Ayeyarwady mainstream, forming one of the main bifurcations of the delta. An analysis of Landsat images shows that this is an extremely dynamic area that has been subject to erosion. This is particularly true along the left riverbank where embankments have been progressively washed away, leading to the displacement of several villages further inland. Sedimentation and erosion seem to follow a cyclical rhythm over a period of twenty years. Sandbanks first emerge along the right riverbank in the north of the area, and then consolidate to form an (is)land in the middle of the channel called Kat Tha Win-Gan Chaung Island. The (is)land progressively drifts south until it merges with the land mass separating the Toe and Ayeyarwady rivers, forming a wide peninsula. The latter then gets eroded on its north-western and south-eastern side, while progressively "rotating" (<http://deltasoutheastasia-doubt.com/2020/02/08/animation-myanmar/>). The following case describes the dynamics of access and use of land on the south-eastern shore of the peninsula and conflicts between the village of Pyitawtha (in Pantanaw Township) and the village of Htone Wa (in Nyaungdone Township).

In the 1990s, residents of Pyitawtha village lived and cultivated land on Kat Tha Win-Gan Chaung Island (see left panel of Figure 9). Progressively, as the island expanded and drifted south, residents of Htone Wa, a left bank village affected by erosion, also laid claim on the island. This led to serious disputes between the two villages. At the time, the issue was to determine whether land that keeps expanding in the middle of the river was "new" or whether it had already been cultivated and reappeared in another form. Officially, this indeed determined how land should be allocated as no local arrangements had been found. As stated by an official of the Settlement and Land Records Department (SLRD, now DALMS):

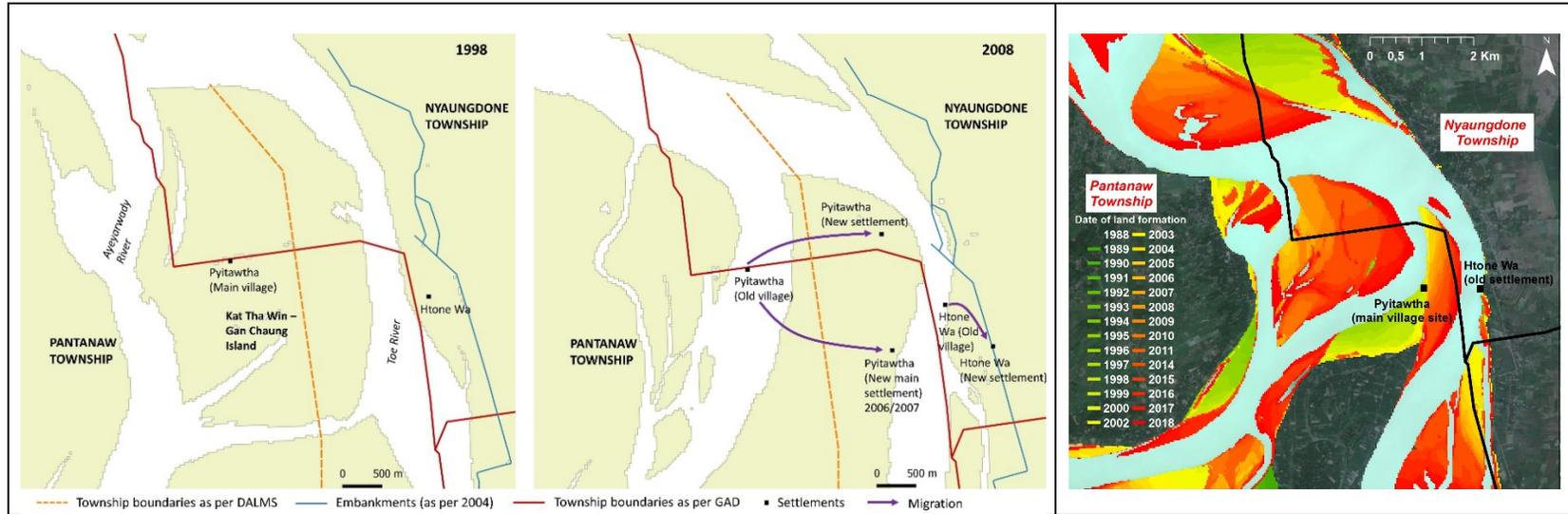


Figure 9: (Is)lands dynamics and disputes: Pyitawtha *versus* Htone Wa (source: the authors; Image Sentinel 2; 5 February 2018). Note: in the legend, "township boundaries as per GAD" shows the official boundary lines as retrieved from MIMU (<https://geonode.themimu.info/>). "Township boundaries as per DALMS" shows the lines on maps used by DALMS agents to physically delineate land. Again, the different maps we were granted access to showed different boundary lines, paving the way for different interpretations, hence contestation.

It is necessary to conduct new field measurement. It would only be fair if the officers in charge of distinguishing the part of myei-nu' [non-permanent] and myei-yint [permanent]. The land which has been cultivated for four or five years now should be considered myei-yint, and land that has appeared later should be considered myei-nu' and hence allocated (authors' translation from GoM 1999).

In 1999, the Maubin District SPDC ruled that land should be allocated according to township boundaries, and considered the boundary used by the Settlement and Land Records Department (SLRD, now DALMS) (yellow line in Figure 9) to do so. SLRD officers divided the concerned land in ten "columns" of similar width (see figure 10). The five westernmost columns (A to E from west to east) were allocated to Pyitawtha in Pantanaw Township and the other five columns (F to J) to Htone Wa in Nyaungdone Township.

According to our interviewees in Pyitawtha, by 2003, land in columns A and B had already eroded. Because of this, and because their village was further threatened by erosion, residents of Pyitawtha applied to the district SPDC to access new land that had appeared east of Column J. The district SPDC responded positively to their request and they received a total of 80 acres (32 ha.) in what officially constituted "Column K" (see figure 10). This decision was violently contested by some residents of Htone Wa. They argued that the column was located east of the administrative boundary that had been used previously for land allocation and that their village was also affected by erosion. This led to the intervention of the police and the Township and District authorities. Our interlocutors in Pyitawtha argued their case by saying that they live and depend on alluvial land unlike their neighbors in Htone Wa who, they say, are rather protected from erosion as they live on the riverbank.

In 2014/15, the conflict between the two villages was rekindled, as further land in Column K appeared (see orange patch on Figure 10, left panel). Arguing that the earlier allocation of land in column K granted them access rights to the newly emerged land, residents of Pyitawtha started cultivating it. They considered they had the agreement of the DALMS of the Pantanaw Township. The latter, however, had no jurisdiction on such land located in the Township of Nyaungdone. In 2016, the Village Tract Administrator of Gan Chaung (that includes Htone Wa village), together with the Nyaungdone Township DALMS, listed all farmers cultivating the land that had emerged. They reported them as trespassers in order to open the way for land to be later granted to Htone Wa residents. Pyitawtha village leaders retaliated by drawing up a counter-inventory that listed the Htone Wa residents who had rented or sold land in the F to J columns to Pyitawtha farmers. This was an attempt to further their claims by highlighting the lack of interest in alluvial land by Htone Wa villagers for. In 2017, the district level FAB stated that the nearest village rule should be followed and, accordingly, allocated part of the land that had appeared in the continuity of column K to Pyitawtha for agriculture, and the remaining to Htone Wa as village land. This decision is likely to foster new disputes between the two communities since the allocation of village land will help Htone Wa residents to claim land more easily (again, on the basis of the nearest village rule).¹⁹ Land that had appeared in continuity of columns L to N further east (see yellow area on Figure 10) was allocated to Htone Wa without this raising further issues.

¹⁹ Allocation of village land is a key dimension of disputes over alluvial (is)lands. Eroded villages are sometimes rebuilt on sites that are not officially registered as village land. Whether these village-sites are considered as part of the application of the nearest village rule remain to the discretion of officials in charge of land allocation (U San Lwin Oo 2019). The law remains opened to interpretative flexibility and opens the way for diverse practices.

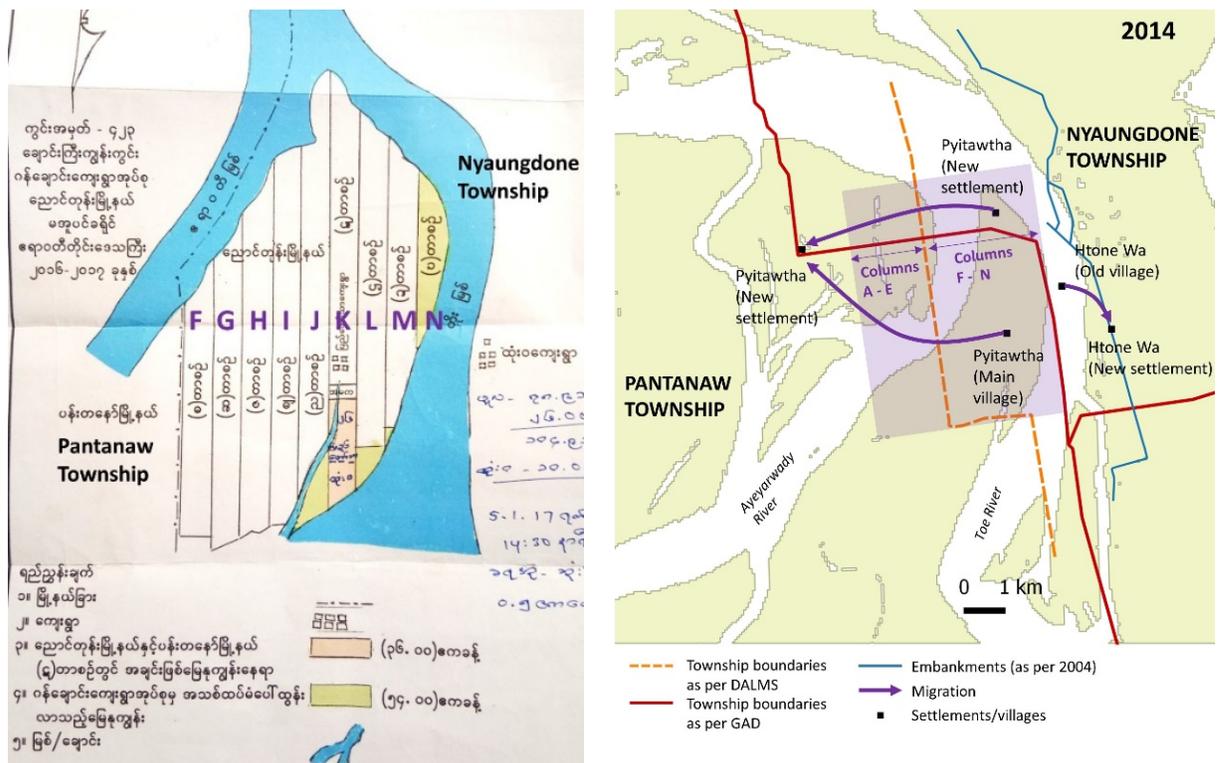


Figure 10: Allocating land in columns. Note: on the left panel the township boundary is indicated in a dotted line. The orange area shows land claimed by Pyitawtha from 2014 onwards. The green area shows land allocated to Gan Chaung Village Tract.

5. Discussion: making alluvial (is)lands

The three case studies cursorily described above are but mere illustrations of the complex socio-material processes through which alluvial (is)lands in the Ayeyarwady Delta come into being. Multiple discourses and principles to justify access claims and practices cut across the three case studies and are probably present in many others. They are summarized in Table 1 alongside the inscription devices that support them. These constitute multi-faceted resource making strategies through which the volatile materiality of alluvial (is)lands is "made", literally and figuratively. These are often used in conjunction with or in opposition to each other by multiple actors.

A first way to justify and legitimize specific claims to access and use alluvial (is)lands stresses the dependency and vulnerability of (is)lands dwellers. In each situation we documented, some villagers identify themselves as residents of alluvial villages, that is, as villagers who exclusively use *myei-nu'* (non-permanent) land and live in village settlements located on (is)lands in the middle of the river. This is to better highlight their greater vulnerability as compared to residents of riverbank villages. Residents of alluvial villages stress that they are subjected to environmental dynamics they have no control over. They highlight they are forced into repeated migration as (is)lands constantly change shape and position. They also express that they face dramatic losses as cultivated land and dwelling are washed away due to erosion. By highlighting their vulnerability and dependency on non-permanent alluvial (is)lands as well as the dramatic losses they incur, they seek to strengthen their claims to newly emerging land on which they will depend for their survival. To further their claims they also call upon some of the provisions of the 2012 Farmland Bylaws, that state that socioeconomic criteria should be considered for land allocation. Further, they give a tangible and material form to such claims

when establishing the list of landless people in their village and putting forth a relatively lower than average landholding per capita –as compared to other villages.

Discursive justifications	Underlying justification principles	Inscription devices
"We need land for our survival"	Precariousness of the inhabitants of alluvial villages (<i>myei-nu'kyun" tha"</i>) and their exclusive dependency on alluvial (is)lands on which they also depend for basic access to education and religion for instance.	Images, videos and material traces of erosion; list of households who have to buy or rent land, average size of cultivated land per household and ratio of landless household in the village.
"There are more landless in our village"	Poor economic conditions justify land allocation. This is a provision of the 2012 Farmland bylaws.	List of households who have to buy or rent land, average size of cultivated land per household and ratio of landless households in the village.
"We lost our land due to erosion"	Losses should be compensated. The argument links economic consideration to issues of equity.	Images, videos and material traces of erosion; old settlement maps; official letters and reports.
"We were the first to clear and occupy the land"	Prior appropriation, justified on the ground of investment (in time and effort) of early settlers (<i>lek-u"mu</i>).	Traces of land clearing and cultivation (huts, crops, etc.).
"We have received a right to use land the previous year"	Prior appropriation, justified by previous yearly official allocation.	Official records of previous land allocation; previous attribution lists.
"This land has already been distributed"	Prior appropriation, justified on the ground official decisions that may have been taken years or decade earlier and that are supported by official documents.	Official letters; land allocation or attribution lists (<i>tan"si-za-ya"</i>).
"This land is closer to us"	Proximity to new emerging land (<i>ni"sat-ni"kat</i>). This is a provision of the 2012 Farmland bylaws (the nearest village rule).	Official letters; settlement and land allocation maps.
"This is permanent land" "This is non-permanent land, so it should be reallocated"	(Re)allocation (or not) of land hinges on its categorization (<i>myei-nu'</i> or <i>myei-yint</i>).	Land titles (LUCs); tax receipts; official letters.
"The land falls within our administrative territory"	Administrative jurisdiction and boundaries are what determines access right. This is a provision of the 2020 Amending Law.	Trees and other landmarks; administrative maps, official letters.

Table 1: Making alluvial (is)lands: discourses, principles and inscription devices.

Another way access claims and practices are justified is by resorting to the principle of prior settlement and appropriation. This is clearly encompassed in the widely used Burmese expression *lek-u"mu*, which translates as "jumping ahead of others". In a context where adjudication by relevant authorities often takes time and re-allocation within a given cultivation season is nearly impossible, preemptive occupation and cultivation of land (with or without informal agreement from local authorities) has long been, and continues to be, an effective strategy to gain temporary, although precarious access to land. This is not only a short-term strategy as prior access and use of (is)lands, even if temporary, is then commonly used to argue for official annual or long-term land allocation. Apart from preemptive physical occupation, "jumping ahead of others" can also take the form of seeking land allocation from administrative authorities. Here the making of alluvial (is)lands becomes an anticipatory strategy based on an in-depth understanding of sand and grass dynamics and the potential and likelihood of future sedimentation and accretion. Seeking village land allocation is central to such anticipatory and partly speculative strategies. It may indeed support future claims on land as it progressively emerges and stabilizes, notably on the basis of the legally sanctioned nearest village rule. Coordinating with local authorities and DALMS agents, villagers may even elaborate distribution lists for land that has not yet appeared. Such paper allocation allows them to claim a right to land, when and if it emerges (Ivars 2020).

These are not only "vernacular" resource making strategies, because they also make use of possibly conflicting legal considerations such as the *thalweg* and nearest village rules, and of official administrative boundaries that are sometimes used for adjudication. This is where inscription devices such as administrative documents and maps acquire a crucial importance as they are used to legitimize specific claims.

During our interviews, old documents and archives were often shown to us as true "treasures" embedding the historical "truth" of access and use of specific alluvial (is)lands. But, in each case, competing claimants showed different maps in which the shape and position of sandbanks and administrative boundaries differed. These were attempts to re-tell the history of the area in their own way. In the ever-changing alluvial environment, inscription devices are highly volatile, as clearly showed by the set of illustrations we used in this article.

Though we have not delved into intra-village power relationships, these clearly play a central role in the making of inscription devices and in shaping access to and practices of alluvial (is)lands. Community leaders who hold records, maps, official letters and reports play a key role in these dynamics. Often described as "truth bearers", their decisions do not go unquestioned, as we alluded to in the second case study. Intra village disputes can be particularly acute in a context where repeated and asynchronous migrations due to erosion foster village factionalism (Ivars 2020). Further, the efficacy of any single inscription device in terms of translating claims in practice largely hinges on the relations between community leaders and local authorities in charge of land allocation (village tract clerk and administrator, DALMS and Township GAD agents). Unsurprisingly power and influence networks, within and beyond village units, contribute to making alluvial (is)lands.

At first sight, the volatile materiality of alluvial (is)lands consists of their ever-changing shape and position. But the resource making strategies described above clearly highlight that this is not the only issue at stake. The volatile materiality of alluvial (is)lands is actively shaped by people who make use of an institutional and legal framework that is open to interpretative flexibility. The latter indeed offers the scope for local arrangements to be devised and continuously adjusted. For five decades, this happened in an authoritarian context under direct military rule (1962-2011), and the success of any strategy hinged on personal relations and support from military authorities at the township and higher levels, as those remained the ultimate decision makers. Similar to sediments, rules and regulations deposit on top of or alongside each other and can be called upon to further specific interests, potentially bringing resolution of a conflict, but also triggering new disputes (Boutry *et al.* 2017; Mark 2016). The legal endorsement of any one claim is indeed likely to clash with other claims and practices that have never fully disappeared, and that also have some legal backing. In other words, the idea that conflict(s) over alluvial (is)lands can be resolved through land governance reforms seems misplaced. Conflicts are inherent to the volatile materiality of alluvial (is)lands. To play on words, they are constancy in an otherwise ever-shifting socio-environment.

The case studies described above and most of our discussions with farmers and officials actually highlight that alluvial (is)lands largely come into being through stories recounting practices or official decisions

made in days long ago, now used to justify current claims and practices. The materiality of alluvial (is)lands takes on another dimension in words and on paper, rather than in sediments and grass. These are the maps, historical land records, eligibility lists, or official letters from officials. These are used as inscription devices that are themselves open to interpretation and through which resources are made. In other words, what makes the volatile materiality of the alluvial (is)lands is not only current socio-material configurations of sediments, grass, and claims, but a series of decisions and practices that can go back decades (even more) and that persist. As such, sediments and grass never really disappear, though they are in constant motion.

References

- Aung Ko Oo, U. 2019. [မြေနကျွန်း အငြင်းပွားမှုကို အမြန်ဆုံးဖြေလည်အောင် ဆောင်ရွက်မည်ဟုဆို](#) [Alluvial (is)land dispute to be solved promptly]. *Mizzima Daily*, 15 November 2019 [accessed December 12th, 2019].
- Aung Thu Nyein, U. 2019. [9 bodies found again in Magway land conflict](#). *Eleven Myanmar*, 26 July 2019 [accessed August 29th, 2019].
- Aye Win Oo, U. 2018. [ကိုင်း ကျွန်းမြေအား မြေနု မြေရင့်ခွဲခြားသတ်မှတ်ခြင်း](#) [Categorizing *myei-nu'* and *myei-yint* on alluvial (is)lands]. *The Farmer Myanmar*, June 8 2018 [accessed August 30th, 2019].
- Bakker, K. 2004. *An uncooperative commodity: privatizing water in England and Wales*. Oxford: Oxford University Press.
- Bakker, K. and G. Bridge. 2006. Material worlds? Resource geographies and the 'matter of nature'. *Progress in Human Geography* 30(5): 5-27.
- Blaikie, P. and H.C. Brookfield. 1987. *Land degradation and society*. London: Methuen.
- Boutry, M., C. Allaverdian, M. Mellac, S. Huard, S. Thein, T. Myo Win and K. Pyae Sone. 2017. [Land tenure in rural lowland Myanmar: from historical perspectives to contemporary realities in the Dry zone and the Delta](#). Yangon, Myanmar: GRET research report, Of Lives of Land Myanmar Research Series.
- Brosius, P.J. 1999. Analyses and interventions: anthropological engagements with environmentalism. *Current Anthropology* 40(3): 277-309.
- Camargo, A. 2017. Land born of water: property, stasis, and motion in the floodplains of Northern Colombia. *Geoforum*.
- Castree, N. 2003. The production of nature. In Shepard E. and E. Barnes (eds.). *A companion to economic geography*. Oxford, UK: Blackwell.
- Displacement Solutions. 2015. [Land acquisition law and practice in Myanmar: overview, gap analysis with IFC PS1 & PS5 and scope of due diligence recommendations](#).
- DVB. 2019. [မြေနကျွန်းမြေပြဿနာ](#) [Alluvial (is)lands disputes]. A YouTube video published by DVB TVnews, *Democratic Voice of Burma*, August 25th 2019 [accessed August 26th, 2019].
- Escobar, A. 1995. After nature: steps to an antiessentialist political ecology. *Current Anthropology* 40(1): 1-30.
- Fairhead, J. and M. Leach. 1996. *Misreading the African landscape: society and ecology in a forest-savanna mosaic*. Cambridge: Cambridge University Press.
- Forsyth, T.J. and A. Walker. 2008. *Forest guardians, forest destroyers: the politics of environmental knowledge in Northern Thailand*. Seattle, WA: University of Washington Press.
- Glover, D., J.-P. Venot and H. Maat. 2017. On the movement of agricultural technologies: packaging, unpacking and situated configuration. In Sumberg J. (ed.). *Agronomy for development: the politics of knowledge in agricultural research*. London: Routledge.
- Government of British Burma (GoBB). 1945. The Burma Land Revenue Directions, 1911 in The Lower Burma Land Revenue Manual (corrected up to the 15th June 1945).
- Government of Burma (GoB). 1962. Rules of distribution of alluvial (is)lands. Union Government Financial Commissioner Office. (in Burmese)
- Government of Burma (GoB). 1963. [၁၉၆၃ ခုနှစ်သီးစားချထားရေးနည်းဥပဒေ](#) [1963 Tenancy bylaws].

- Government of Burma (GoB). 1970. မြေနုကျွန်းချထားရေး လုပ်ထုံးလုပ်နည်းများ ညွှန်ကြားချက် [Letter of instructions on *myei-nu'kyun* procedures], dated 27th May 1970.
- Government of Myanmar (GoM). 1999. ၁၉၉၉ ခုနှစ်၊ နိုဝင်ဘာလ (၂၁) ရက်နေ့ (၁၂၀၀) နှာရီအချိန် ပန်းတနော်မြို့နယ် ကသာဝင်ကျေးရွာအုပ်စု၊ ပြည်တော်သာကျေးရွာဘုန်းတော်ကြီးကျောင်း၌ ကျင်းပပြုလုပ်သည့် ပန်းတနော် (ကသာဝင်) နှင့် ညောင်တုန်း (ဂန်ချောင်း) နှစ်မြို့နယ်မြေနုကျွန်း ကိစ္စအစည်းအဝေးမှတ်တမ်း [Meeting minutes on Pantanaw (Kat Tha Win) and Nyaungdone (Gan Chaung) alluvial (is)land case, held on 1999 November 21st, around 12 P.M., at Pantanaw Township, Kat Tha Win Village Tract, Pyitawtha Village monastery].
- Government of Myanmar (GoM). 2007. ရောဝတီတိုင်း၊ ဟင်္သာတခရိုင်၊ ဇလွန်မြို့နယ်နှင့် ရန်ကုန်တိုင်း၊ ရန်ကုန်မြောက်ပိုင်းခရိုင်၊ တိုက်ကြီးမြို့နယ်အကြား ကြာအင်း-သက္ကယ်ကျွန်းမြေနုကျွန်း လုပ်ကိုင်ခွင့် ညှိနှိုင်းဆွေးနွေးခြင်းမှတ်တမ်း ပေးပို့ခြင်း [Report on the negotiations about land use rights on Kyar Inn – Thet Ket Kyun alluvial (is)land located between Irrawaddy Division, Hinthada District, Zalun Township and Yangon Division, Northern Yangon District, Taikkyi Township], dated 6th December 2007.
- Government of Myanmar (GoM). 2012a. [The Farmland Law](#). Pyidaungsu Hluttaw Law No. 11 of 2012. (Unofficial translation)
- Government of Myanmar (GoM). 2012b. [The Farmland Rules](#). Notification No 62/2012. The Republic of the Union of Myanmar. The Ministry of Agriculture and Irrigation.
- Government of Myanmar (GoM). 2020. [လယ်ယာမြေဥပဒေကို ပြင်ဆင်သည့်ဥပဒေ](#) [The Law Amending the Farmland Law]. Pyidaungsu Hluttaw Law No. 2 of 2020.
- Groupe de recherche et d'échange technologique (GRET). 2020. Land allocation on alluvial land. Myanmar land and livelihoods policy brief #3. (Unpublished)
- Gruel, C-R. 2018. [Sédimentation et érosion dans le delta de l'Ayeyarwady : focus sur trois archipels situés sur le cours principal du fleuve](#). Independent research report.
- Hein Thar, U. [A deadly fight in Magway Region for the Ayeyarwady's 'gold'](#). *Frontier Myanmar*, 15 August 2019 [accessed September 5th, 2019].
- Hudson-Rodd, N. and Sein Htay. 2008. [Arbitrary confiscation of farmers' land by the State Peace and Development Council military regime in Burma](#). Rockville, MD: The Burma Fund.
- Ivars, B. 2020. Alluvial tactics: land access and control on the Ayeyarwady River. *Journal of Burma Studies*. 24(1): 37-78.
- Ivars, B. and J.-P. Venot. 2018. Entre politiques publiques et matérialité: associations d'usagers et infrastructures d'irrigation au Cambodge. *Natures Sciences Sociétés* 26(4): 383-394.
- Ivars, B. and J.-P. Venot. 2019. [Grounded and global: water infrastructure development and policy making in the Ayeyarwady Delta, Myanmar](#). *Water Alternatives* 19(3): 1038-1063.
- Ivars, B. and J.-P. Venot. 2020. [Claiming and re-claiming the Ayeyarwady Delta, time and again: the case of Nyaungdone Island, Myanmar](#). *Journal of Political Ecology* 27(1): 517-538.
- Kaung Myat Min, U. 2019. [လူ ၃၉ ဦးအသက်နဲ့ လဲခဲ့ရတဲ့ ရောဝတီ မြစ်ကမ်းစပ်က မြေ ၇ ဧက](#) [Seven acres of land along the Ayeyarwady riverbank led to thirty-nine deaths]. *The Irrawaddy*, 4 August 2019 [accessed August 17th, 2019].
- Krause, F. 2017. Towards an amphibious anthropology of delta life. *Human Ecology* 45: 403–408.
- Kull, C. 2004. *Isle of fire: the political ecology of landscape burning in Madagascar*. Chicago, IL: University of Chicago Press.
- Kyi Pyar Chit Saw and M. Arnold. 2014. [Administering the state in Myanmar: an overview of the General Administration Department](#). Subnational Governance in Myanmar *Discussion Paper Series*. Asia Foundation/MDRI.
- Lahiri-Dutt, K. and S. Gopa. 2013. *Dancing with the river: people and life on chars in South Asia*. New Haven, CT: Yale University Press.
- Lahiri-Dutt, K. 2014a. [Chars-Islands that float within rivers](#). *Shima: The International Journal of Research into Island Cultures* 8(2): 22-38.

- Lahiri-Dutt, K. 2014b. [Beyond the water-land binary in geography: water/lands of Bengal re-visioning hybridity](#). *ACME: International Journal of Critical Geography* 13(3): 505-529.
- Latour, B. 1983. [Give me a laboratory and I will raise the world](#). In Knorr-Cetina K. and M.J Mulkay (eds.). *Science observed: perspectives on the social study of science*. Thousand Oaks: Sage. Pp. 141-169.
- Li, T.M. 2014. [What is land? Assembling a resource for global investment](#). *Transactions of the Institute of British Geographers* 39(4): 589–602.
- Lubeigt, G. 1974. [Les villages de la vallée de l'Irrawaddy \(Birmanie Centrale\)](#). *Études Rurales* 53-54-55-56: 259–299.
- Lubeigt, G. 1998. *Pagan, histoire et légendes*. Paris: Editions Kailash, Collection Civilisations Sociétés.
- Mark, S. 2016. [Are the odds of justice 'stacked' against them? Challenges and opportunities for securing land claims by smallholder farmers in Myanmar](#). *Critical Asian Studies* 48(3): 443–460.
- Maung Maung Nyunt, U. 2018. မြေသိမ်းသည် ဆိုလေတိုင်းနှင့် မြေယာဥပဒေရေးရာ လယ်တွေအသုံးချစာတမ်းများ [Land acquisition and applied land law records]. Tamwe, Yangon: Wisdom House Publishing.
- Ministry of Agriculture and Irrigation (MoAI). 2013. ဧရာဝတီတိုင်းဒေသကြီး၊ လွန်မြို့နယ်၊ သက္ကယ်ကျွန်းကျေးရွာအုပ်စုနှင့် ရန်ကုန်တိုင်းဒေသကြီး၊ တိုက်ကြီးမြို့နယ်၊ ရေပေါသောင်ကျေးရွာအုပ်စု အကြား မြေနုကျွန်း အငြင်းပွားမှုကိစ္စ [Alluvial (is)land dispute between Thet Ket Kyun Village Tract, Zalun Township, Ayeyarwady Region and Yei Paw Thuang Village Tract, Taikkyi Township, Yangon Region], dated November 8th 2013.
- Reynard, P.C. 2013. Explaining an unstable landscape: claiming the islands of the early-modern Rhône. *Environment and History* 19: 39–61.
- Richardson, T. 2016. [Where the water sheds: disputed deposits at the end of the Danube](#). In Bozovic M. and M. Miller (eds.). *Watersheds: poetics and politics of the Danube River*. Boston, MA: Academic Press.
- Richardson, T. and G. Weszkalnys. 2014. Introduction: resource materialities. *Anthropological Quarterly* 87(1): 5–30.
- San Lwin Oo, U. 2019. [မြေနုကျွန်းနှင့် ရပ်ရွာလူအသိုင်းအဝိုင်း](#) [Alluvial island and rural communities]. *The Farmer Myanmar*, 11 October 2019 [accessed October 15th, 2019].
- San Thein., J-C. Diepart, Hlwan Moe and C. Allaverdian. 2018. [Large-scale land acquisitions for agricultural development in Myanmar: a review of past and current processes](#). Vientiane, Laos: Mekong Region Land Governance (MRLG).
- Sarker, M.H., I. Huque, M. Alam and R. Koudstaal. 2003. Rivers, chars and char dwellers of Bangladesh. *International Journal of River Basin Management* 1(1): 61-80.
- Scurrah, N., P. Hirsch and K. Woods. 2015. [The political economy of land governance in Myanmar](#). Vientiane: The Mekong Region Land Governance (MRLG) Thematic Study Series.
- Scoones, I. 2001. *Dynamics and diversity: soil fertility and farming livelihoods in Africa*. London: Earthscan.
- Sit Htet Aung, U. 2019 [Four people, including official, arrested in deadly land dispute](#). *Myanmar Times*, 1 August 2019 [accessed August 2nd, 2019].
- South, A. and M. Katsabanis. 2007. [Displacement and dispossession: forced migration and land rights in Burma](#). Geneva, Switzerland: Centre on Housing Rights and Evictions (COHRE).
- Stamp, L.D. and L. Lord. 1923. The ecology of part of the riverine tract of Burma. *Journal of Ecology* 11(2): 129-159.
- Suhardiman, D., M. Kenney-Lazar and R. Meinzen-Dick. 2019. The contested terrain of land governance reform in Myanmar. *Critical Asian Studies* 51(3): 368-385.
- Tin Gyi, U. 1931. *Maubin Gazetteer*. Volume A. Rangoon, Burma: Superintendent office, Government printing and Stationery.
- Taylor, R. 1987. *The State in Burma*. London: Hurst.
- Whatmore, S. 2002. *Hybrid geographies: natures, cultures, spaces*. Thousand Oaks: Sage.

- Zaman, M. 1989. The social and political context of adjustment to riverbank erosion hazard and population resettlement in Bangladesh. *Human Organization* 48(3): 196-205.
- Zaw Min, U. 2019. [မြေနုကျွန်းမြေပြဿနာ](#) [Alluvial (is)land disputes] [accessed August 30th, 2019 from Facebook].
- Zimmerer, K.S. and K.R. Young. 1998. Introduction: the geographical nature of landscape change. In Zimmerer K.S. and K.R. Young (eds.). *Nature's geography: new lessons for conservation in developing countries*. Madison, WI: University of Wisconsin Press.