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The creation of Nepal's rice-growing plain: water management and territorialisation processes in Sunsari district

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ABSTRACT. – **The Nepalese plain, a formerly marginalised area, has undergone dramatic changes over the last fifty years to become Nepal's granary. This process derives from an ancient ideology that led to the introduction of land policies and then of large hydraulic infrastructures. This paper studies the subsequent changes in the population's relationship to land and water, and in the territoriality of the different groups of actors involved. It analyses the co-construction of the management of hydraulic facilities through social dynamics and its imprint on the territory. It also demonstrates how the former marginalised situation can explain certain social conflicts, which can be observed in the management of water resources.**

LAND HOLDING, MARGIN, SOCIAL CONFLIT, TERRITORIALITY, WATER

RÉSUMÉ. – **Construction de la plaine rizicole du Népal : sous le prisme de la gestion de l'eau et des processus de territorialisation dans le Sunsari –**
La plaine du Népal, après avoir été marginalisée, a connu des transformations spectaculaires lors des cinquante dernières années, pour devenir le grenier à grain du pays. Or cette construction se révèle être le fruit d'une idéologie ancienne, qui lança l'instauration de politiques foncières, puis d'aménagements étatiques. L'article étudie les modifications induites dans le rapport à l'eau et à la terre et dans la territorialité des différents groupes d'acteurs. Il analyse la co-construction de l'organisation hydraulique par les dynamiques sociales, sa transcription territoriale et montre que la situation de marge explique certains conflits sociaux visibles dans la gestion de l'eau.

CONFLIT SOCIAL, EAU, FONCIER, MARGE, TERRITORIALITÉ

Introduction

State territoriality projects—whether they concern land policies, development projects or infrastructure development—lead to territorial changes. Some authors describe them as a 'territorial complexity' characterised by a 'simultaneous deployment of different territorialities' and 'a relationship to space that corresponds to different logics and practices' (Moine, 2006; Giraut, 2013). Others analyse these changes as being territorial fragmentations and restructurings, as in the Indian Himalayas where an 'ethnicisation of territories', also known

as an 'ethno-territoriality process', can be seen in borderland areas created at the time of British colonial rule (Smadja, 2013). Though Nepal was never colonised, it is showing the same tendency. The country is without a doubt undergoing a period marked by ethnic and identity claims made by historically marginalised populations, especially those in the plain.

The control of this space by centralised government is essential because of the demographic, economic and geopolitical advantages the plain offers: in half a century, it has gone from being a pioneering front to a 'full space'. Today it hosts more than half of the country's population (on only 17% of the territory) and is the country's granary of rice and wheat. These spectacular changes are the result of huge state investment and development, of the continuous influx of migrants from the mountains and of a desire to fully annex this fertile space. Sunsari district, in the eastern plain and on which our study is based, illustrates these changes perfectly with its large state-run hydraulic infrastructures (dams, embankments, vast irrigation system) and with the steady flow of populations from the mountains.

To address these changes, we set out to examine territoriality from a dynamic approach (Raffestin, 1986) by focusing on the actors (Bonerandi et al., 2000). Indeed, water infrastructures are often studied from a technical (efficiency-oriented), economic (profitability-related) or institutional (participatory-management-analysis-related) perspective. Here, we have adopted a constructivist point of view: the social reality of a given situation is the product of the social interactions between actors who integrate their environmental constraints. As Jeanne Riaux (2015) explains, the analysis of the various discourses held by the actors of a water system is essential for understanding so-called contemporary failures of water management. In our case, this analysis is centred on the co-construction between nature, society and technology, water infrastructures being, in spite of their rigid aspect, reshaped by social dynamics (Marié, 1987; Trottier, Fernandez, 2010). In order to study the latter, the authors carried out several periods of fieldwork in Sunsari district[1] and conducted mainly qualitative interviews with various actors, which were recorded and transcribed.

We postulate that any state territorial development project leads to territorial changes, which, in the case of water infrastructures, are reflected on water management. Based on this hypothesis we show that studying Sunsari district's water systems provides insight into the territorial dynamics and the processes of reterritorialisation at work in the district.

To this end, we first address the way the Nepali government's land policies have contributed to making the Tarai plain an economic pillar of the country, while maintaining this space as a social and political borderland. As we will see, the state has hardly been involved in local water management in the district studied. However, the situation changed in 1950 when the country opened its borders to international investments. The second part of our study describes the transformation of Sunsari territory following the building of water infrastructures, while examining their productive and strategic logics. In a third part, we show that the co-construction of changes in the water system is guided by social dynamics along with their associated discourses. We shall therefore see how water management provides scope for the expression of political and social oppositions and for the demonstration of a multiple territoriality within a same space.

1. Depending on the author: for a period of 18 months, four months, or numerous one-month field trips.

State territoriality project via land policies since unification

Situated in Himalayan foothills, in line with the Ganga plain, the Tarai plain (fig. 1) is often described in Nepal as space that was plagued by malaria and covered in forests, and was therefore hardly used until 1951. However, this image of a forest area needs to be toned down and analysed in light of the political objective of controlling the territory and its inhabitants.

The plain: historically a marginalised pioneering front

The king of Gorkha, of upper Hindu caste, unified Nepal in 1769 by conquering the different kingdoms that existed at the time. He was the one who created a centralised Nepali State whose capital, Kathmandu, was established in the mountains. The plain was regarded as an internal colony by the central power (Gaige, 1975) and therefore relegated to a marginal situation, that is, according to Frédéric Giraut (2005, p. 174) 'on the periphery of an encompassing administrative space, where the feeling of belonging is attenuated, a margin notably being situated in relation to a centre.'[2] Covered in forests and wetlands, infested with malaria during the monsoon from June to October, it was used as a natural barrier against the British. However, in the eighteenth and nineteenth centuries, the government that upheld the ideal of a populous and resolutely rice-producing Nepal (Ramirez, 2009, p. 325) rapidly became aware of its potential economic development and encouraged its colonisation by people from northern India from the end of the eighteenth century onwards (Regmi, 1978a; Dahal, 1983).[3] However, the Tarai was already inhabited both by the Tharus, an ethnic group from the plain, characterised by its rice-growing and fishing activities, also famous for its forest-clearing skills in India during British rule (Krauskopff, 2000); and by plain-dwelling caste populations for whom there is no clear information about when exactly they settled there (Gaige, 1975, p. 61). The latter are similar to Indian populations who were encouraged to develop the Tarai, and today are called Madhesis.

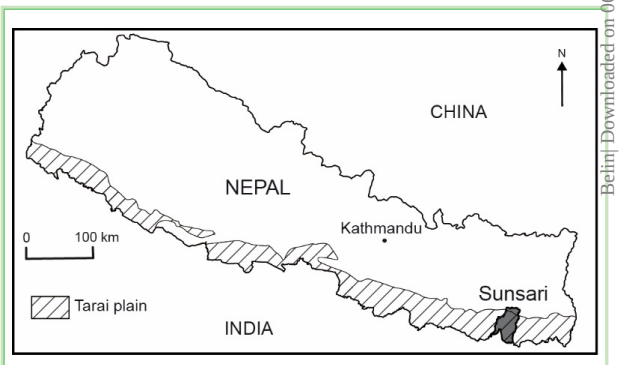

Fig. 1: Location of the plain and Sunsari district in Nepal

From 1814 to 1860, the border between India and Nepal changed a number of times, making these populations dependent on one country then the other, and therefore subjecting them to a shifting line of discontinuity.[4] It is worth noting in this respect that during the war against the British in 1814, a feeling of resentment towards Madhesis emerged among Gorkhalis because of their alliance with the British. Besides, shortly after they had taken power, the Rana Prime Ministers (1846–1950) enacted the first Nepali Civil Code, a powerful tool for socio-territorial control (Adhikari, 1984) which institutionalised the social hierarchy. It attributed a dominant position to upper castes (and, among them, mountain-dwellers over plain-dwellers) and overlooked numerous Madhesi groups (Bennett *et al.*, 2008, p. 3), therefore totally marginalising them.

2. Our translation.
3. The government could not ask mountain people to migrate because the latter referred to the plain as 'death valley' (Dahal, 2013).
4. Since this break creates a discontinuity, it also helps to apprehend the plain as a fringe, according to Frédéric Giraut's definition (2005).

In 1951, the Tarai did not fit the description of uninhabited 'empty confines' as it is often portrayed. Indeed, 35% of the country's population (2.9 million people) were already living there at that time, practising agriculture and animal husbandry (Gurung, 1998). They were essentially populations (ethnic groups and castes) from the plain.

Social and territorial transformations brought about by land policies

With unification, the king became the owner of the land, which he granted to an emerging (administrative and military) elite in exchange for services rendered, thus ensuring the latter's loyalty. Parallel to this, central government needed local representatives to collect taxes; a task that was undertaken in the plain by Tharus and high-caste Madhesis who, in the process, gained higher social status. This feudal-centralised model (Sugden, Gurung, 2012) therefore introduced significant changes to the social system. Indeed, within the space of two centuries Tharus went from being semi-nomads to sedentary farmers on land that had become the property of the Hindu king or of his delegates (Krauskopff, 1989, p. 15). Moreover, by inviting Indians to come and cultivate the Tarai, the Nepali government may have planned to destroy social cohesion among Tharus (Krauskopff, 2000, p. 38).

This land tenure and land tax system guaranteed the state's income (Regmi, 1978b), and in particular enough to sustain the Gorkhali kings' expansionist war efforts[5] at the end of the eighteenth century: farmers in the plain 'supplied the rest of the nation with rice and other valuable products' (Meyer, 2000, p. 16). The Tarai was a key element in the constitution of central power. The Ranas reinforced these policies and, from 1860 onwards, using diplomacy with the British and no longer needing the plain as a barrier, they once again encouraged its development (Gaige, 1975, p. 60). Besides, it was during this period in Sunsari, according to our interviews, that the first wave of forest clearing (by Tharus, in the northern part of the plain and by Madhesis in the South) would have started. A second wave would have taken place in the 1920–30s in the middle of the district, with Madhesis and Tharus settling there at the same time. They all came from the western neighbouring district of Saptari, which had been peopled a lot earlier, or from India in the south. Although these migrations were often presented to us as spontaneous by the populations, we assume that most of these new settlements in Sunsari were linked to the reinforcement of policies to valorise the plain, that is to say to orders to clear the forest which some interviewees mentioned.

Tharus and Madhesis built small-scale irrigation systems by diverting watercourses and they collectively repaired rudimentary water intakes and earth canals. Furthermore, hamlets that relied on the same waterway joined forces to manage water distribution. Thus, according to our fieldwork, this water linked the Tharus in the centre and northern parts of the district to the Madhesis in the southern part. It also contributed to the construction of the territory by newcomers who laid claim to the resources of this recently cleared area. There is no evidence to lead us to believe that there was any government interference in the local management of irrigation water, which corroborates studies on the absence of any direct state intervention since it only offered incentives

5. Against Tibet, Sikkim and Kumaon.

to develop irrigation and stabilised property rights (Pradhan, 1990; Aubriot, 2004).

In the mid-twentieth century, Nepal chose to make the plain more attractive to incite populations from the mountains and Nepalese migrants evicted from Assam and Myanmar to settle there (Dahal, 2013, p. 158) and to open its borders to foreigners and to international investments. Numerous projects were launched: the eradication of malaria, migrant settlement programmes, the development of roads and water infrastructures, the building of hospitals and schools, and an agrarian reform (in 1964) that abolished privileged land tenures. These were major transformations for the plain, in addition to the migrations from the mountains—in 2001 these migrants represented 37% of the total population of the plain (Dahal, 2013, p. 159). It is in this context that the transformation of Sunsari took place, for the most part around infrastructures on the River Koshi which forms its western border.

A process of state territorial development through massive water infrastructures in the plain: Sunsari district—a case study

The development of the Koshi, an impetuous river which is difficult to tame and is overloaded with sediments, sparked many controversies among British engineers in India. After Independence, work to build embankments started in 1953 (Mishra, 2008). Taking advantage of the fact that Nepal had opened its borders to foreign investments, after the signing of bilateral agreements, India broadened its vision of land development, drastically transforming many districts of Nepal's plain. The years 1950-60 were marked by the strong influence of international aid in structuring the irrigation sector in Nepal, notably through the creation of the centralised Department of Irrigation (DoI) and the start of a hegemonic period of large-scale development projects. The agreement concerning the Koshi was signed in 1954 and has reshaped Sunsari district.

Transformation of the district's geography

Physical transformation of the territory

The Koshi agreement allowed India to embank the river and to build a dam in Nepal near the border. Its hydrological system has been turned upside-down (Fig. 2): the riverbed is now contained between dikes; the dam at the border allows water to be deviated in India through two lateral irrigation canals (the western canal also supplying a little water to Saptari district in Nepal). During the 1970s, other rivers in Sunsari district were also embanked, with dikes being regarded as the ultimate response to problems of flooding, the latter being a new concern in Nepal.

Added to this was the building in several stages of the largest irrigation system in Nepal, the Sunsari Morang Irrigation System (SMIS). It was scheduled to cover 64,000 ha in Sunsari and Morang districts. India does not benefit from this infrastructure even though, as a result of the bilateral agreement, it built the first segments: the water intake on the Koshi and the Chatara canal which flows

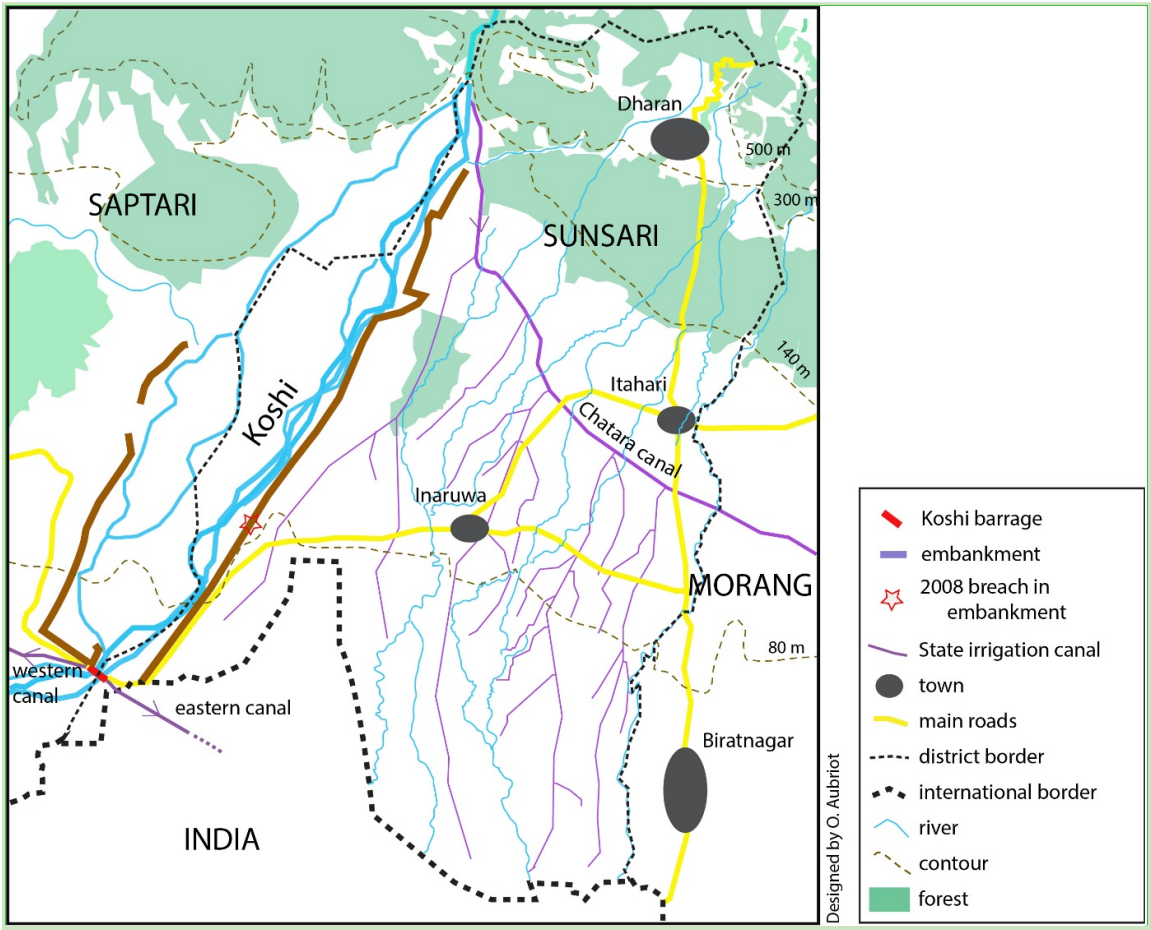

Fig. 2: Main state installations in Sunsari district.
The forest boundary represents approximately the break in slope between the plain and the mountain.

from west to east. The first network was constructed in 1975 but it rapidly became ineffective for various reasons (displacement of the Koshi riverbed, excess sand in the canal, poor-quality construction). It was only between 1978 and 2001 that the project really took off thanks to funding from the World Bank: the water intake was moved upstream, the main canal rehabilitated and twenty secondary canals were built, running from north to south, crisscrossing the land between the Chatara canal and the Indian border. The SMIS supplanted older local irrigation systems in this area that covers 84% of the plain in the district.[6] Very quickly, the plain became entirely cultivated: in place of pastures or forests, there are now rice fields as far as the eye can see.

Demographic transformations

According to the censuses, the population of this region[7] multiplied by seven between 1951 and 2011 because of the naturally strong demographic growth—the population of Nepal tripled during this period –, but also because of the endless flow of migrants from the mountains since the 1960s. In 2011,

6. This district covers 1,200 km², 66% of which is made up of the plain that is covered mostly by rice fields, 7% by the riverbed and the remainder by the first hills in which forests and the city of Dharan lie (Fig. 2).
7. As Sunsari district was created in 1962, we have used statistics from the district that was called Biratnagar in 1951; this includes the two current districts of Sunsari and Morang (population increase from 0.23 to 1.72 million).

population density in Sunsari district amounted to 600 inhab./km^2 and migrants represented 44% of the population, versus 37% of Madhesis and 18% of Tharus and other indigenous groups from the plain.[8] Figure 3 shows firstly that Madhesis live mainly in the south of the district whereas Tharus are to be found more in the east and the north of the district, and secondly that populations from the mountains, known as Pahari in the plain, settled in the northern half of the district, most of whom today reside in urban areas. In rural areas, Paharis have settled on the periphery or between Tharu hamlets; the few who can benefit from the SMIS (because they have settled south of the Chatara Canal) rely on the upper parts of SMIS irrigation canals.

The logic behind development projects

The strategic and productive logic behind these projects, whether stated or left unsaid, allows us to grasp the diverging interests in controlling marginal areas (Faggi, Bergeron, 1990). While the Koshi dam and the dikes are managed exclusively by India, the SMIS and dikes on other rivers are managed by Nepal (according to rules imposed by funding agencies).

Productive logic

India built dams and dikes in Nepal according to two sets of logic: a logic of flood protection because Himalayan rivers frequently sweep across its territory; a logic of production to satisfy its enormous needs in terms of irrigation by building canals that start at the Koshi dam (that cannot supply Sunsari district).

In Nepal, the Koshi embankment has created a new protected space: the 'land of the Koshi', a name given to the western part of the district which was regularly flooded by the shifting riverbed. 'It was the first time we felt protected. '[9]

8. Our calculations are based on the censuses.
9. Interview with a Madhesi from Sripur, April 2013.

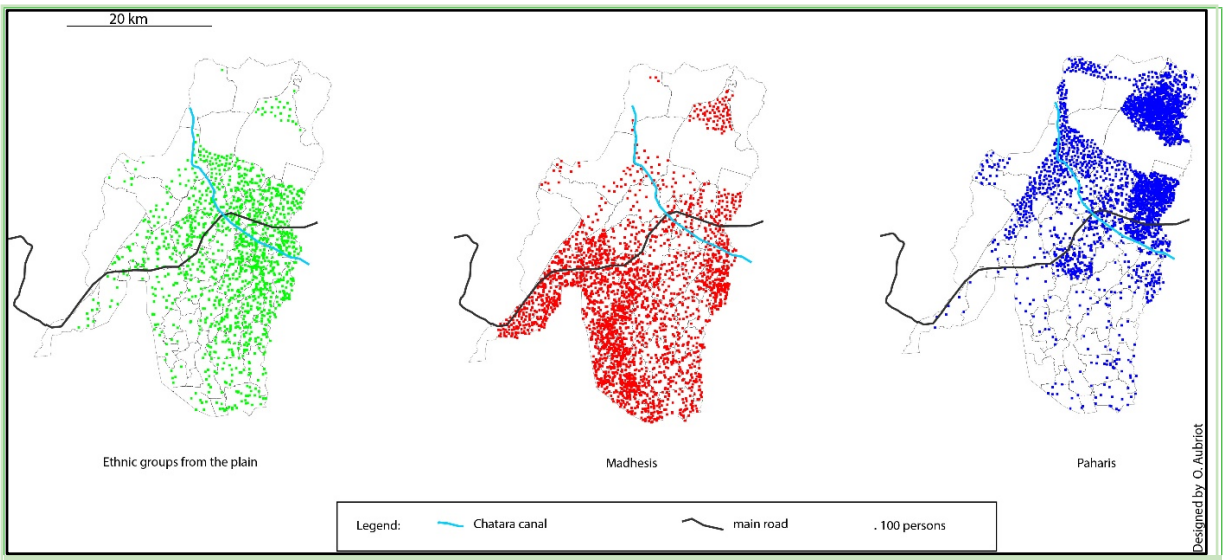

Fig. 3: Patial distribution of the density of the three main population groups (ethnic groups from the plain, Madhesi and Pahari), measured per administrative unit (VDC) in Sunsari District.

Irrigation is also vital in Nepal for good rice production. In theory, the SMIS irrigation network would help supply a vast area by using water from the Koshi, which had so far not been used. The Gorkhali ideology has prevailed, no longer via land policies but via heavy infrastructures financed first by bilateral aid, then by international aid.

What strategic logic lies behind infrastructure projects?

For the Prime Minister of the newly independent Indian Union, dams were 'the new temples of India'. Nehru's words raised engineering to the realm of the gods, placing the engineer at the centre and establishing the control of nature through technology as the dominating paradigm. The Koshi dam has, moreover, shown the political supremacy of India, materialised by its territorial domination and its control over water in Nepal: situated downstream, India not only manages the project located on Nepalese territory but is the main beneficiary.

For Nepal, there are a number of rationales. It was a way to firmly establish the newly restored royal power and to fully annex the plain using modern technology and state institutions. The situation reflects Stuart Elden's point of view (2010, quoted in Giraut, 2013) whereby the territory is a combination of economic and strategic control. Technocratic logic dominates the perception of territorial development: engineers think in terms of cartography, topography and civil engineering (in building rectilinear concrete canals from north to south on the highest ground so that water flows into the secondary canals thanks to a gravitational force), without consulting or involving local populations, and often on a vast scale. One may wonder whether one of the objectives was in fact to dismantle local organisations, which used to manage water collectively, in order to promote a model that includes migrants and gives the control of water management to engineers. Furthermore, DoI engineers call upon local contractors who possess the technical know-how. Having a monopoly on knowledge and the funds to control the infrastructure, they encourage clientelism and corruption in the maintenance of infrastructures. Strategies for accumulating personal wealth also need to be taken in consideration.

During the 1960s state territorial development evolved via the creation of water infrastructures and of institutions to manage them. Plain-dwelling populations, Tharus and Madhesis, now have to contend with two new actors: government engineers and Paharis, populations from the mountains, with whom they have to share space and natural resources.

Co-construction of hydraulic installations and social dynamics: reflecting territorial restructurings

Not only have district actors involved in water management and/or use seen their numbers increase but, given the participatory management policies, they have become more diversified: the SMIS is no longer managed by DoI alone but also by user associations created in 1994. The latter's institutionalised participation has opened the door to the expression, in the management of water and the infrastructures, of social conflicts characterising contemporary Nepal.

Indeed, today, identity movements take centre stage in Nepali politics, reshaping debates on the definition of the nation, on the rights of citizens and on the structure of the state (Lawoti, Hangen, 2013).

Deconstruction of a unified hydraulic territory

The Koshi's high sediment content challenges the lifespan of installations and considerably increases maintenance costs. Hemmed in between the dikes, the riverbed rises due to sediment deposits, becoming higher than the surrounding plain and thus weakening the dikes. In addition, the capacity of the canals is reduced as sandbanks form, leaving less water for farmers downstream. To rid SMIS canals of the accumulated sand, engineers have dug deep into local riverbeds into which this sand could be dumped. According to our enquiries, a few years after these events took place, the populations observed a disruption of the hydrologic balance, which manifested itself in the enlargement of the rivers' flow and, further south, in greater flooding and erosion.

The embankment policy soon showed its limits with regard to these rivers. Indeed, water is not drained correctly because of the obstacles caused by the dikes and other infrastructures such as canals, roads, houses, etc. A new type of 'long-term' flood has emerged with stagnant water being trapped (for up to six months), making land unusable. According to our observations and inquiries, the populations concerned end up rupturing the dikes and canals to let water out, preferably under the cover of darkness to avoid any conflict with neighbouring communities. The areas most affected by this waterlogged land are to be found in the southern parts of the district, which are also the poorest.[10]

When travelling through the district, one can see that some dikes are rather badly positioned, that the overall logic that must have initially prevailed no longer exists. There may be several reasons for this. Firstly, successive dikes were built in an uncoordinated manner by totally independent programmes. Secondly, according to flood victims, the location of these dykes is thought to be linked to the personal interests of locally influent individuals (protection of their own land and taking advantage of the financial opportunities these constructions represent). And lastly, these dikes were built based on models developed for Western rivers and are therefore ill-adapted to the Himalayan context: this discrepancy is typical of scientific equations in 'orthodox' science which imagines itself to be universal and representative of a particular social construction (Forsyth, 2003).

As for the canals, there is a clear difference in the southern part of the district: here they contain no water because they are full of sand, are damaged or have been destroyed. Water does not arrive downstream, or only in very small quantities, and thus access to it cannot be guaranteed. There are diverse reasons for these failures in water distribution and network maintenance. We believe that the first of these is the absence of water turns to favour the downstream area in order to counter the 'natural' disadvantage faced by tail enders of secondary canals (in every gravitational system, in order to benefit from water, the downstream area relies on the practices of those upstream). A project of this type is currently being conducted by the chairman of the user association of the secondary canal called 'SS1 branch'. It sets out to establish a cropping calendar

10. These issues do not obviously stop at the border. Neighbouring Bihar State faces similar issues.

which over time would balance the water needs between the north and the south of this branch, that is, between upstream and downstream areas. Another reason is the excessive amount of sand in the canals, which reduces the amount of water available. Moreover, several water users have refused to pay the water tax—even though it is used to maintain the canals– until they actually receive water. This vicious circle is fuelled by internal quarrels within user associations (observed during general assemblies of water user associations) and by tension between engineers and farmers. And lastly, damaged canals are being badly repaired, which might be due to the potential benefits drawn from successive repairs: indeed, just as for dikes, it seems that political and financial arrangements have been made between local influent individuals, engineers and entrepreneurs, rendering multiple repairs more profitable.

The reality of the irrigation system, where only a small amount of water reaches the southern parts of the secondary canals, looks nothing like what the maps lead us to believe: a unitary network with water flowing throughout. Furthermore, according to interviews carried out among engineers, it appears that only a few of them actually venture to the southern region and therefore they do not manage the entire system, even though their job is to provide for the whole district. A map representing the whole network (like the one in Fig. 2) shows an ideal territory, which is in fact truncated. Given that maps are a power tool and give a representation of the territory which has to be managed (Le Bourhis, 2007; Elden, 2010), the absence of a map of problematical areas with no or little water might be a way of removing all traces of the problem. The water distribution issues described above (sandbanks, drainage, damaged canals) have led to the development of local solutions that have resulted in the loss of any overall coherence, and thus to unequal access to water between north and south.

Marginalisation of Madhesis and unequal access to water

This north-south inequality coincides with a social division since most Madhesis have land in the southern part of the district and are therefore those most affected by failures in water distribution and irrigation networks. We do not claim that this correlation between unequal access to water and social distinction is intentional. This situation has gradually been co-constructed by various social dynamics against a backdrop of ethnic and social conflicts. There have been recurrent conflicts ever since the return to a democracy in 1990, a time when ethnic claims flourished; with the end of the armed conflict opposing the Nepalese government to the Maoist militia from 1996 to 2006, the number of claims has developed considerably. For the plain, the Madhesi uprising in 2007 was a turning point, forcing the government to lend an ear to their claims.

Today, Madhesis condemn the marginalisation they have suffered since unification, as well as the historical negation it has led to. Written from a mountain perspective, the prevailing version of history describes Madhesis as Indian settlers. This version is irrespective of the period during which they settled and of the groups already living there before unification. It minimises their position as ancient users of this area and challenges their territorial rights. Madhesi groups have long been marginalised, proof of this being that some of them are

not mentioned in the first civil code. The fall of the Rana regime did not put an end to this marginalisation; quite the contrary. The Madhesis' low rate of schooling has persisted, just like their poor representation in state institutions. Furthermore, conditions for obtaining citizenship, which were revised in 1964, have compromised the land rights of Madhesis (Nayak, 2010), who are stigmatised as 'Indians' and therefore as foreigners. This revision strategically preceded the agrarian reform: populations from the plain who could not meet the new requirements lost a lot of land.

The growing number of Madhesi political parties of an ethnic nature reflects the diversity of the possible definitions of Madhesi (all populations of the plain; only castes; castes and Muslims;[11] castes and certain ethnic groups of the plain). Despite this, a set of elements characterise them socially. A clear socio-economic difference between upper and lower castes, and the heavy reliance of low castes and landless people on upper castes can be observed. Suffering from extreme poverty, illiterate, often with no citizenship documents, the poorest need assistance with financial and administrative problems. Conversely, numerous members of upper castes, educated landowners or large landowners, are active in political parties. The social organisation of Madhesis allows political representatives to rely on a large popular base. However, one cannot ignore the fact that their programmes do not concretely address local development issues, focusing mostly on the national agenda and ethnic claims over territory: one might wonder whether the discourses about Madhesis in difficulty are not exploited for purely electoral ends. The main victims of unequal access to resources and of floods are indeed poverty-stricken Madhesis, most of whom had lost all hope of being recognised by the state even though it was thanks to the People's War, then the 2007 uprising, that they regained hope.

Since Madhesis live mainly in the southern part of the district, they may be associated with this area , which constitutes a real territory: it is relatively homogeneous socially (only Madhesis), spatially (mostly in the southern part of the district) and technically (waterlogged land or no access to irrigation water because there is not enough functional equipment). Here territory is defined as a space that has been appropriated economically, ideologically and politically (Di Méo, 1998) which, in association with an identity claim, prompts us to talk about a community space (Jolivet, Léna, 2000) that Madhesis often demarcate by the road, opposing north and south. Thus, they project their mental image as a group, their territoriality (Rey, 2001), with the road as a symbol of the geographical limit of their social discrimination.

Here, Madhesi territory corresponds to the area affected by irrigation network deficiencies and by unequal access to water. This situation is encapsulated in the discourses showing clear opposition between engineers and government officials on the one hand (most of whom are originally from the mountains) and Madhesis on the other hand. The latter argue that the state still marginalises them because it does nothing to repair the canals. As for the government officials we talked to, their comments dictated by fear convey clichés about border populations: 'they're dangerous, don't go there, it's very risky, they're liars, you might never be seen again…' When we spoke with some Pahari engineers about the land destroyed by the Koshi embankment rupturing in 2008 and about the

11. In this text, we include caste populations from the plain and Muslims in the term 'Madhesi'.

differences in the way assistance was given to the villages affected by floods, their answers said a lot about the tension that exists between populations. They alluded to differences in culture and lifestyle to explain the situation: 'the Koshi breach was surely caused by the gods to punish them: Muslims because they eat cow meat and Hindus because of their barbaric orthodoxy.' When asked about the lack of investment in this area, the state of disrepair or even the absence of irrigation canals, they replied: 'They're Indians from Bihar. They should go and get help over there since they're there every day[12] […] We don't want to invest in this area because they destroy everything, you only have to look at the state of the infrastructures…'.

This is a very telling example of how Madhesis and engineers co-construct a situation of water system failures, which is underpinned by social tension: water management issues clearly mark a Madhesi territory for engineers but also for the Madhesis themselves who are then able to back up their identity claims and denounce their marginalisation. Similarly, by opposing DoI engineers, Madhesis and sometimes other farmers use water management issues to express their opposition to the government. Thus, social and political tension may surface in matters of irrigation, and the latter is used to fuel discourses to back community identity claims. There is therefore a representation of the reality and a production of the discourse on water issues that are shaped by social conflicts. As discussed by Sheila Jasanoff (2004), knowledge production (here linked to water issues) is co-constructed by social order.

Mosaic of territories and water management

Unlike engineers and their truncated territory, Madhesis and their territorial inscription, the other two types of actors involved here do not possess a homogeneous territory. One may wonder whether this lack of homogeneity goes to explain why the relationship between territory and water management is not self-evident.

Tharus do not show any strong opposition to the engineers and do not have the same rebellious attitude as Madhesis. Indeed, they are considered to be the original inhabitants of the Tarai, and therefore their citizenship has not been challenged. Many strive to rid themselves of the image of a 'backward' ethnic group living an isolated life, and are keen to take part in development projects. Besides, they readily acknowledge the benefits the SMIS has brought: several crops a year and the omnipresence of rice cropping during the monsoon. Today their territory is fragmented and encroached on by Pahari newcomers. The concept of 'multi-situated territory' would apply here because of the discontinuity of the appropriated spaces that are interconnected by social, political and economic links (Giraut, 2013). However, the construction of this territory is different than the constructions featured in the special edition of *Espace géographique* (No. 4, 2013) dedicated to this concept where they are a result of segregationist urban policies, of the existence of a transhumance corridor, of international migrations, or of scattered dwellings. Here the situation is one of discontinuity created by the massive arrival of migrant farmers who settled between pre-existing hamlets or on their periphery. Tharus clearly express their feeling of being invaded by Paharis, not only in terms of their numbers but also with regards

12. Madhesis regularly go over the border because of matrimonial and economic ties.

the new relationship to landownership this has introduced. Thinking that they owned a vast amount of land and not realising its value, Tharus sold land to Paharis for ready cash in order to repay their debts. The newcomers rapidly became moneylenders whom Tharus would address as "malik" (boss) (Gerboin, 2013, p. 19), showing the reversal of roles that has taken place in relation to land. Moreover, we were told numerous anecdotes about the tricks played by Paharis who are said to have taken advantage of Tharus' illiteracy to recover land, notably at the time of the 1964 agrarian reform (*ibid.*; Guneratne, 2002). The Tharus' current territory corresponds to a territory that in the past was continuous and whose central and southern parts were shared with Madhesis. Granted that it 'makes up' a territory (Cortès, Pesche, 2013) today, it is in fact in reference to this former territory where hamlets were inhabited exclusively by Tharu people. These hamlets maintain the 'patchy' geographic and ethnic coherence of Tharu territory via immaterial ties (matrimonial relationships, ritual celebrations, etc.).

As for Paharis who benefit from SMIS water, they live in the upstream parts of the canals and do not generally suffer from a shortage of water. Having come to settle in the plain to practise a productive type of farming and to live an easier life than in the mountains, they may sometimes show some opposition to the engineers and protest about water distribution issues. It is not possible to talk of territory as far as they are concerned: they are not a coherent social entity because they include several ethnic groups and castes from the mountains that do not identify with each other under a single identity. Besides, there is no geographically delimited appropriation of the natural resources by one community, or even by the Paharis as a whole, even though in some places with a strong concentration of migrants the feeling of appropriation may exist. Lastly, more or less recent arrivals end up disrupting the territorialisation process, since the construction of the territory is necessarily a long-term process (Di Méo, 1998, p. 108) and cannot be achieved here for the time being.

Territorial restructurings and social dynamics are intertwined. We have shown that water management is intimately linked to these components and that its analysis could therefore reveal the territorial restructurings at work. And, if this is the case, it is due to the co-construction of the organisation of the water distribution system by the social dynamics we have described.

Conclusion

In this article, we have shown the extent to which the relationship between land and water has been shaped by various state territorial development projects. As soon as the country was unified, the Nepalese state fashioned its national territory through land policies. It rendered the plain an ambivalent space, somewhere between a pillar of the economy and a political and social margin. The opening up of Nepal to the technocratic paradigm and to international capital in the middle of the twentieth century enabled the government to fulfil its long-awaited ideal of a populous rice-producing plain. Water infrastructures and the massive migration of populations from the mountains to the plain resulted in the dismantling of some local territorial organisations and in modifying

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social dynamics in Sunsari district. Plain-dwelling populations have been (and still are) both actors of the Tarai's territorial development and victims of ethnic stigmatisation. This borderland situation in which the plain remained for two centuries has led to today's social conflicts. The margin is indeed a paradoxical geographical object, as expressed by Pierre Derioz (1997) when he describes the importance of time for territories that have been sidelined, seeing in 'their marginality the result of a certain backwardness, dependency or devitalisation, but also the premises of innovations or recovery'.

The territorial dynamics which result from these transformations have produced, from a continuous territory shared in the past by Tharus and Madhesis, several more or less imbricated territories. They are the outcome of a process of reterritorialisation associated with the actors involved: the engineers' territory and their truncated view of a unified territory; the Madhesis' homogeneous territory, the basis for their identity claims; and the Tharus' multi-site territory after being broken up by Pahari settlements, because these populations from the mountains have no formalised territory. These territorial dynamics can be found in the management of water and of the associated infrastructures, which allows some people to demonstrate their opposition to the state and to back social conflicts or ethnic claims on a material basis. The substantial sway that water management issues and identity claims exercise over territory prompts us to conclude that there is a co-construction of the hydraulic situation and of interacting social dynamics in Sunsari district.

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