Researching the Red River Delta

The territory of Northern Vietnam, centered around the ancient, leveled, intricate and rich agricultural landscape of the delta, with its capital Hanoi, has long been frozen; first by a grueling and prolonged war, and later by a very restrictive and isolating political regime. The Doi Moi reforms of the 80s aiming at a “socialist-oriented market economy” have exposed this territory almost overnight to the forces of globalization and thus irrevocably set it into motion. The 20+ million inhabitants of the region are now on the move, everyone, it seems, has become an entrepreneur and everything is under some sort of transformation. The privatization of public assets, amongst them almost all land, has led to a relentless struggle over control of the territory and its resources. In between these nebulous skirmishes of government agencies, influential functionaries and the newly rich oligarchs, the people—farmers, fishermen, small entrepreneurs and speculators—look for their own piece of the pie, grasping fragile opportunities between their traditional skills and temperamental global trends.

ETH Studio Basel, interested in processes of urbanization beyond the urban centers, has travelled to Hanoi to investigate, with the help of local students from the National University of Civil Engineering, this territory, which has just started redefining itself under the influence of global forces and networks.
Red River Delta

URBANIZATION OF FRAGILE OPPORTUNITIES

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For a number of years now we have studied transformation processes of contemporary cities under globalization. It is from this context that we have, more recently, started to frame a wider area and query the impact of those same globalization processes on a greater geographical scale, one that extends beyond the clear gravitational fields of the metropolis. From the position that the city is not autonomous—but always rather embedded and in relation to a wider territorial logic, with human activity therein allowing for its accumulation—we have started to outline and investigate what comprises such contemporary territories in relation to the shifts we have observed in the contemporary city. Globalization processes seem to evolve from preexisting traditions and, ultimately, inspire different reactions in any given territorial milieu. Territories have begun to reconfigure themselves in the wake of globalization, to loosen up and allow for increased mobility and metamorphosis. These processes require our professional inspection; they are as vital to understanding contemporary life as is the accumulated understanding we have in our field of the city. This year we ventured to Northern Vietnam, an area once named Tonkin by the French. In this ancient, leveled, intricate, and rich agricultural landscape, a wide delta of the Red River, the whirring of over 20 million inhabitants caught our attention.

This project continues ETH Studio Basel’s territorial researches in Switzerland (1999–2005), the Nile Valley (2009), Rome - The Adriatic (2010), and Florida (2011), research that demonstrates ways that densely populated environments invent new types of space. Traditional, natural, or rural areas turn into urbanized territories characterized by a multilayered occupation of landscape and overlapping structures and meanings.

Part of Northern Vietnam’s allure comes from a particular, dual property of the land. On the one hand, this is one of the oldest man-formed landscapes on the planet: the Red River Delta, with its very gradual historical development. It has shaped itself as a clearly legible entity and is, even now, defined by the body of water that flows evenly throughout its surface and by the surrounding mountains that afford it a seclusion and strategic advantage. On the other hand—and within a span of some twenty years—in economic and political reform, entitled the Đổi Mới (in English, “renovation,” referred to further on as “Đổi Mới”), has provoked an urbanization that, while perhaps not as potent as the one occurring in neighboring China, through a game of pure numbers takes on a quiet, yet commanding presence of this same landscape. We see the newly emerging forces touching upon the land’s ancient constraints, and we note the creation of the inhabitants’ ever more elaborate strategies of how to develop, build, and attain affluence.

“Early Western Map of Tonkin”, in Alexandre de Rhode’s “Histoire du royavme de Tunqvin,” Lyon, 1651.
The Vietnamese landscape has been formed, incrementally, over a very long period of time. Wet-rice cultivation is responsible for the landscape’s current form, and the method of its cultivation scarcely allows for modernization. Traditionally, the Vietnamese have perceived their territory as marked only by mountain and river elements, which can be seen in most depictions of the countryside up until the arrival of the French. The French soon introduced a different reading of the Tonkin, as they sought determinacy in a foreign land: a cartographic precision was introduced and infrastructural interventions—especially within settlements (cutting off river armlets, canalizing water flow)—applied mathematical order atop this natural system. Chapter VI Water Management goes on to elaborate how “permanence” was created in the Delta. Beginning in the twelfth century, Vietnam began to implement an elaborate system of dikes and, more recently, dams that have tightened the territory, a condition that today remains—in its robustness—difficult to adapt and to maintain. The polder system projected onto the delta unifies the entire group of “islands” into a singular water system: the water coming into the fields and cities is the same water coming out again. The limits of this system are slowly becoming apparent. Large reclamation projects, such as are investigated in Chapter VII Ha Long Bay and particularly centered around the tourist zone of the UNESCO protected bay, are the extreme extrapolation of this desire to reformulate nature (in this case the coastline) to produce more useable land: a kind of mastering of one’s environment. Ha Long City and its industrial port, the tourism of the beautiful bay, the necessary development of infrastructure, the extensive mining in the entire province of Quang Ninh, and the aquaculture along the coast are all formative pieces of this surface-puzzle and, curiously enough, we observe the formation of alliances between seemingly uncomplimentary functions—functions that even threaten each others existence. For now, again, a balance has been struck, but here too we are witnessing the limits of such a balance.

A kind of physical “inertia” resulting from robust constructs offers a strong resistance to further physical transformation. With rice production, natural and technological restrictions often prevent the process of transformation completely. The fine-grain agricultural landscape has been made even more “flat” with the subdivision of land that took place in the nineteen-fifties which distributed to each farmer a surface of 360m², 1 Sao, which should yield 360kg of rice per year. As large landowners have been abolished during the course of the last century, the agricultural surface which may read like a single endless rice paddy landscape, is, in fact, entirely composed of such individual Saos. The impression of productiveness that the landscape evokes can also be brought into question: while many people still work in the agricultural sector—80% of the population of the Red River Delta—and while Vietnam remains the second largest exporter of rice after Thailand, only about 20% of this comes from the Red River Delta. Chapter IV Agriculture further reveals both what is becoming of agricultural production and, simultaneously, what is becoming of the farmer himself in light of such social and economic change.
Rural migration in the Delta means a more permanent change, both socially and physically. What is most interesting about this vector of movement is that it is not, as it were, an exodus to the city. No, here, it seems to be rather a rural-rural shift where the “rural” is qualified by its infrastructural development and a series of other newly inserted factors (for instance the implementation of a new, decentralized industrial zone nearby). People leave the countryside only to settle another opportune countryside. In this process they introduce an entirely urban building type into the rural setting, namely, the vertical shop-house—a narrow, row-house typology that prevails in urban areas. It seems to be an intuitive typology, borrowed perhaps from the city, but it is curious that it is so artfully employed by those who have never before lived in an urban environment or in such houses. Its representative feature is the front facade, heavily ornamented with balustrade reliefs and timpanons framing terraces, painted in bright colors. The house usually encompasses a plot the width of 5m on the street-side, with a depth of 15–30m, and tends to occupy most of this area, save a commercial surface used in the front by the shop in the ground floor and a small space to the back. The flanks remain blank concrete surfaces, anticipating further development on each side. This tendency is described in detail in Chapter I Transformation of Xuan Mai.

An “urban scene,” for it has no depth other than the initial street front behind which the paddy fields serve as scenography, is assembled with seemingly no effort. The scene replicates across the Delta, varying only in ornamentation. A highway will have a development that is similar to that of a smaller road close to a secondary intersection, the plot remains always roughly the same size. This grainy character even gives the impression of being a natural product of the landscape. However, all but twenty years ago, none of these “morse code” developments existed; their emergence is swift and closely tied to a radical change in the economic regime of the country. The “escape” of the shop-house into the countryside is one of the more visible, immediate trends that the Doi Moi has inspired.
A comparable phenomenon to that of the new roadside settlement has been observed from the urban core of Hanoi outward. Chapter V Transport & Mobility looks at how the movement of both people and goods has connected the outlying territory in and around the capital. An ease of movement perpetuates a flattening of commercial activity over the city and beyond it; again small-scale commerce seems to be the upward limit. Instead of accumulating and consolidating, and thereby evolving with a hierarchy that would also signal a metropolitan scale for Hanoi, the energy is diffused and escapes into the periphery. There is almost a natural resistance to “bigness,” a collective subconscious that propels the city to absorb such instances if and when they emerge through some other force and to have things spread out evenly instead. As a formative energy, it is exactly on the other end of official planning energies, which often invest to generate this large scale. A symbolic example would be the new Hanoi Museum, an impressive edifice that, because of its size, remains unfilled. It becomes a monument to the city’s desire for this scale.

The official forces that consciously evade Hanoi’s refined small scale seem then to be the work of dreams: Chapter II Urban Expansion of Hanoi tells the story of the capital’s ambitions to become a metropolis through its various planned expansion phases. With them, the emergence of always another ideal of a “new” kind of living, which can, in the city fabric, be traced through its many historical and current trends. The central districts of the ancient city, the former citadel complex, and the clearly gridded French quarter remain legible in the inner first road ring. Beyond it, one can identify a series of blocks commonly referred to as the “socialist stamp,” and implemented in the fifties to eighties, that are composed of slabs and towers with open spaces in between that have subsequently densified with commercial streets, house extensions, and covered parking garages. The outermost part of the city, around the second highway ring and beyond, is where the most recent construction effort seems to be occurring and in the form of a real-estate boom of residential towers and gigantic villas in gated complexes, next to which other less consolidated parts of the city emerge in concert to supply the work necessary to bring them about, and the services and commodities that they require thereafter. These new urban fragments stand, at times, next to open agricultural land, which, much like the lakes within the center, become trapped within the new urban fabric.

The new periphery comprises almost half of the urban mass of Hanoi. Big investors compete here and, with apartments bought only to be resold, both the housing stock and the buildable land have created a field of speculation that is rapidly changing the city’s skyline.
Another relatively new typology that we see in the countryside is the Industrial Park (IP), dealt with in Chapter III Industrial Parks, and it is also perhaps the only instance of large development that we can for the moment find within the graininess of the rice bowl. While there was certainly industry preceding Doi Moi, more recent developments are concentrated in special economic zones that are dispersed along major roads. The park is, in a sense, extraterritorial, as it allows foreign companies to also “buy” a piece of land, under conditions negotiated with the government and often in necessary partnership with a Vietnamese company. The presence of an IP in a municipality is welcomed by the authorities and has even become an issue of land-grabbing, where the municipality reserves land for the future development of industry and tries to compete with other municipalities to get a new zone assigned.

The impressive new silhouettes of Hanoi and Ha Long dangerously overshoot current urban demands and are the product of a select few players who have profited from the privatization that the Doi Moi produced. Parts of this new urban landscape already lie still and eerily empty: some projects are put on hold, others are awaiting further economic impetus. This is also true for the IPs. The state has, for the moment, halted their implementation, although the country continues to industrialize and grow. The roadside urbanization is one of the outcomes of a formerly stable grid brought to its limits which has had to adapt to where there is opportunity. The initial economic surge of Doi Moi has passed and it leaves behind a precarious and unfinished image of territorial rewriting. In a very brief interval it has introduced a myriad of novel components into a predominantly closed territorial system in order to unlock it to a global “hinterland.”

This volume frames student work that has explored, observed, and described a series of current processes and their physical and sometimes societal consequences. We feel this is critical to understanding the transformation of a way of life, as well as the transformation of a very old and, to a large extent, fixed territorial entity that seems to have newly acquired a state of fragility. If before existence was threatened by the volatile forces of nature, this, now, is an economic and ecological fragility.

ENERGIES OF TRIAL AND ERROR
RESEARCH TOPICS

Each research topic was developed by an individual team of student-researchers and tested through case studies. Each case study relates to a specific physical location, in which the recent tendencies are best visible.

I  Transformation of Xuan Mai
II  Urban Expansion of Hanoi
III Industrial Parks
IV  Agriculture
V   Transport and Mobility
VI  Water Management
VII Ha Long Bay
I Transformation of Xuan Mai

Urbanization along the road-network represents possibly the most generic phenomenon in Vietnam: one layer of housing is built along the roads with road-side commercial activity in the ground floors. The backyard is juxtaposed with a pre-existing, one could say primordial landscape, in an almost surreal relation: the agricultural fields which continue to be worked on, silently, almost unknown to the revving activity on the transit road. This omnipresent phenomenon reshaping the territory of Hanoi’s hinterland seems to stem from basic economic urges, but what is it really? How is it absorbed into what is already there, and is it truly the sign of the “loosening” of a territory allowed by infrastructure and mobility?

Although cities and entire territories grow into more intricate and complex relations slowly over time, with industry and infrastructure playing their roles, the fundamental building matter of the “urban” remains still the housing unit. While today’s urbanization in the Red River Delta is an evenly spreading phenomenon, only loosely tied to the pull of a “center” such as Hanoi, the incremental logic of house building and the process that allows individual plot owners to develop their land, share a parallel to that which can be discovered in the ancient quarter of Hanoi, the 1000 year old so-called “36 streets.” Due to taxation logics, much like in the context of, for instance, the Netherlands, where building development was taxed by the facade street-frontage it entailed, Old Hanoi evolved into a morphology with very deep, narrow plots, with a very particular typology, often referred to as the “Tube” dwelling. This remains to be the method of subdivision as land value follows the rule of the street, access to a strongly traversed road greatly increases land prices, and furthermore the way of life still reflects that same merchant attitude of old, and the streetfront remains central to personal economy.

Research in the larger scale
The land - on which today one can build within a 50 yr. leasing right - is still owned by the state, but remains leased for generations of a family. This generates a delicate situation regarding building permissions and land use changes that are crucial when discussing urbanizing on agricultural land. It is necessary to understand the dynamics of the process of building on a piece of land, in relation to property rights and land subdivision. Try to briefly define how this has changed over time as far back as can be unearthed: the traditional constitution of villages and their plots (influence from the Chinese?), what changed (if anything) with the arrival of the French for builders outside of “colonial” areas (the french had an active interest in the hinterland villages, where riots could start, the same attention to the agricultural reforms, for much the same reason was devoted by the Communist government as well. Describe the way small land owners built during the Communist period before Doi Moi, and what has changed since the Doi Moi reforms, always looking into how it was done in the hinterland, building up a kind of evolution of the village.

Research on site
Working on the area around Xuan May, which is traversed by a significant transit road connecting to the highway leading West out of Hanoi, describe how the urbanized village is “becoming”: how does agricultural land switch into a house on the road? Can the economy of the village be described, are people combining farming with road repair shops or is an external participant entering the hinterland and speculating on the land? What kind of urban habitat in the end are we describing, how do people live in the urbanized village?

Site(s)
Xuan Mai, old village
Xuan Mai, new village
II Urban Expansion of Hanoi  METROPOLITAN AMBITIONS

The work would shed light into the urban transformation processes and unleashed energies of Hanoi’s rapid expansion towards the west, looking at its accompanying urban phenomena and new forms of living. An area along the 3rd ring road is marked by rampant speculative and real-estate developments. Commercial promotion paints a future here that is not necessarily congruent with the originally good planning-intentions of the state and obviously tempting to corruption and favoritism. This context builds the background for the research by primarily developing an understanding the “mechanics and mentality” behind the planning processes and building procedures.

The most recent driving force for this dynamic is the approval of an ambitious city expansion plan in 2008, which nearly tripled the administrative area of Hanoi including an area of over 6 mil. inhabitants and which will alter the identity of the Capital completely. A consequence of this political decision was the implementation of the “Hanoi Capital Construction Master Plan to 2030 and Vision to 2050” that primarily envisions the extension of the city towards the west by referring to the model of satellite cities, a series of dense urban centralities at the still rural periphery of Hanoi.

The good-intentioned strategy of this ambitious plan lies obviously in the prevention of the scarce agriculture land from a carpet-like urban sprawl and to divert pressure of urban growth to these new centralities. The plan further foresees massive investments in new road infrastructures connecting the satellite cities with the existing core, a series of ecological buffer zones along the waterways and the displacement of industries outside of the city. The physical model of the Masterplan 2030/2050 illustrates its enormous ambitious vision of a metropolis forecasting a population of 10 million inhabitants until 2030. Vis-à-vis this highly ambitious goals, the representations of the plan appears virtually as a wish-projection of an idealized world that has no reference to correspond to the existing realities. The urban reality as a direct consequence of the liberalized economy looks entirely different and is located at the other end or beginning of the highway, at the cities “new periphery” in the west. Today we can talk about either state planned housing projects – the so called new urban areas (built by the public housing authority) – or the most recent forms, the often gated housing communities built in a joint ventures between state and (mostly Asian) private developers with such alluring marketing names as “Hi-Tech City, Splendora, Manor or Ciputra”. The high level of speculation leads in both models – state and private – to increasing social segregation from the immediate urban context – most of these developments are owned and inhabited by the “well-off”.

Research in the large scale

Start with an investigation on the urban planning history of Hanoi (traditional city, Expansion during Chinese occupation, French colonial city, socialist city developments, Masterplan of 1997 and Masterplan 2030/2050) and collect maps that represent the different phases and directions of Hanoi’s urban growth. Compare the phases in a time line in relation to the different political and economic shift and turmoil’s of Vietnam. Try to distill the main urban planning features of the Masterplan (role of satellite towns, infrastructure, industries and agriculture, the role of the river and city core) in order to have a basis for discussion. Try to understand the mechanisms (legal and economic) that fostered the rampant speculative developments since the liberalization of the market under “Doi Moi”. Describe and illustrate the various actors (the state authorities, private developers/investors, planners etc.) and their roles and dependencies within the planning and building processes in the housing market.

Research on site

Talk to developers, planners, authorities and inhabitants of the different habitats and try to reconstruct the “mechanics” behind the development process, which also includes the financing and the negotiation process with the state authorities. Describe the economy: investment, land rights- and house prices, rents etc. and make comparisons between different projects. Try to catch the specific mode of life-style existing in the housing areas and their spatial and social relationship with its immediate urban context. Try to read on a larger scale the physical reality of Hanoi’s urbanity in relation to the abstract and idealized goals of the Masterplan 2030/2050.

Site(s)

Ha Dong, southwest edge of Hanoi
KTTs, new residential developments in the Hanoi outskirts
Vietnam is a developing country, quite literally so. Since its economic reforms, induced by a wish to follow the path of China to a prospering “Asian Tiger” economy, the country has already seen rapid transformation and growth. The combination of cheap labour and total control equal an easily organized international export sector, which is what Vietnam has made it priority, and any external player willing to play a highly “questionable” political/legal ball-game can stand to profit as well from the development surge. China, Korea, Japan and Indonesia are already putting their pieces on the chess field.

Spatially speaking, large scale manufacturing industries, raw materials extraction sites, and logistics hubs, have proliferated to the degree that they start to carry the urban processes with them, transform the territory, and become extremely interesting areas to observe and understand. Considered somewhat “special” territories in an economic sense, constituting economic zones, entities with different regimes of rule, they are in addition spatially introvert, and compact, defined internally and connected only to the logic of goods transportation. However they are intrinsically tied to the “place” they are in, they bring development, and they bring new worker’s settlements, or employ existing populations from surrounding villages. They eat up land. They change things. This inquiry shall pose the difficult question of how does something get “Made in Vietnam”?

**Research in the larger scale**

Observe the “industrial park” phenomenon, map and quantify the development of industrial parks. What are they (are they tax-exempt zones, how does this work)? Who is building them (global corporations, partnerships with local industries, the government)? What are the building regulations on a general level for these? Does the state put down infrastructure? Who provides the housing for the workers if there is new housing? How is land expropriated for this? Is there a way to describe the “typology” of the parks, what do they consist of? Is there a hierarchy of size and is there a logic to this in terms of allocation (i.e. next to existing pool of human labour, next to particular infrastructure)? Describe the movement of the labor force, the impact on urbanization, and obviously, the economic impact.

**Research on site**

Site research will be conducted as a cross-section along the South-East Highway Corridor (No. 5). Understanding the impact of the industrial park proliferation will be the priority, however the focus area will depend ultimately on possibility of access. Describe the sites via their location and significance, find out their relation to the hinterland, who works there and where do they live. Conduct interviews, and a spatial survey of both the site, and the area of the workers. Try to obtain numerical data on: scale of the economic activity, size of development (other developments it is connected to), number of employees, etc. Ultimately try to build an industrial portrait, that describes the transformative impact on landscape and livelihood of these industries.

**Site(s)**

Highway No. 5 Corridor, parks: Quang Minh/Dai Tu, and Sai Dong/B Long Bien
IV Agriculture

Vietnam is the second largest rice exporting country after Thailand. Surprisingly this production is achieved within traditional, small scale structures (most farms are less than one hectare). This grid of small fields formulates a kind of “genetic code” engraved in the entire Red River Delta territory. Almost no modern technology or mechanical equipment is used. While the whole country is in a frenzy of modernization and development the farmer still continues his task – and mostly meagre lifestyle – in a almost spiritual contemplation. It seems at first glance as if the traditional ways of cultivating the territory remain unaffected by the booming urbanization. Yet it is more than likely that the continuous overwriting of the rural “base code” not only extracts land from the agricultural territorial system but affects its inner logics as well.

Up to 1985 communist Vietnam put most of its energy into developing its agriculture. Yet results, especially the impact of collectivization, have been mixed at best. Since the introduction of Doi Moi agriculture’s share in the economic output has declined rapidly. Nevertheless over half of Vietnam’s population is employed in the farming sector still today.

Research in the larger scale
Investigate the state of Vietnam’s agriculture today! Find the relevant benchmark data (production, import, export etc.) and try to visualize it. Maybe it makes sense to compare Vietnam to other agricultural producers. Is Vietnam agriculturally self-sufficient? How is Vietnam’s agriculture linked to China, to Asia and to the World?
Parallel to this learn more about the historic development of Vietnam’s agriculture. How did farming work before communism? What where the consequences of the communist reforms (collectivization, land reforms)? How did the Doi Moi affect agriculture (allocation of land use rights to individuals, market-based incentives)? How are plot divisions and property structures today and how did they evolve to this? Examine especially the system of inheritance and the mechanics of leasing and selling land. Try to visualize all this information in a time line.

Research on site
Research different forms, scales and models of agri- and aquaculture within the Red River Delta! Try to reconstruct exactly the inner mechanics of such rural communities. How are they organized? How are the fields and the villages related? What are the main actors, the responsible state institutions and the relevant incoming and outgoing flows of produce and material? How are these rural networks linking to the urban centers (markets, distribution, off-farm income etc.)?
Keep asking yourself how this organism reacts or adapts to the continuous trend of urbanization and globalization? How are the traditional territorial structures transformed (or stabilized) under the pressure of enormous demographic and economic growth? How does building on rural land work? Are there any attempts to industrialize agriculture and what are the risks or potentials involved? Are there alternative crops (or livestock) to rice and why could they be attractive?

On the coast aquaculture and salt-production seem to play an increasing role. What are the economic and environmental effects of that?

Site(s)
West of Hanoi (Xuan May, Hoa Lac), South of Hanoi (Thai Bin, Nam Dinh and Binh My). For Aquaculture: Areas near Binh My and costal area near Hoang Tan Island.
V Transport and Mobility MOVEMENT OF PEOPLE AND GOODS

In a country such as Vietnam, leaping from rural inertia to the frenzy of global economy, mobility is essential. This is easily recognized by the monstrous amount of scooters on the streets. This specific means of transport seems to fit Vietnam’s current needs so perfectly that it has developed its own transportation culture including the “Xe Om”, the scooter’s taxi incarnation available on almost every corner. Private cars on the other side have remained a rare site on Vietnamese streets.

Yet with growing wealth it is expected that they will soon multiply – with unforeseeable consequences for the underdeveloped street network. Both road expansion and establishing new metro and light rail systems are considered top priorities by the authorities. Any such public infrastructure project has a direct effect on the urbanization of the area and can be read as the more or less direct expression of a specific urbanistic “Leitbild”. Any informal type of mobility on the other hand is expression of an urban need currently not satisfied by the state. Learning about transport and mobility in Hanoi and the Red River Delta will thus be crucial for understanding today’s everyday life in Vietnam, the state’s goals and ambitions as well as the relationship between the two.

Research in the larger scale
Start by simply identifying and mapping the existing transport infrastructure (airplane, train, bus, automobile, ship etc.) in Vietnam and more detailed in the Red River Delta. Next to the physical network itself this includes transportation capacity and frequency. Try to identify the different hierarchies within this system and the most important issues associated with it. How has this system evolved historically? What are the current projects to expand this system in the Red River Delta region (Hanoi Metro, light rail etc.)?

Next to this mainly state-provided infrastructure there exist self-organized system such as the Xe Om, or the rickshaw that complement and refine the official network of transportation. What can you learn about these informal transport modalities? On the side of individual transportation the scooter obviously holds a special place. What is the history of this means of transportation – and its economy? The huge “market” for this cheap scooters seems to be tended to by just a handful of Chinese and Japanese companies that sell their product area-wide (every village has its Honda-shop!).

Research on site
How do people move in the city, in the village, from city to city, from village to village, from village to city etc.? Describe the different overlaying and intertwining networks and the hubs that connect them. Find out about prices! Who can afford which mode of transportation? How is transportation regulated or not regulated by the state? What kind of transport behavior is tolerated or not tolerated by the state? Who decides on which transport infrastructure is built (i.e. Thang Long Highway) and what are the interests involved? As you will recognize the lines of personal transportation and cargo transportation are often blurred. Scooters for example seem to play a certain role in the distribution of goods. Who transports what and from where to where?

While carefully investigating the transport networks, its modalities, customers and providers keep the following questions in the back of your head: How are these systems of transportation linked to the current forms of urbanization?
VI Water Management MODERN CHALLENGES

The sophisticated natural hydro-system of the Red River Delta landscape is and was always important source for life and prosperity within the region. Together with the Mekong Delta, the Red River Delta (Bac Bo Plain) has become one of the most productive agricultural regions of Southeast Asia. This variability and mood of the river in the delta have forced the population already since the 11th century to restrain and to control the river with a vast system of dikes and channel infrastructures, allowing up to two rice-harvests a year.

Today, the predicted and ongoing rural to urban transformations of the region will significantly alter the predominately agricultural nature of the landscape and the relationship of water and land. The rapidly expanding hybrid territories of the Delta have already resulted in conflicting claims on the territory (urban functions versus natural or controlled floodplains, location of wastewater treatment infrastructure, water management functions versus ecological purposes, etc.) and complicated drainage networks. The region’s extensive water network is severely compromised by the scale, scope and speed of urbanization. As technology and money now allows, bridges are spanning the once uncrossable parts of the river and the relation of the city to water is acquiring new meanings.

Research in the larger scale
Investigate into the different water sources, such as groundwater and surface water present in the Delta: the Red River Basin as the largest watershed in the region and the aquifer of the delta as well as other sources. Try to compile maps that combine these different forms of water sources (aquifers, watersheds, rivers, artificial water infrastructures, precipitation maps) and try to explain their complex interrelations with graphic representations. Try to map these features on the scale of Vietnam and within the defined research frame and set it in relation to the urbanized areas on this two scales. Explain via the use of maps the geomorphological and hydrological consistency of the Red River Delta and how this condition enables this type of aquifer. Try to explain the techniques of irrigation of the so-called paddy rice fields, which are flooded parcels of arable land and the most predominate form of rice cultivation. Look at the up to 1000 years old features and techniques introduced by the Chinese in order to control the river. Try to find statistical data that underlies the changing condition under the growing urbanization in terms of pollution and consumption. Explain the different actors involved in water management, what are their roles and responsibilities?

Research on site
For the field research and possible case studies we recommend focusing on two different conditions: first in the rural areas towards the south in direction of the area between Binh My and Nam Dinh and second on the river space of the red river and its relationship to Hanoi – spatially and in terms of the role of the water for the city. Try to precisely describe the distribution-systems of the water for irrigation from the Red River via channels to the paddy-rice fields. How is the quantitative and qualitative control of the water managed and by whom? Talk to the different actors involved in the management and maintenance of water supply and distribution and the protection of the resource. What are the techniques for increasing extraction of drinking water through wells from the groundwater and what are its consequences?

Thac Ba water reservoir and Hoa Binh hydroelectric station, Ho Nui Coq Water reservoir (near Tam Dao National Park), water treatment plants and well fields.

What can you say about the quality of both - drinking and irrigation water – and what are the technical and legal measurements to deal with this issue? Look at infrastructural facilities such as Water treatment plants and well fields, but also water reservoirs (such as Thac Ba or the Ho Nui Coq Water reservoir) and describe how they improve or affect the system of this delicate hydro-landscape in the delta. Try to reveal the consequences that the growing urbanization increasingly generates on that landscape but also the space of the river itself. This would also concern the growing manufacturing industries in the delta between Hanoi and the coast that consume water in large quantities.

Site(s)
Red River in Hanoi, dike- and irrigation systems along the Red-River Delta area between Binh My and Nam Dinh south of Hanoi. Thac Ba water reservoir and Hoa Binh hydroelectric station, Ho Nui Coq Water reservoir (near Tam Dao National Park), water treatment plants and well fields.
This dynamics become evident visiting Ha Long today: one is confronted with many Hotel complexes under construction, ongoing land reclamation works and various commercial activities. It is obvious that such a boom provokes several conflicts in regard to this ecologically very sensitive landscape. As a matter of fact there is a certain awareness of that difficulty: In 1962, the Vietnam Ministry of Culture, Sport and Tourism designated Ha Long Bay a “Renowned National Landscape Monument.” And in 1994 – simultaneously to an increasing tourism – Ha Long Bay got listed as a UNESCO World Heritage Site in recognition of its outstanding, universal aesthetic value. In 2000 the World Heritage Committee additionally recognized Ha Long Bay for its outstanding geological and geomorphological value, and its World Heritage Listing was updated. The study is an investigation in the mechanics and economy of the UNESCO heritage landscape to foster tourism in the region.

Research in larger scale
The beginning of the research should cover two major fields: tourism and nature protection. Start with an investigation of the current state of Vietnam’s tourism and its historical development. Map the major tourist spots and search for statistical data. Describe the different trip offers and try to qualify Vietnam’s tourism! Finally try to explain the driving forces and reasons for the boom after the mid-nineties. Visualize your findings in maps, diagrams and time lines. Concerning the question nature protection start with mapping the currently existing parks and preservation areas. Find information about the rules and laws of nature protection in Vietnam. Search for statistical data about visitor numbers and biodiversity. Try to qualify the social and political reasons for nature protection; is it an idealistic or pragmatic approach (e.g. saving water quality for drinking water)? Describe the actors. Visualize your findings in maps, diagrams and time lines.

Research on site
The research in Vietnam focuses on Ha Long city, the bay and maybe a paradigmatic island (i.e. Cat Ba Island). Start the work in Hanoi and trace the way of a tourist: how does he book a trip to the Ha Long Bay? Which offers do exist? How does he travel there? In Ha Long continue with the mapping of the touristic infrastructure including the ongoing development and its actors: hotel complexes, second homes, boat companies, commerce, land reclamation, aquaculture industry etc. Try to grasp the mechanics behind that development: actors, financing, stakeholders etc. (Make interviews!) Trace the territorial transformation of that development: the growth of the city, the increase of reclaimed land, the “flattening” of the bay with the cutting of the karst hills etc. Describe possible conflicts between the different stakeholders. Show the social and environmental impacts! How does it interfere in the traditional fishing and other economies and settlements structures (floating villages etc.) in the bay?

VII Ha Long Bay

Ha Long is a city on the eastern edge of the Red River Delta close the Chinese border and famous for its unique bay. Ha Long Bay is an exceptional landscape consisting of water and thousands of limestone karsts and isles in various sizes and shapes. The evolution of the karst has taken 20 million years under the impact of the tropical wet climate. Until the 1990s Vietnam wasn’t a tourist destination at all, but since then the country has become a major spot in Asia, assisted by significant state and private investment, particularly in coastal regions.

Site(s)
Ha Long Bay, Ha Long city, i.e. Cat Ba Island
THE PROS AND CONS OF BLITZ TERRITORIAL ANALYSIS

The work of ETH Studio Basel on specificity is an important one at least for two reasons. First, it produces interesting and innovative work on globalization in areas and cities that are not among urban studies' usual suspects (London, New York, Amsterdam, Shanghai and the like). Second, it trains future architects to consider the world, and not only their region or country, as the field of their professional activity. Nevertheless, I must say that my initial reaction to this work was somewhat skeptical. As a social and cultural geographer used to work on similar issues over long periods of time, I was a priori not really convinced that anything valuable could come out of two weeks of fieldwork. In this brief comment I therefore discuss the pros and cons of what I call “blitz territorial analysis” and conclude with some reflections on the temporarities of research versus the temporality of territorial and economic change, which eventually lead me to plead in favor of such an enterprise.

There is first of all a lot to be said about the great qualities of the work produced on the Red River delta. The results of the thematic studies presented in this book are remarkable and offer a wealth of important insights into social and territorial change in the area. There are many reasons for this. The first is an excellent preparatory work by members of teaching staff, building on their previous “specificity” experience. The briefs for each topic offer a carefully crafted first diagnosis and a series of thought-provoking research questions. And good questions make, as we all know, 95% of good research. The approach chosen is crucial as well for the quality of the work: a focus on the relation between process and form (that escapes the well-known architectural fetishism of form) as well as the focus on interdisciplinarity – a combination here of morphological, statistical and qualitative sociological investigations – have provided the basis, despite time constraints, for “more than superficial” fieldwork. The second factor is of course the quality of the work by the students themselves: their strong engagement in the work and their skills in using mixed-methods. Finally, the impact of the work is also given by the quite impressive visual communication of the research results. I mean here not only the production of descriptive maps and plans but also the capacity to forge visualizations that synthesize processes of social and territorial change. In sum, therefore, one learns a lot by reading through the different chapters of the book about socio-spatial transformations in the delta since Doi Moi from the genealogy of urban villagers in Hanoi’s metropolitan area to the speculative transformations of Ha Long Bay.

Now, the risk of blitz analysis is of course to miss the role of actors, interests and mechanisms that are not immediately visible. This is especially the case in an authoritarian country like Vietnam where corruption is pervasive. Vietnam in that respect is not different from many other countries: there is a story “on the screens” and many intrigues behind the screens. Master-plans for Hanoi served as an example to indicate that the government holds a firm grip on urban development with an ambitious 2050 vision for 15M inhabitants in an area of 3,300 square kilometers. However, if we look at master-plans since Doi Moi – generally designed by companies having direct interests in the city’s development – we realize that they have been a purely cosmetic exercise. Planners and state officials see them as not more than a theoretical thought experiment. The same is true, when one looks at changes in housing typologies and preferences, for the strong role of state propaganda in favor of “modern” lifestyles. These are some of the aspects that are insufficiently present in the research, precisely because they tend to emerge after longer periods spent in the field. By pointing at these issues I am not saying that the studies in the book miss the important points. Thanks to careful preparatory work and contacts with local experts, they are most of the time remarkably well informed about dynamics of social and territorial change. But, because they are blitz analyses, they fatally miss certain points.

I would like to conclude with the question of temporality and with two suggestions. In the expression “blitz analysis,” there is an implicit critique: “research goes too fast.” This is not my point. I do not think that we should be nostalgic of some kind of Evans-Pritchard like “4 years minimum” ethnography that would be indispensable to say something about society and territory when the pace of change is as fast as it is in a country like Vietnam. Opposing helplessly the (slow) rhythm of research (and democracy) to the (quick) rhythm of economic and territorial change would mean giving up the idea of socially relevant research in such contexts. I therefore think we need both slow, long-term, knowledge-oriented research agendas and quick, short-term project-oriented ones. The crucial issue is of course how both types of research can communicate and cross-fertilize, how blitz analysis can best avoid the previously mentioned traps. In this context, what I would suggest for the next edition of the “specificity” project is a more systematic attention to controversies and translocal connections.

For each of the themes in this book there are controversies: about expropriation and land grabs in the periphery of Hanoi, about corruption and illegal construction in the city itself, about the use of sidewalks by street-vendors and scooters, etc. As we know from science studies, searching for controversies is one of the best ways to understand what matters, what is at stake and who are the stakeholders. To systematically look for controversies through a media search, by asking NGOs or ordinary people would therefore help seeing the processes “behind the screen.” A second strategy – once what matters has become clearer – is to follow things and actors across space. This is what the Ha Long Bay research in this book demonstrates: it follows capital and matter around to understand the processes of landscape change in the area. Doing that helps avoiding another trap of blitz analysis, which is spatial confinement. It helps seeing how processes in place are the results not only of local logics but also of a set of often complex translocal connections. As the work presented in this volume is part of a learning process where the experience of previous ‘campaigns’ is used to improve the following one, I hope that these brief comments can be used as food for thought.
SỰ CHUYỂN BIENABLE CỦA XUÂN MAI

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MIGRATION TO ROADS
THE TRANSFORMATION OF XUAN MAI

AN EMERGING PHENOMENON

COMPARING OLD AND NEW
From Rural to Urban
Two Ways of Living
Infrastructure
The Land Market
Building Processes

ON THE ROAD
Abandoning the Fields
AN EMERGING PHENOMENON

In the past years, a new settlement type has appeared in Vietnam. With agriculture no longer providing sufficient means for subsistence, people have had to find alternative ways to earn an income. Consequently, this settlement has come to constitute a new living space that comprises a combination of both industry and commerce as its economic backbone. In order to profit from proximity, access and activity, these settlements are determined by the positions of transit roads within the Vietnamese countryside. Numerous houses with direct groundfloor road access have been built along regional connections, one house after another, shoulder to shoulder along would be highways. In most cases one observes a simple row of narrow buildings whose backyards are agriculture fields belonging to somebody else. This is an entirely new profile of rural settlement.
All Around the Red River Delta

It is difficult to deduce a concrete pattern of emergence, since the settlements are spread all over the Delta, i.e. along busy traffic routes, or close to larger cities and industrial areas, or alongside smaller regional roads connecting towns and villages.
The structure of the new settlements is divided into four different elements: street, shop, house and field. This is the “live where you work” model par excellence. The shop and the house share the same entrance and, in most cases, there is simply one row of houses followed by the fields belonging to the local farmers that have sold off the stretch of their plots that is along the road.

**Universal Characteristics**

There are however certain features that appear to robustly define the nature of this occurrence in the entire Delta. The most important condition, unsurprisingly, is the road access, the road being a catalyst of the whole development. Secondly, the organization of an inexpensive private means of transport must be possible, now readily obtainable by growing motorcycle and car ownership. Thirdly, the most economically efficient way of accessing the street is provided by the so called “longhouse,” the most salient building typology for this kind of settlement, enabling shops and commerce on the ground, and lodgings above. The narrowness of the front assures affordability.

**Street—Shop+House—Field**

The structure of the new settlements is divided into four different elements: street, shop, house and field. This is the “live where you work” model par excellence. The shop and the house share the same entrance and, in most cases, there is simply one row of houses followed by the fields belonging to the local farmers that have sold off the stretch of their plots that is along the road.
House Typology

The dimensions of the house range from 3 - 5m wide, by 7 - 30m deep. Depending on the size, the house has either one room per floor or is divided in the middle and contains two rooms with one bathroom. There are as many floors as the owner can afford, regardless of how many people actually live in the household. Normally, there is plenty of space, with up to 3 generations living together. The front facade is elaborated toward the public side of the street, while the long, side facades, that face the neighboring plots, mostly remain windowless and blind. The shop either protrudes forward to the street in front of the house or is located within the ground floor of the house structure. Usually, the house has at least one terrace, e.g. on the roof overlooking the street.

1. Shop / house entrance
2. Shop
3. Living area
4. Kitchen
5. Sanitation facilities
6. Sleeping rooms
7. Rooftop terrace
8. Backyard
Comparing Old and New

Magnifying further, we focused on the town of Xuan Mai, located around 30km to the west of Hanoi, as a typical case where the old meets the new. The site has undergone significant changes over the past 200 years. The old village has rapidly expanded due to its location next to a significant road intersection. A new logic of settlement was added to the old traditional village. Migrants from all over the Red River Delta have now moved to Xuan Mai and, whereas the inhabitants of the old village still work in the agricultural fields, the dwellers along the street mainly work in the service sector. The difference in employment manifests itself also in the way of living.
Xuan Mai is located on an important road infrastructure. The road heading westwards leads to Hoa Binh, the one to the east leads to Hanoi and the southbound road continues to Cho Ben. The road northwards will connect the planned Satellite City of Hoa Lac to the area and surrounding settlements, and is also linked with the highway to Hanoi.
Old village
New settlement
From Rural to Urban

Earlier, Xuan Mai was a traditional village in the countryside organized around agriculture. Over time, it has increasingly grown due to different pull factors such as the improvement of the infrastructure and the settling down of the military in the area. Since fewer and fewer people can live solely on their income from agriculture, alternative sources of income had to be created within this rural setting. Xuan Mai's profitable location and connectivity allowed for the transformation of the labor market, to the extent that it attracted people from other areas with less opportunity for economic transformation. This resulted in an increasingly urban-oriented lifestyle emerging.
Three Villages
1800 The area hosted 3 agricultural villages: Xuan Mai, Tien Truong, Bui Xa. Life revolved around the harvest.

Road Development
1946 After the war and struggle for independence, the Vietnamese constructed several roads in order to improve the connection between Hanoi and its surroundings. Through Xuan Mai, one road from Hanoi to Hoa Binh and a road towards Cho Ben were built.

Setting of the Military
1975 The Cubans gifted a 30km long road to be built towards the Son Tay Province in the north. A decision was taken by the government to transform Xuan Mai into a city. To achieve this, the military built a farm complex in order to raise food for the soldiers during times of war. Consequently, more and more people from the military settled down in this area.

Setting of Civilians
1980 New areas around Xuan Mai emerged. A huge university campus was built. As a consequence, more people moved to Xuan Mai. Additionally, the road connection had to be improved for the transport of building materials since a new hydropower station had been built in Hoa Binh.

Growing Together
1984 Xuan Mai had been administratively divided to separate districts. The three initial villages were merged with the six neighboring villages. In 2008, Xuan Mai was merged to the province of Hanoi. Today, there is an ambition to transform Xuan Mai into one of Hanoi’s satellite cities.

Historical Development
The history of Xuan Mai goes back for more than 200 years. It has seen transformation from a rural village to an urban area characterized by large entities like the military and a university campus.

Pull Factors
Three main reasons can be named for why people move to Xuan Mai. Firstly, there is the Forestry University which attracts students from all over Vietnam. Secondly, a large military base and educational center are located in Xuan Mai. Additionally, its location on a busy traffic route exerts an economic pull.

Statistics
Above, some general statistics of the area in question: the distance to Hanoi, its location in reference to the infrastructure of the region, its area and the population, excluding the military personnel which are usually temporarily stationed in Xuan Mai.
The Old
The structure of old Xuan Mai has remained in its original state, and is not experiencing any current physical growth. Both the village boundary and each individual house plot are defined by walls. The pagoda constitutes the political and religious center of the community. The economic basis is solely agricultural production and its related economies (i.e. milling, trade, etc.). Each plot has a garden designated not for leisure, but rather used either for growing vegetables or stock breeding, and each farmer has additional arable land in the surroundings for growing rice and other staple crops of the region. Some farmers have alternative employment within the new settlement but this is not a common occurrence. Daily life is characterized by a strong sense of community and of belonging.

The New
The structure of the new Xuan Mai is easily readable in superposition with the infrastructure network. The plots are narrow and long since the land value and taxation is defined by the width of the plot along the street. As the ground prices are relatively expensive, the plot is used to full capacity. In contrast to the old village there is no need for a garden and space is usually not allocated for one. People work either in the home-based shop or commute to the surrounding bigger cities for business or, quite likely, do a combination of the two. The community life is anonymous, a uniquely urban trait. There is no “town” identity or awareness that this emerging structure constitutes a higher urban entity, people consider themselves residents of the street.
**Interrelations**

Despite the already discussed differences there is a certain amount of overlapping. On the one hand, the old village provides the new settlement with fresh agricultural goods which they sell in the common market. In addition to this, the old villagers offer some kind of service. For example, they often work in the building industry of the new settlement. Additionally, people living in the old part also benefit from the infrastructure of the new settlement, and the services in the new settlement give the old villagers the possibility to find an alternative source of income.

**Differences**

The old and the new part differ on several levels. Whereas the inhabitants of the old village grew up in Xuan Mai itself, most of the people along the street migrated from the surrounding areas. The old villagers work mainly in agriculture, the newcomers in the service sector. Concerning the organization of the communal life, the two parts extremely differ from one another. In the old village, the community still holds an essential role.
Two Ways of Living
As shown in the previous chapter, the two settlements have not only a different architectural structure, but also differ on several other levels. On the following pages, we want to introduce two inhabitants of Xuan Mai coming from the old and new settlement. Their lifestyles contrast significantly regarding various aspects such as their house organization, the family structure and way of life, their employment, leisure time activities, religious beliefs as well as in their social status.
Mrs. Yen, 73
Mrs. Yen was born in Xuan Mai, she has lived her whole life in the same house. The household comprises of four other members: her son, his wife and their two children. The whole family works in the agricultural sector, and in order to earn some additional money, her daughter-in-law sometimes works as a builder.

Spirituality
Since most of the inhabitants of the old village believe in spiritual forces, they often carry out religious rituals and ceremonies.

The Self-Sufficient Unit
The plot has two single storey buildings. The former contains the living and sleeping area, the latter includes the stalls for the animals and the kitchen. Whereas they merely have some chickens today, they used to keep pigs and a buffalo a few years ago. The garden is used for growing vegetables and fruits, but only for private purposes.

The Village, One Big Family
The villagers’ daily life is characterized by a strong sense of community. Mrs. Yen and her next door neighbors prepare for their harvest together while chatting to each other.

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Mr. Nho, 49
Mr. Nho was born and raised on this piece of land. His parents migrated from Hoa Binh Province to Xuan Mai 60 years ago. He lives with his wife and his two children. He could take over parts of his parents' land, located directly on the street. After his marriage, he built the house for his family. He runs his own business in the market of Xuan Mai.

Modern Lifestyle
They have wooden curved furniture, a hardwood floor, a new kitchen and sanitary facilities, and the latest electronic gadgets.

Different Generations
The total piece of land extends over 100m. Initially, Mr. Nho's parents owned only a small plot. Over the time, they were able to acquire more and more land. Today, the land is subdivided between the family members from the different generations. The family life is defined by a strong cohesion.

The Extension
At the moment, Mr. Nho is extending his house with a shop in the front. His wife intends to quit her job in the nearby hospital in order to open up her own pharmacy.

Modern Lifestyle

The Extension

Different Generations

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Infrastructure

The infrastructure of Xuan Mai is relatively well developed, and diversified, delivering urban attributes to the settlement. In most cases, the infrastructure is used by both the old and the new inhabitants. The various institutions present, as well as the supply of electricity, are predominantly supervised by the state. The range of employment covers all three economic sectors. Numerous migrants have settled down in order to benefit from the good infrastructure and the improved professional perspective.
From Farmer to Lawyer

The activities in Xuan Mai cover a wide range of different professions. The service sector is predominantly situated along the street. Day to day people install stands for the sale of goods. By contrast, there is also a large amount of fixed shops because most of the families offer some kind of service. These economic activities usually serve as a secondary source of income. Alternatively to a street-based activity, a lot of people also work in the marketplace. They either sell their self-produced agricultural goods or offer imported products. The people from the old village often work in the agriculture sector, even though it is getting more and more difficult to earn enough money with only the agriculture produce. Numerous inhabitants make use of the location to commute for work to larger cities in the surrounding area. The industry is also represented along the street, with the construction industry in particular experiencing a boom. Additionally, there is a large number of soldiers which are based and work on the military campus. In Xuan Mai, one is also likely to find also a lot of people which are working in the university.

Activity Distribution

All the different employment types are located in specific places and areas around Xuan Mai which suit their requirements best. The shops, the services and the industry are concentrated along the street. The market is located where the two busiest roads cross. The agricultural fields are situated around the old village. The commuters leave the town for their work. And the military area lies near the boundaries of the residential land.
– Migration to Roads –

Street pedlars

Shops

Services

Market

Agriculture

Commuters

Industry

University

Military
Schools
Xuan Mai offers a well-structured and organized public educational system. It provides kindergartens, Primary Schools and High Schools. The pupils have to wear uniforms according to their level of schooling. While the old and new village have their own kindergarten, the higher schools are visited by pupils from both parts of Xuan Mai.

Military
The military complex extends over a large area. It comprises two small bases, one of them containing a training campus. For the most part, the military areas are controlled by strict security. They act as independent and isolated units within Xuan Mai.

University
The campus of the Forestry University was relocated to Xuan Mai. The educational institution operates as an important employer with around 325 people working there. The university’s main field of study is the resource management of Vietnam’s environment. There are students from all over Vietnam who usually only stay for their studying period and then move away once more.

Administration Office
The administration office that brings the old and the new part together on a political level. It is in charge of all the administrative processes, the social work, the provision of electricity, the land planning as well as of all kinds of judicial issues. All residents are registered at the administration registries.

Pagoda
The pagoda is located in the old part of Xuan Mai. It is used for political as well as for religious purposes. It is not only the place where the political assembly meets, but serves also as a location for spiritual rites of the Buddhists.

Marketplace
The Market can be considered the salient connecting point of the different settlements. On the one hand, it represents the place where people from the old and from the new village encounter and exchange with each other. It constitutes the social center of Xuan Mai. On the other hand, the market is the main trading place where industrial products such as clothes, household goods and processed foods as well as agricultural products (predominantly rice, meat and all kinds of vegetables), are offered. While the industrial products are imported from throughout Vietnam and even from abroad, agricultural goods come from Xuan Mai itself or the surrounding region.

Medical Clinics
Xuan Mai is well provided for with medical coverage. It has three main clinics: the Military Clinic 24, the Xuan Mai Public Clinic and the private Quang Hang clinic. Primary and common diseases are treated locally, while more complicated operations are usually transferred to Hanoi or to other bigger cities.
Electricity
The electric system is supplied by the state and is generally in a good condition. The electricity network was introduced in the late eighties. Ever since, all the households are connected to it. It reaches even to the old village. The residents have to pay charges according to their amount of consumption.

Water
There is no public water supply system in Xuan Mai. The houses either need direct access to the groundwater or store water in tanks. Most of the inhabitants use filter machines in order to gain clean drinking water. Since there is no sewage system, a huge amount of water ends up being drained into the ground, potentially polluting groundwater.

Connectivity
Whereas most residents, even in the traditional, old village, have both a mobile phone and a TV, only a few own an individual computer with Internet access. Some villagers regularly visit the local Internet café. Most people watch the news on TV or read it online. Although there are numerous news agencies, this service is not often used. Staying in touch with the outside world is relatively easy.

A Hierarchic System
The residential areas of the old village and the new Xuan Mai are divided into different units. The inhabitants of each unit elect their representative. The representatives of these units meet on a monthly basis in order to discuss current issues. Every 2.5 years, they elect a new chairman. He and the communist leader, who is appointed by the communist party, meet the different ministers of Xuan Mai on a regular basis. Xuan Mai has eight Ministers which are in charge of the different departments.
Welcome to Xuan Mai

The people who live alongside the road are mostly migrants from the surrounding areas. Only a few of them grew up in Xuan Mai itself. Its great location on a prominent roadway is the main reason for this development.
Different Origins

Out of twelve interviewed households, only one resident family comes from Xuan Mai itself. They had moved from the old village to a new house along the street. The other households mostly come from the other regions of the Red River Delta. The inhabitants of one house had migrated from as far away as Ha Tay Province in the South.
The Land Market

In Vietnam, land is under control of the government. The government allocates the land to organizations and individuals by granting so-called “Land Use Rights.” It also elaborates zoning plans in order to define the different types of allowed land use. An immense increase of demand for building land can be observed, especially along arterial roads, accompanied by a significant decrease in demand for agricultural land. As a result, the government reluctantly ends up transforming more and more agriculturally purposed and fertile land into building zones (a decision process directed by demand). Further interventions by the state such as for example the release of Master plans, e.g. the one for Xuan Mai, have great impacts on the land market and further proliferate informal “re-purposing” of agriculture into real estate. Speculation boosts the market forward into a fragile and risky game.
The Land Market in Vietnam is divided into two differently organized submarkets. The primary market is controlled by the government. The state allocates land at low non-market prices to companies and private persons for permanent and sustainable use by granting the land use rights. Consequently, the second market comes into force. The land use rights are traded amongst individuals. The price is based on the relation between supply and demand.

### Primary market
- Government allocates land use rights
  - State-fixed price
  - Prices
- Distribution of certificate of land use rights
- Individuals
- Farmers
- Company
- Individuals

### Secondary market
- Trade with certificate of land use rights at market price

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**Land Use Rights**
The land use rights are allocated by the state for either agricultural or residential purposes. They are defined by the so-called land law. The holder is provided with certain rights such as the right to lease, to inherit, or to trade the land. The land use rights are written down in the “Land Use Certificate” which the government issues. This certificate comprises of the name of the owner, the exact plot size, location and the allowed use of the land. This document is used when trading a particular piece of land in the open real estate market.

**Dual System**
The Land Market in Vietnam is divided into two differently organized submarkets. The primary market is controlled by the government. The state allocates land at low non-market prices to companies and private persons for permanent and sustainable use by granting the land use rights. Consequently, the second market comes into force. The land use rights are traded amongst individuals. The price is based on the relation between supply and demand.

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**The Street, a Price Affecting Factor**
Since the plots directly on the street are the most favored ones, the prices for them are accordingly the highest. The more distance there is to the main street, the lower the prices are. A second price difference can be observed with regard to the intersection. In other words, the nearer to the intersection, the more prices sky rocket. The prices for a plot nearby with street access are quite expensive compared to the same plot located only a bit further inward. It is interesting to note that an adjacent house or development doesn’t have any influence on the price of a plot.
There is a zoning plan for Xuan Mai that defines all the land according to its use. It is made top down by the governmental bodies in Hanoi, and is extremely hard to change, and when that occurs it is only in very specific cases. If you want to transform agricultural into residential land, you have to undergo a complicated and drawn-out procedure. In reality, the zoning plan is in accordance with its present building situation (a kind of “after the fact” document).

Land Subdivisions
After land allocation by the state, land owners start subdividing their lands, especially the precious and most-wanted parcels directly on the street. The owners either sell parts of their plot to foreigners or pass some fragments of the land down onto their children and their new families. Nowadays, a permission is required to divide the plot. An officer measures the new plots and issues new certificates of land use rights. At the end of this process, a formerly large plot is transformed into several smaller and longer units.
Building Processes
The designing and building processes are organized informally and no professional education system exists to train people in the building crafts. This knowledge is rather passed on from one person to another, directly on the job. In Xuan Mai, the construction industry is booming due to the migration and concentration of people settling along the prominent country route. There are only some restrictive laws that concern the building of a house. First of all, it is only since 2012 that one is required to apply for a permit to construct a residence. Further restrictions in Xuan Mai for instance are that one is not allowed to build over seven floors. The buildings that are constructed show clear influences of what is referred to as the ‘French colonial style’ on the facing facades. In this seeking of facade “identity,” these representative facades end up creating a specific, yet paradoxically uniform street appearance.
The Copy-Paste Approach

A person building a new house is either inspired by houses in his neighborhood or houses he has seen in Hanoi or other more “metropolitan” centers, but what can easily be detected is an all around referral to an interpretation of the former French colonial architecture, seen as an ideal of both beauty and status. The design and structure always follow the same parameters. In most constructions, there is no architect involved, and the designs and floor plans are defined by the owner himself with the help and knowledge of the builder’s chief. After the Administration Office issues the building permit, construction can start. The houses are built in concrete and brick structures which are then covered in plaster finishing. It lasts about 5 months, the process of construction for an average-sized house from beginning to the moment of moving in.

Influence of French colonial architecture

Influence of already existing envelopes

2. Sketch of the floor plans

Technology of Construction
**Learning by Doing**

The owner selects a company boss to carry out the works. Together they discuss the building ideas and make a sketch, all the while drawing influences from already existing buildings. The company boss, who himself usually has no professional education, employs 4 to 8 builders, who are "learning by doing." A supplier delivers the materials, which are usually charged by quantity in weight. There is no insurance for the workers even though a lot of accidents happen on site due to unsafe working conditions.

1 house costs about 820,000 Dong / m³

### Materials

Most of the material comes from material suppliers located along the road to Hai Phong. They deliver the material to local distributor shops in Xuan Mai. From there, the material is brought to the construction site. One ton of cement costs around 1 mil. VND which corresponds to about 48 USD. In the past, people primarily used bamboo and timber; today they employ concrete skeletal structures infilled with brick walls.
ON THE ROAD

In conclusion, we attempt to uncover the reasons behind this heavy migration to roads and its impact on the changing society of Vietnam, since it is clear that this new phenomenon is closely related to another kind of living which now seems to be widespread in the Delta, but is nevertheless quite recent and still only loosely defined. The network of these settlements along the roads defines a micro-urban system in the countryside, that starts to become independent from major urban centers. The road becomes not only the center of trade but also is the location of a new lifestyle. As a consequence, everyone is eager to benefit from this opportunity and thus relocates. This process has been consistent ever since the Doi Moi reforms. This transformation of the landscape is entirely unconventional, and the old understandings of urban and rural centralities is no longer adequate in helping to understand this new occupational form on the territory.
Neither Fish nor Fowl

On the basis of the previous arguments, Xuan Mai today is neither a village anymore nor (yet) a city. A clear definition is impossible since the conventional categories seem not suitable to describe this new type of settlement. Both elements of a village as well as characteristic features of a city are recognizable. To conclude, Xuan Mai is a settlement emerged around the crossing of two roads that it has imbued with definite street characteristics, with a market as the geographical and social center coupled with a rather modern urban infrastructure. Its inhabitants work in all three economical sectors. Consequently, the residents are socially diversified. The community is organized as a consistent political entity.

The Old Dichotomy in Change

Originally, the terms “town” and “countryside” could be seen as polar opposites. In the Middle Ages, the border between the city and its surrounding area was clearly defined by the city wall (as can be observed also in old Xuan Mai). Each side had different rights, employment and living conditions. While the rural dwellers supplied the city with food and commodities, the city offered manufactured products and services in return.

The rural-urban dichotomy intends to define two contradictory parts that differ on several levels including occupational and environmental differences in the size of population, as well as in the social stratification. However, such a clear-cut division is not possible anymore today. The boundaries between the two poles fade increasingly since the countryside features more and more urban characteristics.

How is Xuan Mai a Village?

One can call Xuan Mai a village because of its rural surroundings. Since it is completely bordered by rice fields, the agriculture is still an important characteristic. Furthermore, it’s structure defines it as a village. The whole settlement has developed along the main street with a center in the middle, the market. This fine grain development fails to evolve to include a secondary scale of content, larger institutions, culture, public spaces, elements that deliver urban hierarchy. As such one could say that its essence is still quite rural, with a few necessary economic adjustments in the sense of how one earns money.

How is Xuan Mai a City?

Firstly, Xuan Mai can be called a city because of its hierarchy and diversity in infrastructure. It offers a variety of different services. Secondly, there is wide range of employment types. Both the secondary as well as the tertiary sector are strongly represented. Consequently, there is social diversity. The whole settlement is organized as a political entity. In addition, except from the old village, Xuan Mai reflects the anonymity of a city. People may know their next-door neighbors, but overall the communal life is rather impersonally organized.

Neither Fish nor Fowl

On the basis of the previous arguments, Xuan Mai today is neither a village anymore nor (yet) a city. A clear definition is impossible since the conventional categories seem not suitable to describe this new type of settlement. Both elements of a village as well as characteristic features of a city are recognizable. To conclude, Xuan Mai is a settlement emerged around the crossing of two roads that it has imbued with definite street characteristics, with a market as the geographical and social center coupled with a rather modern urban infrastructure. Its inhabitants work in all three economical sectors. Consequently, the residents are socially diversified. The community is organized as a consistent political entity.
Abandoning the Fields
As we have seen in the previous chapters, people move away from the rural to more developed areas. As a consequence, big parts of the Red River Delta, especially the surrounding areas of larger cities, get more and more urbanized. The new settlements act as a filter and buffer for the city. It absorbs a huge amount of the rural-to-urban migration. This development has also a profound impact on the living structure of the people. The old characteristic features disappear and are replaced by new parameters which define the new urban (for lack of a better word) lifestyle.
Two Centers of Attraction
You’ll find the highest density of people in Vietnam in the area around the two metropolitan cities Hanoi and Ho Chi Minh City. People increasingly move from rural areas closer to more urban regions. In addition to this development, there is a migration flow from the north to the south.

Increase of the Urban
Over the past 60 years, the population has continuously grown. The percentage of the urban in comparison to the rural population has risen as well.
Natural Growth
Due to the population increase in recent years and still to come, settlements grow permanently, in particular the ones situated on bigger traffic routes. Mostly, the village develops along the road in order to benefit from the additional sources of income. The villagers use the preferred location to open a shop and offer some kind of service for those who reside in the village or the ones which pass by.

Pull Factor
The government is in charge of the land planning and allocation. Therefore, it has to provide the industry and other companies with land. In order to enable the flow of goods, those businesses ideally have to be located on bigger traffic routes. In some cases, the government has to transform agricultural into building land. In return, it compensates the former owners, the farmers, financially. The business creates new jobs and thus stimulates workers and service providers to settle down in the surrounding area.

Reasons for Migration
We could find three main instigators of people settling on roads: inability to settle in urban centers, exploitation of opportunities along newly built roads, and new sources of employment (i.e. industries).

Second Choice
A lot of rural inhabitants want to move to a larger settlement since the income from agricultural increasingly shrinks. Only a few actually manage to settle down in the cities themselves. Firstly, the space in the city is sparse and expensive. Secondly, it is quite difficult to get a permanent living permit for the city (as in China, one still needs a permit in order to become an urban resident). Consequently, people settle down along arterial roads in the surrounding area of the city. From there, they either commute to the city on a daily basis or they find an employment in the outskirts.

Rudimentary Logics
We defined three typologies for the different emergence of the new settlement type. First of all, they appear along important traffic routes leading out of larger cities. Further, they can be found near enterprises and industries that are usually located on so-called highways. However, they also emerge on smaller regional roads, that are connecting smaller settlements locally.
Decrease of Interest in Agriculture
Since it gets harder to earn enough money for a living solely with the work offered by agriculture, people try to find alternative income sources. The street inhabitants work either in the secondary or tertiary sectors.

Loosening of Old Family Structures
In the original farmer family every member worked in agriculture. As this is no longer possible, the family structure has changed significantly since everyone has his own and different occupation. Therefore, the family life has disbanded profoundly.

The Modern House as a Status Symbol
The modern long-house seems to be the mostly desired living form. It reflects the urban lifestyle and thus stands as a symbol for a social “upgrade.”

Access to Social Infrastructure
Nowadays, more and more settlements have improved access to infrastructure and social institutions. Primarily because of the improved and widespread mobility. With regard to education, this leads to an overall higher educational level, also for the rural inhabitants. As a result, this education opens up employment opportunities.

Increased Mobility
Since individual means of transport are becoming increasingly affordable, almost every villager now has access to it. This results in the reductions of the distances and in a higher flexibility, spurring migration on. One person is not bounded to only one place anymore.

Professional Choice
Since Doi Moi, the process of liberalization has started. As a result of this, free choice of profession was introduced. Each individual is now able to define his or her own way of living. This opens up new perspectives especially to the youth. Since they do not have to carry out the work of their parents, the young people in the rural areas are eager to leave the countryside in order to find a different employment as an alternative to working the fields.

A New Way of Life
Migration is both a cause and a result of a new way of life in the Red River Delta. It is a direct consequence of the Doi Moi economic reforms, which have created a field of opportunity for the Vietnamese countryside, not only for its urban centers. Here we attempt to map out the factors that contribute to the emergence of this lifestyle that one could dub “rural urbanity.”
COMMENTARY
MIGRATION TO ROADS

Rural migrations have begun to significantly transform the Vietnamese landscape. Once characterized by the still patchwork of sequential water bowls in which to cultivate rice, today the countryside is more often than not experienced as a chatty street front, superimposed upon the silent agricultural landscape now framing its hinterland. Movements and tendencies of people are legible in this newly emerging landscape ripe with individual colorful facades crowning diversified street shops which are slowly dotting the wide expanse of the road infrastructure network expanding all across the Delta. One thing is for sure, this is not the typical city that grows through an accumulation of wealth, it is a homogenizing looseness that spreads all along the major lines of connectivity. What emerges from investments into roads are not highways connecting point A to B, but street fronts, extending from old urban and rural definitions toward new forms of spatial appropriation, forms only loosely embedded in the landscape, now describing it without too much interaction with what it used to be. However disconnected the way of life on these streets seems (and is) from the traditional order of life in the agricultural hinterland, this new phenomena in fact negotiates between the old dichotomy of city vs. countryside, and a curious, albeit precarious way of life seems to be in its becoming, one that is detached from former “limits” imposed by the territory, and the pre Doi Moi laws governing the movement of people.
QUÁ TRÌNH MỞ RỘNG ĐÔ THỊ HÀ NỘI

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II

METROPOLITAN AMBITIONS
URBAN EXPANSION OF HANOI

GROWTH VS. PLANNING
Hanoi - Capital of Vietnam
City Expansion
Utopian Visions - Masterplan 2020 - 2050

URBAN COLLAGE
Growth in the outskirts - case study Ha Dong
Local Villages - Forced Urbanism
Socialist Stamp - Imminent Verticalization
Upgrading Hanoi - A New Living Standard
Infill - Individual Pragmatism

HETEROGENEOUS REALITY
Mechanisms of Urban Expansion
GROWTH VS. PLANNING

A group of Hanoians are sitting on stools in the middle of the sidewalk, enjoying a local lunch. A civil servant from the Ministry indulges in phở, a traditional Vietnamese noodle soup, while his colleague from the Construction and Planning Institute is showing him where the next urban development of Hanoi is about to be implemented. These nontransparent flows of information are nowadays worth a lot of money. To build a house next to a marked out development site and sell it after the land prices have risen would bring substantial profit.

A few streets down, cranes operated by the construction companies Vinaconex (local) and Posco (Korean) already stretch to the sky as Vietnam earnestly attempts to hop onto that train with the other Asian Tigers. With assistance from foreign investment numerous new housing areas are popping up on former public land, luxurious villas are multiplying while high-rise apartment towers outline a new silhouette for Hanoi. These upscale islands promise a western style of living embedded in a complete landscape of accommodating complimentary facilities. An artificial and clean environment of which the aforementioned street-lunching Hanoians can’t even conceive of. They organize themselves on a small scale, developing their houses incrementally around those islands. Hanoi is consciously redefining itself. This is clear in the (overly?) ambitious Masterplan for Greater Hanoi 2020-2050. This top-down tabula rasa planning document hardly includes the historical substance of the city, nor its long tradition of self-built housing, which still accounts for most of today’s development, and still determines the city’s character. Will it be possible to find a balance between the history of the city and the machine of liberal capitalism, between state intervention and a pluralistic society, between utopian dreams and unaddressed reality?

The aim of this chapter is to give an overview of the city’s development, which was fueled by various foreign impacts that have generated a prosperous, intricate and layered landscape. Furthermore, we would like to illuminate current patterns of urban occupation and which mechanisms are behind the proclaimed change in lifestyle, particularly in reference to the latest city vision for Hanoi, the aforementioned masterplan.
Hanoi - Capital of Vietnam

Hanoi is the oldest, still existing capital of South East Asia and the second largest city of Vietnam after Ho Chi Minh City. In October 2010, the city officially marked 1000 years since its founding.

1 as of 2010
City Expansion
During its 1000 year long history Hanoi was exposed to various cultural influences and was confronted by several foreign ideologies. Occupied at one time by Chinese dynasties, serving as capital of Indochina during the French rule, occupied once more by the Japanese during World War II, in its recent history it has defined itself through the communist ideology imported from the then cogent USSR, countering the influence from the US, which successfully pervaded Saigon (Ho Chi Minh City today). These constant and disruptive moments created a heterogeneous city which has now started to expand and jump scales rapidly.
Hanoi’s history as the Vietnamese capital began already in the eleventh century. The city was divided into two parts: the royal city (Hoang Thanh) and the commoners’ city (Kinh Thanh).

Old City Center (1000 - 1700)
The old quarter, near Hoan Kiem lake, has the original street layout and architecture of old Hanoi. Each street then had merchants and households specialized in a particular trade, such as silk, jewelry, etc. The street names nowadays still reflect these specializations. Although few of them remain exclusively in their original commerce.

French Quarter (1700 - 1940)
During French colonization, Ernest Hébard proposed a masterplan which should extend Hanoi almost twofold. Hébard’s plan was never fully implemented, but the area which is called today “French Quarter” is structured with a generous grid pattern with 20-30 m wide avenues.

Red Belt (1945 - 1986)
This epoch is marked by the socialist stamp of collective housing - called Khu Tap The (KTT). With the USSR as a role model, the “micro rayon” approach was meant to accentuate the collectivity of living together with lots of common in-between spaces.

Doi Moi (1986 - Today)
Since the connection of Hanoi with the global world market economy in 1986, achieved with economic reforms (doi moi in Vietnamese), the real estate market emerged in its current semi liberalized form. The city has developed now as a highly complex urban environment with multiple private interests playing out their moves in the field.
Utopian Visions - Masterplan 2020-2050
The main goal of the latest Masterplan of Hanoi is to control urban growth. Towards this goal, the PPJ (Posco, Perkins Eastman and Jina), a private "master planning" enterprise, imagines Hanoi as a city which needs to make a giant leap in scale and intensify its space usage so that it could deal with the already existing density. Part of this new master plan was the zoning of 49 new smaller zones (mainly on the Southern bank) instead of the two large new areas (Tu Liem and Dong Anh).
Expansion of Borders

Hanoi's borders changed several times in history due to foreign occupation and influences. Since the global opening up to the West with Doi Moi, Hanoi has incrementally been enlarging its administrative borders. The biggest expansion was made in 2008 as the city areas was tripled in size to a total of 3,344 km². With this, Hanoi is now one of 30 biggest cities in the world, although only 40% of this surface in reality is urbanized.

Enlargement of Metropolitan Borders

1991
15 outer districts (880 km²)

2008
18 outer districts (3,344 km²)

Enlargement of Inner City Borders

1991
4 inner districts (40 km²)

1995
7 inner districts (85 km²)

2003
9 inner districts (186 km²)

2008
10 inner districts (233 km²)
The vision recommends the preservation and upgrading of the inner historical core (1) and its enlargement with an extended urban core ring (2). The greenbelt along this urban center is planned as a big green corridor (3) to protect highly productive agriculture land still existing around the city, which has found itself under threat of urbanization. Three smaller specialized economic centers (4) and five large scale satellite cities (5) are planned further outward in order to “release” some of the pressure from Hanoi. They are intended to function autonomously with independent education centers, health care systems etc., while still remaining well connected to Hanoi proper with adequate infrastructure. At this point most people sceptically regard this proposal as a dream, stating that it is not based on social and economic analysis and therefore it is already unsuccessful with regards to protecting the green belt from further aggressive urbanization and speculation.

**Masterplan 2020 - 2050**

The administrative borders of Hanoi, as well as the area included in the Masterplan 2020 - 2050, are meant to follow a geographical, and also cultural logic and tradition.
Realistic Growth Rates?
The Masterplan 2020 - 2050 expects a rise of urban population from 2.65 mil. to 6.3 mil. people in the next twenty years. The reality doesn’t reflect such a rapid expansion rate as has been predicted. For example Xuan Mai, 30 km away from the inner core and a future “economic town” with an expected population of 60,000 people shows nowadays a population of around 18,000.

The “satellite urban city Soc Son” is supposed to comprise of 220,000 inhabitants, but today the whole Soc Son district has barely more inhabitants than Xuan Mai.

"The city’s authority has targeted an annual economic growth rate of 12-13% in the 2011-2015 period, 11-12% in 2016-2020 and 9.5-10% in 2021-2030."

"The city aims for more than 55% of its labor to have professional skills by 2015 and 70-75% by 2020, creating a high-quality training centre for the country and the region."

"Hanoi is also striving to generate 130,000-140,000 jobs each year from 2011 to 2015, increasing to 155,000-160,000 in the following five year period (2016-2020)."

Source: http://www.nhandan.com.vn

THE CITY'S AUTHORITY

HANOI

\[ \text{Urban population} + \text{Rural population} = \text{Total population} \]

\[ \text{Rural areas} 3,000,000 \]

\[ \text{Expected Population 2030} \]
URBAN COLLAGE

We have seen how growth is tackled on paper, in this chapter we go to an area within Ha Dong (one of Hanoi's urban districts) to sift through it's different layers of urban fabric: older villages still remaining that the city has grown to incorporate, new urban developments, KTTs, “informal” infalls and the like. All of these components together describe a multi-layered urban reality which is made by the mechanisms of all of the separate parts somehow coexisting together and we hope that this analysis sheds insight into how urban growth is actually happening on the city edge.
Growth in the Outskirts - Case Study Ha Dong

The city is expanding in a hand shaped form from the city core along the main roads. Ha Dong is located along highway 6 heading south-west to Ha Tai province. The capital of this province was the largest suburb before it became part of Greater Hanoi in 2008. A lot of top down planned new urban areas are developing in this area, while on the smaller scale individuals densify the existing village structures with self built housing connecting in a profitable manner the existing with the new.
Hanoi city center
Chuc Son Town
Ha Dong Masterplan

One could say looking at the Masterplan that the northern and southern part are almost divided into an urbanized and a rural part where villages and agricultural land still exist. The case study concentrated foremost on the rapidly urbanizing northern part (colored).

Case Study Perimeter

The whole of Ha Dong is framed in black while the white highlighted part represents the chosen research area. In this map once again we can see that today the southern part is barely inhabited while the northern part is marked by residential use along highway 6 and a lot of new urban areas are under construction.

We extended our research area at the northern part to the third ring road to include also the access to Hanoi’s urban center, which is known to Hanoians as “First Hanoi”, while the area after the third ring road is called a bit pejoratively “Second Hanoi”. Ha Dong has been facing rapid urbanization since it became part of urban Hanoi in 2008, showing that land designation by the state still plays a somewhat steering role in development.

Ha Dong Masterplan

One could say looking at the Masterplan that the northern and southern part are almost divided into an urbanized and a rural part where villages and agricultural land still exist. The case study concentrated foremost on the rapidly urbanizing northern part (colored).
2002
The building mass is concentrated along Road 6 which connects Hanoi with the Ha Tai province. Ha Dong as the capital of the province is the biggest suburb of Hanoi.

2008
Ha Dong becomes part of the extension planning area of Great Hanoi and is now one of the ten inner districts.

2009
New urban areas are implemented on agriculture land and new infrastructure roads are enlarging the physical borders while private housing starts rapidly to proliferate in the area.

2010
The densification process continues to merge the new urban areas, the existing villages and the new infrastructure roads by spontaneous infilling processes.

Along Road 6
Ha Dong first urbanized along Road 6, where shops share the street facade in the ground floor. This lively road lined by buildings opened up Ha Dongs further urbanization.
Local Villages - Forced Urbanism

With about a 1000 years of historical development, Ha Dong has had a rich handicraft culture in silk production and metal forging. Located along a riverine, the villages still function like autonomous islands that are being swept over by urbanization (as open land is anyway more easily expropriated).
Village Structure

Traditionally the village was surrounded by a bamboo fence. The entrances to the villages were marked with gates (1). The village center had a water source surrounded by a pagoda (2) an administrative office building (3) and a local market place (4). Most of these are still readily functioning in the villages today.
Van Phuc Village
This village was well known for its traditional silk production. The opening to the West brought not only new business relations overseas, but also a touristic attraction for visitors. Van Phuc has become one of the richest villages around Hanoi.

Da Sy Village
Da Sy is situated outside Hanoi in the urban district of Ha Dong and famous for its metalwares. The first impression when entering the village is a rush of excitement at the sounds of hard work and enthusiasm - a chorus of hammering on family anvils.
From Village House to Shop-House

Step 1 (15th - 16th cent.): Village houses along the roads with shops facing the street.

Step 2 (17th cent.): Division of the parcel into three plots. The houses move closer and are divided by fire protection walls.

Step 3 (18th cent.): The backyards are replaced by areaways and the buildings merge into longer buildings, while the shops at the ground floor have an open front facade.

Step 4 (19 - 20th cent.): Densification of the plot and building up to four to five stories. The shop houses are still organized like village houses but the areaways disappear.
Tube-House Type -  
Floor Plans, Section, Elevation
### Certificate of Land Use and Ownership

The Vietnamese citizen cannot own land because it is the property of the people. But it is possible to own housing structures and lease land from the state. The certificate of land use and ownership is a document which is given by the government when the constructed buildings went through all the required construction process steps.

#### From State Controlled to Free Market Economy

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1975</td>
<td>National Housing Program was implemented to improve housing conditions</td>
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<tr>
<td>1986</td>
<td>Doi Moi - New land and property ownership leads to</td>
</tr>
<tr>
<td></td>
<td>- LEGALIZATION of private houses</td>
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<tr>
<td></td>
<td>- PRIVATIZATION of state owned buildings</td>
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<td></td>
<td>- DENSIFICATION of inner core and surrounding</td>
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<td>1990</td>
<td>Opening up to the western world</td>
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<td>1991</td>
<td>Capital flows boost urban development</td>
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<tr>
<td>1993</td>
<td>Law on land I</td>
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<tr>
<td>1997</td>
<td>Asian crisis - Downturns in capital flows and slow urban development</td>
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<tr>
<td>1998</td>
<td>Law on land II - Revising and improving initial legal and policy frameworks</td>
</tr>
<tr>
<td>2008</td>
<td>Foreign investments - Revival of joint ventures</td>
</tr>
</tbody>
</table>

Certificate of Land Use and Ownership

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Reality vs. Masterplan: Local Villages Become “Urban”

With about a 1000 year old tradition of handicraft production of silk and metal-forging, Ha Dong’s villages still function like islands in the urban fabric. In the Masterplan the villages are marked as “urban residential land” with areas only for handicraft activities, mostly on current agricultural land. The tradition of the villagers producing in their backyards and selling their goods as self-managing firms to the locals are erased and a clear division of residential land and handicraft centers, serving also for touristic attraction, are foreseen instead.

1. Trieu Khuc handicraft area
2. Da Sy handicraft village project
3. Van Phuc handicraft area
4. Handicraft village industrial zone
5./6. Residential land and public service land for traditional handicraft villages
7. Phu Lam industrial zone

Ha Dong Masterplan, Villages
Socialist Stamp - Imminent Verticalization

Between 1958 to the late 1980s many socialist housing estates had been constructed by the state, the so called KTT’s – Khu Tap The. The welfare housing provision failed to meet needs and demands of the growing population, so the inhabitants had to invent ways to extend physically their living space by themselves. Nowadays a lot of KTT areas in the city are about to be replaced by residential towers (verticalized KTT) to improve the living conditions and make the areas less dense.
Khu Tap The: Remnants of Socialism

Throughout the country, a number of five story apartment complexes were built to house the military, state and factory workers and civil servants. Over time they have become appropriated and adapted by the inhabitants to become more congruent with their needs and everyday practices. The housing estates were designed as attractive living areas following a rational plan of clear infrastructure with various public facilities. Mostly due to the fact that the state was not economically powerful enough, the KTT’s suffered of bad maintenance and are in a dilapidated condition nowadays.
Narrow, Loud and Dirty

Looking to the exterior appearance of the KTTs one can already note the inhabitants imaginative ways to extend their living space with cage-like additions latched onto the existing rectangle shaped original multi storey houses. Street access remains a lively area of commerce (1), while in the interior of the blocks the inhabitants meet and gather (2). The numbered mail boxes (3) signals the anonymous living character of the KTT, as does the rigidly structured apartments distribution readable on the facade (4).

KTT Generic Type - Typical Floor Plan, Section, Elevation
Urban Transitions From Bottom Up

The inhabitants of the Khu Tap The try to find innovative and inexpensive ways to extend their living space. Beginning with the ground floor extensions it took very few little time for the upper residents to get similar ideas.

1. Planned and built KTTs with green space in between
2. Moderate extensions beginning with the ground floor
3. Significant facade extensions on all levels
4. Illegal private housing filling up the open space

Self-Help Extensions
Verticalization of the KTTs

In order to re-densify the city core, the old KTTs are in transition. Traditionally there were no shops planned in a KTT. The recently transformed KTTs have been dubbed “verticalized KTTs,” where the old KTT is demolished fully or partially and replaced by a residential tower (1), and the former inhabitants of the ground floor of the “old KTT” are shifted around to the 5th floor (2) to make room for commercial ground space on the street. The verticalized KTTs provide more privacy and more comfortable living standards (3) than the “bare necessity” older generation ones.

Interview with a KTT Inhabitant

A former governmental worker has been living with his wife together in a 24m² apartment for the last 35 years. Due to his high position at work he was allowed to own two apartments as an exception.
Reality vs. Masterplan: Transformation of the Socialist Stamp

Zooming into a KTT in the Ha Dong area, we find one of the biggest renovations of this type planned. High-rise buildings of over 20 storeys and modern apartments close to central Hanoi should successfully upgrade this area where currently the old socialist typology stands. These projects reflect the new urban ideal, but not the reality of the possibilities of the majority of Hanoi's residents.

1. New urban project Than Xuan Bac

Ha Dong Masterplan, KTTs
Upgrading Hanoi - A New Living Standard

A new way of living - targeting the well off part of society - is emerging on a large scale in Hanoi, disproportionately so when compared with buying power of the population. A series of foreign investors build complexes set to imitate western upper end living standards, sending a clear status symbol across. “New urban areas,” as they are referred to, often comprise of only three types and their slight stylistic alterations: villa, tube-house, and the residential tower.

1. New urban central office (Vinaconex)
2. Van Quan new urban area (HUD)
3. Bac Ha NUA (Constrim Holdings Viet Nam)
4. Vietnamese Overseas Village (TSQ - Polish Company)
5. Boo Young Apartment (Boo/Young - Korean Company)
6. Ngo Thi Nham NUA (Vinaconex)
7. Van Khe NUA (Song Da Finance JSC)
8. U Silk City (Song Da Thang Long Company - SUDACO)
9. Duang Noi A NUA (Nam Guom Company)
10. An Hung NUA (An Hung Joint Stock Company)
11. The Pride Apartment (Hai Phat Company)
12. Park City (VIDC - Venture Company, Vinaconex, Malayan Perdana Park City Company)
13. Van Phu NUA (Van Phu Invest)
14. Daewoo Cleve (Inpyung Company - Korean Company)
15. Culture and sport park project
16. Xa La NUA (Lai Chau Construction Company)
“Be the First to Live in Hanoi’s First-of-its-Kind Visionary Township”

“Designed with the concepts and principles of Kuala Lumpur’s highly successful Desa Park City township, Park City Hanoi will reward you and your family with a wholesome, decent and healthy environment. It will be a vibrant and thriving community unlike any other—one that will be the source of your pride and public recognition. Be the first to enjoy the offerings of the first-of-its-kind visionary township of Hanoi.” So goes the sale pitch, embodying the ideal that is marketed and promoted in most of these developments playing heavily on the demand for social status of the up and coming rich. (taken from Silk city catalogue 2010)
Villa
An example of high class living standard within a spacious free standing house with a garden completely rendered with a stereotypical interior eclectically assembled to show off prestige (i.e. the presence of large chandeliers or slick furniture and art pieces). Only well off people are able to afford such exclusive residences. The average price is about 1.5 mil. USD.

“Tube-House”
A house typology which alludes to the traditional housing type of Vietnam with its structure: narrow but long floors stacked upwards connected in a row. The large windows in the front and back and a “calmer” exterior design hint at the difference, not to mention the private “public” space that it opens up to. Average price is about 500 000 USD.

Residential Tower
The residential tower has come to be a universal global signal of state of the art modern living. It represents the transition to modern society on every continent. The buildings offer exclusive views and a “westernized” interior design to indicate prestige. And lots of space. The average price of an apartment is about 200 000 USD.
Residential Towers Make the Skyline

Most of the high-rise buildings in Hanoi are not, as one would assume, signs of an emerging business center. Instead of office space, residences are the deal of the day, leaving us wondering who is moving in, and what, if anything besides real estate, is steering the economy of the city. The prominent “Landmark Tower” visible here drops a great shadow, but in fact remains hardly occupied.
Living on Construction Sites

Construction workers represent a very cheap and unskilled labor force. As they stay only short term and in order to save up money, they choose to live directly on the construction site. Towels and cardboard seem to be the only material used to create a bit of privacy.

Migration

New urban areas will continue to be built. The labor which is needed for the construction will come from all over the country in order to work cheaply to finish the projects in time. Clearly one of the biggest reasons for migration, short-term work lets people come into urban agglomerations as construction workers. Those people are mostly part-time farmers, who are able to work in the city outside of harvest.

<table>
<thead>
<tr>
<th>Work Type</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Permanent work</td>
<td>20%</td>
</tr>
<tr>
<td>Long-term work</td>
<td>20%</td>
</tr>
<tr>
<td>Short-term work</td>
<td>40%</td>
</tr>
<tr>
<td>Others</td>
<td>2%</td>
</tr>
<tr>
<td>Marriage</td>
<td>1%</td>
</tr>
</tbody>
</table>
Housing Stock and the Actors Involved

1960-1980

- COLLECTIVE HOUSING
  Providing 20% of state workers with residential blocks
- SELF - HELP
  Compensating for the lack of housing by private enterprise
- LEGALIZATION
  Partially legalizing the ongoing unofficial construction of private houses

1990-2000

- PRIVATIZATION
  With the land law policy of 1994, people become state house owners
- HOUSING BOOM
  From 1991 to 1994, 70% of 700,000 m² added floor area built by private construction, 20% on a legal basis
- GREY ZONE
  Private building practice oscillating in a zone between legality and illegality
- ILLEGALLY
  80% of the newly built houses still without construction certificate

2000-now

- PRIVATIZATION
  By 2004, 40% of all state owned housings are privatized
- JOINT VENTURES
  In collaboration with private and foreign companies, the state builds large-scale urban developments providing housing and infrastructure
- SELF - HELP
  Private individuals are still key players making a lot of new development on an individual small scale basis
- GREY ZONE
  Private building practice between legality and illegality
- ILLEGALLY
  Still a lot of houses are built completely illegally due to the complex process of getting the construction permission.
Local and Foreign Investment

Foreign investors who participate in the new commercial housing projects often have to work in a joint venture with a state-related firm: the foreign investor provides the money, the local company the approval. The two largest Vietnamese enterprises developing housing in Hanoi are the “Housing and Urban Development Corporation” (HUD) and the company “Viet Nam Construction Import and Export Corporation” (Vinaconex). Both function under the Ministry of Construction but are also active in the non-state sector in which they have benefits of commercialization.

Money Under the Table

40% of the entire construction sum is normally used for getting a faster approval. Furthermore, a certain amount of the residential areas will be also given to the state workers in decisive positions.

Speculation

People use the new luxurious housing stock to profit from rising house prices. Often they buy for example not only one apartment, but three or four and announce it on the same day on the free market to resell it for a profit.
Compensation

New urban areas are built on former agricultural land or on already illegally built residential areas. Either way, the state compensates the relevant party with money and/or land for building a new home. The problem is that often individuals in this way come into a lot of money and don’t know how to adapt, especially since their livelihood is no longer possible. Money is quickly spent, after which the loss of job prospects emerges as a reality. At the end they even end up in more debt than before the “money blessing” by the state.
The Masterplan already reserved several plots for new urban areas in the exact shape of the project which is an indicator that the projects were implemented before the Masterplan was made.

Ha Dong Masterplan, NUAs
Masterplan vs. Reality: Connecting NUAs to the Center

Newly planned roads, currently under construction follow the planned infrastructure of the Masterplan and are mainly connecting the new urban areas to each other and to the city center. A lot of the roads are paid by foreign companies.

Masterplan Ha Dong, Infrastructure
Individual Pragmatism

Around new urban areas, villages, next to the riverside or along the roads, self-built houses by individuals are filling up the undefined in-betweens. The main motivation for the development is profit from offering business or services to the formal and preexisting residential areas.
Seeking out opportunity provided by the urban life, people move close to the city. Areas around the river are mostly unbuilt due to flood risk. The migrated people take this risk and settle informally (1). Several times a year they are forced to move during flooding periods. Therefore, they live in very simple and hastily made self-built houses (2). Their main income is still agricultural labor (3/4).

Densification Process Along the River
People settle around the river because they require access to water for paddy field irrigation (1). Over time, markets pop up along the road and appear as an indicator of migration. More and more people densify the riverbanks to be part of the urbanizing area (2). Finally, a change in the work sectors from farming into trade and guilds lets the area consolidate fully and supplant the last of the agriculture fields (3).

Riverside
The change in working sectors is noticeable. Agriculture fields disappear gradually.

Ha Dong becomes a Hanoi city district, and growth proliferates further.

A village cluster located along the river, surrounded by rice fields and lakes. The villages are connected with narrow roads.

2005

2008

2002

2005
**In the Vicinity of the Urban**
The surrounding land of new urban areas experiences land value increase as a project is implemented. Those who know first where an urban area will emerge, namely state workers, buy up land around these future developments. Often, private houses are built before the construction site is officially marked, and then resold after it is built.

**Symbiosis**
Already in the time of emperors, the old quarter was providing the royal city with all kinds of services and products. Nowadays we can see such a symbiosis between new urban areas and their surroundings (1). One example is people opening up shops with building material during phases of construction (2) in order to get commissions on the project.
Street Character

Commercial zones along prominent and intensely used streets represent one of the most desirable locations to gain access to. Opening up a business with a steady exposure to passers-by ensures profit. An interesting thing to observe is that the urban life only belongs to the main road, one row behind we already find a more “suburban” character of space: quiet, clean, empty and marked with greenery.
Hierarchy of Settlements in Ha Dong

- Villages
  - House with certificate
  - House without certificate
  - Getting licence after/during construction process
  - Extension to existing building

- Socialist housing - KTT
  - Extension to existing building

- New urban area
  - Compensation houses

- Infill
  - Private house around new urban area
  - Riverside housing

- Linear house along street
HETEROGENEOUS REALITY

Today the Vietnamese urban landscape is characterized by profit oriented developments where the interests of Vietnamese and Foreign investors with close ties to the Vietnamese state are predominant. The average denizen, that embodies the rich and complex urban lifestyle of Hanoi, tries to make an existence aside from this explosion of development and the associated ideological shifts entailed with it, all the while being left with insecurity from the state. The newest version of the “Masterplan 2020-2050” seems overly optimistic not only in a statistical sense but also in the speed of the anticipated development. The progress of building construction, but also the allocation of funds from investors and mostly the identification of the people with the new urban image of the city is not keeping up with the vision. Meanwhile individual pragmatism seems the only opportunity to become a part in the city’s development process. Examples like the administration officer we mentioned at the beginning of this chapter, who on the one hand works for the government, promoting the ideas of a generic, global corporate urbanism to the likes of Hong Kong or Singapore, privately makes immense profit by building on the fringe of these new idealistically overcharged islands. Since real estate has proven to offer incredible profit margins compared to other economies of the city, Hanoians of every “status” actively pursue methods of getting just a little piece of the cake as it is passed around the table.
Processes of Urban Expansion

The state takes away agriculture fields to build new urban areas

Individuals hope for profit by settling down to new urban areas

Individuals move closer to the city

Farmers sell their products in the city center to earn money

Individuals speculate on the housing market

The state removes public buildings to re-densify the city center

The state re-densifies by verticalizing KTTs

The state aims to build in larger scale

The state implements infrastructure to connect new urban areas

The state compensates farmers for their loss of agricultural fields

Investors try to grab more land to build projects

State Investors Individuals

Construction workers migrate for short term labor into the city to help build new urban areas

Individuals open shops to make profit

Villagers sell handicraft products to earn money

Tourists visit handicraft villages

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Tourists visit handicraft villages
COMMENTARY
METROPOLITAN AMBITIONS
The capitol of Hanoi is riddled through and through with representations of the imagination of the power-holders of the country at any given time in its history, implementing what they figured the future of the city should, and will, look like. All of these attempts, from the French transposition of the European grid and boulevard city, over the typologies embodying the socialist ideology of collectivism of life, economy and public space, all the way to the current luxus drive that overestimates the consumption power of the citizens, every single one of them falls short of its ultimate goal, to remold the city into a visionary metropolis. A city with so rich an urban history, where one can read easily ideas in buildings and even in entire neighborhoods, does not, on the other hand, convince us of its cosmopolitanism. Despite efforts in various historical intervals to, one might say, violently implementing foreign typologies, and a foreign way of living, a lot of Hanoi still manages to remind us of the character of the Ancient City, the old trade quarter. One is certainly overwhelmed by the vitality and thriftiness of the local vigor that is constructing the city incrementally, in the “in-betweens” and yet in total cohesion with the large formal chunks that emerge in the city. Both energies are authentic to the essence of Hanoi, one coming from a desire to create additional value for a collectivity, one coming from a desire to maintain exactly the established way of life.
CÁC KHU CÔNG NGHIỆP
III

INDUSTRIAL PARKS
“MADE IN VIETNAM”

“DOI MOI” CHANGES EVERYTHING!
From Command Economy To Free Market Economy
Winds of Change

WHAT ARE INDUSTRIAL PARKS?
Economic Expectations
Typology

TRANSFORMATION PROCESSES
IPs as Catalysts of Broader Territorial Transformation
Outlook for an Urbanized Landscape
When Farmers Become Workers
Multifarious Working Conditions
Alternative Ways of Production
The Social Shift
New Housing Types
Lack of Dreams for the Future
“DOI MOI” CHANGES EVERYTHING!

At the end of the 80s a hyperinflation brought Vietnam’s economy to a state of desperation. In order to resuscitate it, the Vietnamese Communist Party implemented a series of new laws which is commonly referred to as Doi Moi economic reforms. These laws allow and regulate what can with some degree of reserve be called a liberal and open market economy. Loosening state control and domination in the economic sectors allowed industrialization to accelerate rapidly in the last twenty years. With foreign investment constantly increasing, the Vietnamese economy was able to grow to a formidable global contender, exploiting its cheap labor and material richness.
From Command Economy To Free Market Economy

In the late 80's, Vietnam was struggling with an economic crisis. A hyperinflation of 500% in only a couple of years badly affected the country. Vietnam's government decided to transition from a controlled state-run economy to a more liberal, free market one with a series of reforms now well known to everyone as Doi Moi. The resulting Foreign Direct Investments (FDI) that came from this move was successful in stabilizing the inflating economy. The distribution, however, of these investments went to the southern economic zone of Vietnam focusing on the economic megacity of Ho Chi Minh, more trusted for investment having enjoyed liberal economic conditions earlier as a direct result of America's involvement with Southern Vietnam. The government wrote extensive laws in order to invite foreign investment to situate in the North, including an entire series of laws on "special economic zones" and industrial parks.

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**GDP Growth**

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<tr>
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**Population**

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<tr>
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<td>66.2</td>
</tr>
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<td>2000</td>
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**Inflation**

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</tr>
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<td>2000</td>
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</tbody>
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**Decree No. 192**

1st law with general regulations for industrial parks (e.g. park location, land use)

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**Decree No. 36**

2nd law with additional regulations for industrial parks (e.g. residential area)

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**Decree No. 13**

The law on land defines the land rights and land use

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**Decree No. 39**

New Definition: industrial park and industrial cluster

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**Decree 07/CT-Ttg**

Planning stop for IP's and evaluation of the existing planning scheme
Winds of Change

Ever since Doi Moi, development in Vietnam is focused mostly on industrial emancipation, and is transforming the predominantly agricultural landscape to accommodate the industrialization process. It is plainly visible on the horizon how central the goal to industrialize is, with investment slowly being put into regional and national infrastructure, and the allocation of huge areas of land that are well connected, for industrial purposes.

In the last 26 years this has boded well for the national economy. As a consequence urbanization processes are visible all over the country. The newly emerging real estate industry is closely tied via its actors to the industrial parks, and the government, “free market” label or no, still remains ever present in all of these transactions, negotiations and executions.
Urban Growth
Vietnam is characterized by two densely populated areas: the Red River Delta in the north, and the Mekong Delta in the south. Their centers are the two largest cities of Vietnam: Hanoi in the north and Ho Chi Minh City (formerly Saigon) in the south. In central Vietnam there is a dense concentration around Da Nang, which operates as a hub between the two delta regions. The growth of the two major cities in the last 19 years has been tremendous. Ho Chi Minh City and Hanoi now comprise 16% of the entire population of Vietnam, some 15 mil. inhabitants (HCM City 9 mil., Hanoi 6.5 mil.).

Population density (inh./km²)

Urban regions
Rural regions

Rural Exodus
The Vietnamese countryside is extremely populated, however the recent trends have been toward urban centers, most of which have been administratively redrawn to reflect the reality of their expansions or to accommodate future growth (as is the case for Hanoi which has doubled its administrative area quite recently). Besides the major urban centers, the coastal settlements are also drawing in more and more migration. The percentage of urbanization in Vietnam has grown from 20 % to 30 % in the last two decades. Rural uprooting and migration has become a reality for Vietnam.
Rural Poverty
Most poverty stricken areas lie in the peripheral mountainous regions of the Delta. These are also the least populated. Population growth has meant that the countryside is less and less able to survive on agriculture alone, signaling a shift away from agriculture.

Even with these apparent shifts, unemployment has remained pretty constant, what can be said is that this diversification of income sources in the countryside results in an improved possibility to earn a living, however and as is often the case with rapidly urbanizing regions, the income distribution is not helping the worst off. Another fact to note is that overall Southern Vietnam has a better average, due to longer access to better labor market conditions.

Higher Education
Diversification of employment opportunities for people from the countryside still usually entails menial and unskilled labor, in harsh working environments. It should not be ignored that there is in fact a high demand for unskilled labor in most of the industrial enterprises and that the availability of cheap labor is one of the factors ensuring that production in Vietnam is competitive internationally.

Higher education is not easily accessible, however it is in high demand, especially if Vietnam hopes to specialize it’s industries. Currently a lot of positions that require special expertise are filled by foreigners, something Vietnam’s policies towards education can only slowly hope to change.
Import
Since the US lifted its trade embargo, Vietnam opened its economy to a worldwide market. Some of the most important emerging trading partners are China, Japan, US and Europe. The most dominant goods being imported are production goods, fuels, textiles and clothes.

Export
Goods for export are mostly raw oil, textiles, shoes and sea-food. Vietnam possesses various natural resources, however most of its exports are raw and unprocessed, as industries have yet to specialize and start placing refined products to the export market. As we have seen before, this is a question of investment, and of education.
Vietnam has three major economic regions: the Red River Delta, central Vietnam and the Mekong Delta. The two delta's are the most significant economic regions. Because of recent history during the American - Vietnam war, and the presence of the US in the South, the Mekong is farther along in establishing itself as a economic power player in South East Asia. But the Red River Delta is catching up fast. “Industrial parks,” special zones that emerge with the blessing of the Vietnamese government thanks to Doi Moi, are where all of it seems to be happening. Dozens of special zones have been implemented, accompanied with infrastructure and legal tax relief.

WHAT ARE INDUSTRIAL PARKS?
Industrialization of Vietnam

In 1990, 40% of the labor force was working in the agricultural sector while in 2009, this dropped down to 18%. The service sector has remained more or less constant with its chunk of around a third of the labor force, while the industries have doubled their share of the labor force in the last two decades, a typical indicator for industrializing nations.

Economic Expectations

As a rapidly industrializing nation, Vietnam possesses all the tell-tale signs of early stages of industrialization, from rural exodus to raw industrial production expansion. Industrialization of agriculture itself, and the reduction of the need of a high ratio of labor required to product output, however, does not appear to be evident, as Vietnam's staple product, rice, does not allow for instant mechanization in method of cultivation. While agriculture does not currently seem under threat from this exodus (as we will see in the tendency to joggle both industrial work and farming during harvest), one wonders how this increasing discrepancy will sort itself out.
Economic Engines

Industrial Parks are spread all over the Delta, their goal is to function efficiently, hence they are concentrated, however, they are also meant to function as economic boosts for their surroundings (feeding off the work force in the region, improving the economy of a region). For this reason they are often a political issue, as local provinces know the significance an IP can have for its economy. Typologically speaking, besides IPs, there are also EPZs (Export Processing Zones) which produce for export only.

Siting

IPs and EPZs require logistical benefits of good infrastructure and proximity to urban centers and ports (air and sea). They require access to a cheap labor pool, so they are often outside of urban centers, along major infrastructural corridors. In the Red River Delta these are from Hanoi across Hai Duong to Hai Phong, Viet Tri across Bac Ninh to Ha Long and from Thai Nguyen across Hanoi towards Ninh Binh via Phu Ly. However plenty of parks are scattered even in more remote conditions (probably for political reasons or because it proved more profitable).
The Industrial Park Model

An industrial park is a bounded complex that is fenced and gated. It has a main access, public and prominent (often decorated) that is protected by security (1). It is mostly located next to a trade route. Just past this gate there is usually a representative building housing the park administration (2). The park is subdivided in different sized lots. Between these lots there are access streets, parking lots, storage areas and green spaces (3) often provided by the park owner (be that state or private). The park has its own power and water supply (4). Every lot is leased by a company and separately gated (5). On these lots the companies then construct their own facilities based on requirements (type of operation etc.)

Typology

Industrial Parks follow a very simple rudimentary typology orientated around efficiency of layout. This type then variegates, based on size, access conditions, inner regulations and subdivisions, but the principle of the basic infrastructure and how to “plug” into it remain easily readable.
Considering how widespread the phenomenon of Industrial Parks is, it is necessary to take a moment to consider what kind of impacts this new typology is having on the territory of the country. From the obvious land appropriation to the emerging urban processes surrounding the more established parks, to the changes in the social structure and the living conditions of a more and more fluid rural society, this phenomenon is at the core of many key issues surrounding Vietnam’s future. Despite being a very young occurrence, one can already start to talk about permanent effects on the landscape and the people.
The export processing zone Noi Bai was the first park which was established in northern Vietnam, back in 1994. It was incorporated by a joint venture of foreign and local companies: "Vista Spectrum" (Malaysia) and "Urban Infrastructure Development Investment Corporation" (Vietnam). It boasts a labor force of 14,000 workers, 30% of which are from the Soc Son district.

Total size: 100 ha
Occupied: 100%
In use: 80%
Export: 100%
Import: 0%
Residential housing: 0%
Social services: 0%

EPZ “Noi Bai”

Dai An was established in 2004. It was implemented in two construction phases. The first phase occupied an area of 174 ha. The second phase was implemented to an additional size of 474 ha. Located within the park are many different companies that employ a labor force of 16,000 workers. Of those, 3,000 are residents in the park itself.

Total size: 648 ha
Occupied: 80%
In use: 68%
Export: 70%
Import: 30%
Residential housing: 30%
Social services: 0%
Phu Nhgia Park was established in 2007 exclusively by Vietnamese investors, which a then implemented law had just allowed. The implementation happened in two phases. The first phase occupied an area of 170 ha. In 2009 a smaller second phase extended the park an additional 68 ha. In the park there are 60 companies employing a labor force of 8 000 workers.

**IP “Phu Nhgia”**

Total size 238 ha

- Occupied 100%
- In use 40%
- Export 50%
- Import 50%
- Residential housing 30%
- Social services 30%

Sai Dong B is one of the few industrial parks close to Hanoi, and also one of the oldest parks in the Red River Delta. The proximity to the city brings great advantages, but makes park extension almost impossible due to consolidated urban infills already surrounding it. In the park there are around 20 to 30 factories they collectively employ some 3 500 workers, most of which are living in the surrounding area.

**IP “Sai Dong B”**

Total size 85 ha

- Occupied 100%
- In use 75%
- Export 45%
- Import 55%
- Residential housing 30%
- Social services 30%
How to Found an IP

The foundation process can be summed up in four steps: first, an interested party (local or foreign) decides to invest in establishing a new park, and a deal is negotiated with the government on planning questions. Second is the process of land acquisition, where individual land owners (in most cases farmers) sell off their plots, after which the investor submits a request for land use change, which usually takes even longer than land acquisition to realize. Phase three is park construction, starting with basic infrastructure, namely roads, power and water supplies and the like. The last phase is the leasing out of individual plots within the park to private enterprise, and their settling in and establishing of logistics, factories and other secondary infrastructure.

IPs as Catalysts of Broader Territorial Transformation

1) Land transformation: The implementation of IPs all over the country is changing the physical landscape of the Delta, old systems (of water irrigation for instance) are completely erased and land is filled to create flat, horizontal complexes. 2) Urban transformation: Areas around IPs slowly start to adapt to their new conditions. Infrastructure in the way of highways, schools and housing for workers is constructed to complement the park, which has in turn concentrated a certain amount of workers in one area. 3) Social transformation: A differentiation of labor slowly causes differentiation in social structures, which are now relating to larger territories (with people moving from other rural areas whether temporarily or permanently in order to gain access to factory work), and also reflect a change in wealth with hierarchies appearing among people of different incomes (for instance the occurrence of land lords and renters in the case of new comers). 4) Transformation of work: Differentiation of labor in the countryside is another indicator of the emergence of “urbanity” on a wider territorial scale.
Outlook for an Urbanized Landscape

Currently, projects that entail large scale land transformation and land grabbing of formerly agricultural land are promoted and aided by the state, as both the state and the private parties involved see potential economic benefit in their implementation. To their end, large investment has been put in regional infrastructure as well. As it seems, a lot of land is freely “wasted,” meaning that these lots and developments are dispersed and pop up based on single opportunities, with only rough guidelines on the level of the overall territory (the three “development corridors” previously mapped out are not the only place where IPs are sited). Clearly, urbanizing is seen as a priority, but it won’t be long until performance becomes the key factor in such endeavors, as we are already seeing the ugly side of speculation (both in real-estate as in the development of IPs) rear its ugly head with empty built landscapes emerging to create a new, solemn image of the Vietnamese landscape.
First IP in Northern Vietnam
This map shows EPZ “Noi Bai” around 1999, when it was first built. The park measured 50ha and was located between Noi Bai International Airport (Hanoi) and several villages. The park management had implemented basic infrastructure, i.e. streets and a sewage system in the surrounding area. Since its foundation, nearby villages have experienced a densification.

Consolidation of the Countryside
The second map shows the park around the year 2010. In the last 11 years a second phase was added and expanded the park to 100 ha. Urban growth is becoming apparent along the road infrastructure, and the villages have started to “grow” towards the infrastructure with services and additional informal housing.
Industrialization in the Urban Periphery

“Sai Dong B” is also a very old IP (relative to the age of IPs in general), and is located on the outskirts leading up to Hanoi from the East. The map shows the park in 1999. Sai Dong B is closely surrounded by urban morphologies and is limited by this for expansion opportunities. Most of its labor is local, and the park has not influenced a lot of rural migration.

Consolidation of the Urban

Compared to the first map, this one shows the Sai Dong B park 11 years later in 2010. The inner structure of the park is densified. The environs have changed significantly, with the extension of a new highway. Influenced by the success of Sai Dong B, new smaller parks have emerged in the same locale, and are starting to affect a consolidation of the urban structures around it. The existing structures have themselves densified in addition to expanding. It is clear that this process is still young and ongoing.
Career Choices

Farmers living and “owning” land next to where an industrial park is planned can take several decisions that turn their careers around. One, they can choose to sell off their land not only for money, but also for future employment in the factory. Two, if they have land remaining from their sale, they can invest it in building so-called ‘boarding houses’ for future migrant factory workers and thus make additional profit. Three, they can invest in a road-side shop house closer to newly implemented infrastructure and provide services. Four, they can do all of this while still farming deciding for multiple career professions simultaneously.

When Farmers Become Workers

The proliferation of IPs all over the countryside actually comes at an opportune time when the agriculture in Vietnam is no longer able to sustain itself. Internal growth leaves many young farmers no choice but to seek out better employment, to varying degrees (as we will see, working in a factory can even be conducive to farming, with seasonal migration). Conditions vary, but most people we were able to talk to find working in this sector beneficial to their circumstance. This segment shed a bit of light on what kind of tendencies are present surrounding factory employment.

Potential Nodes

An IP with its employment opportunities and additional infrastructure attracts for many a reason. It is not surprising that they serve as minor economic pulses on the territory, offering opportunities that would otherwise be only available in the cities (and not everyone can afford to move to the city).
Multifarious Working Conditions

While a farmer is dependant on the weather and treatment of the soil, factory workers are dependent on who employs them, which can mean a myriad of different treatments. Working conditions differ based on the company in question, which production sector it belongs to, where it is located and what access it has to infrastructure and obviously on the type of job itself. Furthermore, political conditions, such as for instance the fact that global industries opening up factories in Vietnam need to answer to global working condition standards, and the fact that local companies don’t need to adhere to such strict regulation, is also an obvious difference in what is offered.
Non-mechanical Mass Production

Many foreign companies are sourcing out their production to Vietnam, be it European textile companies or Chinese heavy industrial production companies. Considering the range, the standards of production vary immensely based on the company in question. In most cases highly educated foreign professionals are brought in to fill out the management positions, and positions that require expertise. Companies also bring along their own construction contractors, suppliers and equipment. They set up their complex independently from Vietnamese partners. Local Vietnamese companies, however, employ a myriad of local support in order to build up their sites. Equipment is procured in the country and from abroad. What all of these companies do have in common is that the bulk of the unskilled labor force, which is local and inexpensive, is engaged in non-mechanical mass production in these factories.
Alternative Ways of Production

Industrial production in Vietnam isn’t simply a 25 year old phenomenon with the emergence of industrial parks. Rather, production and crafts have a long tradition in providing the population with the essential goods that were needed. These workers are also organized, forming a kind of spatial cluster in order to collaborate in production of a certain type of goods (i.e. steel products). These structures go back many generations and are still functioning more or less in the same manner as decades before. They grew their business and relationships over the years so that they could stay competitive. These working clusters though are not in competition with their newer counterparts, as the production in question is for a different sort of good, and for a different market.
Recycling Scraps
This is a local steel production facility, a conglomerate existing of several companies producing steel and wires by recycling scrap metal. There are no working guidelines, no safety regulations and no head management that supervises the company, it is informally organized and run.

Unhealthy Working Conditions
These kind of facilities differ quite a lot from industrial parks. There are no asphalt streets, gates nor security. There are no environmental restraints and the working conditions are detrimental to health, and to the surrounding environment (it’s ecology and the residents in the neighboring settlements).

Artful Merchants
Concentrations of industry tend to attract other opportunity seekers, merchants happily set up shop along the road next to where lots of activity is anyway occurring, offering produce and/or services to workers. Infrastructure for this is mostly light, setting up within little sheds, or improvised covers with their merchandise.

Scavenging
Every recourse counts, and steel that is recycled and reused with its refuse is then once more scavenged for profitable material and resold or re-fabricated into usable products. We observe this occurrence especially in dirty industries over the country (i.e. steel and coal) where the raw material can still be sold for a significant gain.
Handicrafts
This village is specialized in producing all kinds of wooden furniture. But in contrast to an industrial park all the companies are producing the same products and form business connections and partnerships in order to support each other. They form spatial hubs to minimize their expenses and ensure their supply needs.

Specialization of a Village
Local companies start as family businesses and expand over the years. Currently, many of these companies employ hundreds of workers. Now the family members are managing the company and selling the goods to customers or merchants in bigger cities. This “family business” logic has slowly over time specialized entire villages, which become known for certain kinds of products in the region.

Expression of Affluence
Having accumulated wealth over several generations, the families want to express their wealth and expertise and often ornament their homes with intricate designs executed by their craftsmen, immediately becoming an advertisement for the company, as well as a status symbol in the village.

Female Emancipation
In almost every sector, the labor force is dominated by female workers (except perhaps certain professions within the service industry, such as taxi drivers). In the primary sector, female workers make up over 70% of the presence in factories, no matter the type of labor.
The Social Shift
The spreading of IPs in the countryside has resulted in a different way of life for a lot of people in the Delta. A former farmer could become a factory worker, land lord, merchant, business man, service provider etc, introducing a division of labor to the countryside. Also appearing in the countryside is a greater contrast in wealth among people of different professions, creating social differences. Not only is the local population contributing to the emerging gap, but trained and highly-educated professionals also move to the countryside to these new areas as specialists, or because of great need for their expertise (i.e. doctors).
New Housing Types

The nature of migration inspires variegated living preferences. Some people move close to a factory temporarily in order to make the most money that they can and return to their village with it, and hence want to spend a minimum for lodgings while there. On the other scale of things, experts and specialists need incentive to move to the countryside in the first place and require luxurious living conditions (and other amenities, i.e. private transportation means etc.). All in all, a look at typologies can best illustrate the social structural changes that we have thus far been documenting. Two dominant typologies that we have observed are: 1) small-scale boarding houses, which are offered in the neighboring villages by locals, and 2) larger apartment buildings, supplied by foreign investors inside the industrial park complex.
Vietnam’s Boarding Houses

For migrant workers, the boarding house is the normal state of affairs. Living quarters include a single room with a toilette. The room is commonly shared amongst three workers. It’s size is around 9 square meters (toilette and kitchen niche included). Mostly these boarding houses are occupied by young women between the age of 18 and 26. Most of their earned money is spent on subsistence, with hardly anything put aside.

Living & Working in the Same Place

In the informal self-grown industrial clusters, workers are exclusively migrants coming from elsewhere. They sleep in small sheds in the factories free of charge, usually in terrible living standards. Surprisingly, they earn much more money than workers in industrial parks, choosing to reduce their expenses while in the village.
Incremental Formal Housing

IPs provide sometime housing for their workers (depending on regulation, this is more and more of a requirement). They set up boarding houses initially, until enough workers are living on the premises, and subsequently construct apartment buildings into which the workers then move in. Rent averages between 50 and 80 USD a month. The difference to the local villagers is that they construct boarding houses in anticipation of renters, and the IPs handle this more gradually as demand appears (and pressure to do so).

Local vs. Migrant

Locals enjoy much better living conditions than newcomers. They are mostly not renters, and additionally stand to profit from providing the newcomers with lodgings in boarding houses or with services.
Standards of Housing Supply
Many IPs are now obliged to supply housing for their workers. However, most of those buildings built are intended for people who hold the more important positions at the factory, and are built to a higher standard boasting more space, hot water, and heating. For this reason, living costs are also higher, making this type of housing inaccessible to the majority of the workers, who are compelled to seek out lodgings in the surrounding areas.

Upper Echelons of Industry
The most expensive homes built in the vicinity of IPs are villas. They are mostly located inside the industrial park grounds and secured by 24/7 security, financed by the park management. The houses are single standing villas with a private backyard. Costs range about 2 500 USD a month.
Lack of Dreams for the Future
Industrialization in Vietnam is in some aspects comparable to these same processes anywhere else in the world, or in the past of already industrialized nations. Other aspects, such as the relation between establishing urban centers using industry as a motor, as was the case in Europe while it was urbanizing, are developing quite differently, especially considering the time frames of the workers, which seem to be much more fluid in relation to their employment in the industrial sector, often not relocating permanently, and often working only seasonally in the factory. For the moment it seems that the industries while potentially offering stable employment with benefits (depending on the company) are still not seen as stable and prosperous career choices. Speaking with people about their expectations, career planning is also seemingly non-existent, as people are mostly considering their short-term situation, living on a day-to-day basis. However, IPs are going to be around for a while, and are slowly becoming more rooted in the social structures, so these aspects might soon start to change.

Enjoying the Little Things
Many people don’t save money for posterity. Instead, they spend it on small pleasures such as motorcycles or new haircuts. It is common with the new division of labor, for people to spend a little more than they have maybe been able to earn in the past. As moving around the country reveals, there is a mentality of showing status which is omnipresent (i.e. home facades). For the moment focus is on the here and now, and not much concern exists for the future.

Smart Service
Many a shrewd entrepreneur has settled down in adjacent villages to earn a livelihood by offering special services for the needs of the factory workers. Tailors, for instance, seem calculated in their moves to relocate for work, something entirely not present with factory workers themselves.
Next to Come?

Since the opportunity to create IPs on formerly agricultural land has opened up a legal loop hole that allows land grabbing, a lot of speculative developments have popped up, which remain underused and unfilled...waiting to inspire more real-estate interest and profit. Due to this, the government’s most recent degree has halted momentarily the allocation of new sites for the purposes of industry, until the existing sites get filled. A phenomenon that is extremely young already seems to be short-lived, and one is left wondering what is to happen to this landscape in the future, and what is the effect that further industrialization in the country will have on urbanity and way of life.
COMMENTARY
INDUSTRIAL PARKS

The economy of Vietnam is one great lab experiment that is in its character perpetual. Ever since the economic reforms of the late 80s, the country has been rewriting and reformulating its legal framework, in order to redefine itself as a major global economy within the predominant doctrine of capitalism. A top down, heavily controlled process of land expropriation and the creation of zones of legal exception within the territory has been under way for the last 20 years, creating a new field of pull factors within the Delta. Industrial parks, export processing zones, and clusters are implemented as part of a national strategy to construct Vietnam’s wealth, and such implementations have only begun to affect the actual structure of social existence in the Delta. For one, the immense developments have not had a drastic effect on the migration and settlement patterns in the countryside. People taking to work in factories rarely go as far as making life changes lasting longer than several years, and the isolated and controlled nature of the parks means that they are not necessary used as a top down planning strategy that could potentially structure future growth. But the developments are insightful as to the character of the reforms themselves, clearly indicating a heuristic approach to territorial and economic development, one whose outcome will become apparent (if ever) once the rules governing the process are fixed.
IV

AGRICULTURE

OLD STRUCTURES, NEW BEHAVIOR
The Relation Between Vietnam and its Agriculture
Land Distribution Before 1955
Times are a-Changin'

LEFTOVERS OF COLLECTIVE ORGANIZATION
Refinement of Rice
Collectivization of Land
Self-Sufficiency

ENTERING THE GLOBAL MARKET
Searching for High Value Products
Land Redistribution
On the Doorstep of the World Market

IN SERVICE OF THE CITY
Marginal Border Cultivation
Expropriation of Land
The City and its Hinterlands

EXTREME EMANCIPATION OF THE FARMER
Effects of Trends in Cultivation
OLD STRUCTURES, NEW BEHAVIOR

Before the socialist system was established, the majority of Vietnam’s population used to live in rural areas and work in the agricultural sector. Industrial production was limited, and an urban proletariat was almost nonexistent. Today still 73% of the population live in rural areas and 54% of those are working in agriculture. Due to the reorganization of the cultivation over the years, even though the plot size has remained small, productivity has increased, ensuring more self-reliance for the farmer.

With industry and the services growing, most farmers today have their main income from other jobs.
The Relation Between Vietnam and its Agriculture
As one of the so called “rice bowls” of Vietnam, the Red River Delta remains crucial for food supply, as well as for the national economy. Due to its labor-intensive nature of production, agriculture is also important in terms of employment. Most farmers of the delta produce either for self-sufficiency or for the local market. As a staple food, rice covers a large part of the total agricultural land and is cultivated by nearly every farmer (although they usually couple rice production with other crops).

The Rice Farmer
The cultivation of rice is still traditional involving low technology and high labor input. The choice and availability of seeds and their quality has however increased. Profit is low, but most of the harvest is anyway used for self-consumption. Surplus rice is usually sold at the gate and brought to local markets for further distribution.
The Flatlands of Vietnam

Topographically speaking, Vietnam is easily read as two vast flat plains, north and south, connected by a linear coastal mountain range. The two delta regions of the Mekong and Red Rivers with their terrain and hydrography constitute two fecund environments. Subsequently, most of agricultural activity is concentrated precisely in these two zones. In comparison, products earmarked for export are cultivated mostly in the Mekong, due to higher output as a result of parcel consolidation and more advanced mechanization.

The Main Land Occupiers

In the Red River Delta, agricultures covers the largest area by use. This, however, is decreasing, as more and more land is appropriated for urbanization and industrialization processes. As almost every surface in the delta is covered in some form of use, agriculture emerges with the weakest resilience against urbanization pressures.
Structural Characteristics of Plots in the Red River Delta

Rural areas in the Red River Delta have some common attributes, which could be observed as generalities. While they develop as a result of different processes, they meld into a very memorable image of the landscape.

Gravestones

In the understanding of the Vietnamese farmer, the dead should be buried where they had lived and worked. For this reason, on many fields in the Red River Delta, small graveyards or single graves can be found.

Plot Strips

Strip-farming is a very typical form of production that affects plot structure. It is employed for different reasons, including achieving equality during land distribution, ensuring protection against land erosion, and sharing risk with flood prone plots along the river banks.

Sharp Delimitation

Settlement outlines towards agricultural fields can easily be read. Cultivated plots stretch all the way to the border of the built fabric, which in turn is densifying in a concentrated manner, rather than dispersing.

Rivers and Canals

Most settlements are built along water sources. While residences are built on one riverbank, along both sides of the connecting road, farming buildings remain on the other side of the river, in order for the agricultural fields to remain accessible.
Structural Characteristics of Plots on the Coast

The coast line seems even more of an artifice than the rest of the cultivated land in the delta. Plots are of a large scale, covered in serial fish and shrimp ponds or large salt flats which are concrete and geometrically regimented. It is continuing to transform with the promise of prosperity to be had in seafood industries.

Salt production started in this region about 40 years ago, as the saltiness of the soil was not conducive anymore to rice production. The plots are covered with concrete surfaces and sand that is put out to dry. During winter time, when there is no work to be had in salt production, the salt farmer finds employment in nearby brick factories.

The Salt Farmer

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Collection - gathering of sea water and sand -drying sand, and storing water -mixing sand and water together

Distribution - water is spread evenly over the fields in the morning

Maintenence - field renewal every 5-10 yrs

Side Business - working in brick fabrication

Storage - warehousing adjacent to fields (One building shared by several families)

Harvest - 700kg/day - about 100 harvest days = 70,000 kg/year

Sales - good quality: 2,500 VND/kg - bad quality: 1,200 VND/10 kg

Plots rented from cooperative - 20 yr contract
Land Distribution Before 1955

Up until the mid 20th century, land in Vietnam was split up among two types of land owners, who had a large number of landless farmers working and living on their lands. The system of big land owners was introduced during the French occupation, and therefore not surprisingly, many of these large land owners were foreign, mostly French, but also Chinese. The farming families could earn only little with the relatively small amount of land they owned and produce more or less for self-sufficiency.
The Fine Meshed Grid
Plot size per person working in agriculture is small, 22.5 times smaller than in Switzerland. At the beginning of the socialist era, land was distributed to all citizens in equal measure and therefore subdivided to a very fine scale. The irrigation system and uneven terrain furthermore also play a significant role in the formulation of the grid.
Times are a-Changin’

The tradition of agriculture in Vietnam kept many people employed in the agricultural sector until today. But with the economic and demographic growth, with rising prices for necessities and reducing prices for agricultural products, staying only within this economic sector is becoming more and more difficult. Farmers all over the delta have started to search for alternate sources of income, to keep up with the life standard. A younger generation is leaving the rural areas for cities or industrial parks, yet despite this, tight connections with the “fatherland” are still maintained, giving these trends a “softness” of character.
**Labour-Intensive Production**

The density of people working in agriculture is very high in the Red River Delta. This shows the importance of the Delta not only in what it means for production output, but also for employment and the potential impact range for any wider transformations in agriculture.

Of all the working people, more than half are still working in the agricultural sector, although it is the sector with the smallest financial profit and therefore with the lowest living standard.
**Agriculture vs. (Industries + Services)**

Even if the agricultural sector is slowly losing ground to the service and industrial sector, it still holds a large share in the gross domestic product (GDP), in export, and thereby asserts its role in the Vietnamese economy.
In the Red River Delta, households where agriculture is a primary activity number below 50%, which essentially means that most farmers have found other income sources that are more profitable than agriculture, whether out of necessity or diligence. In many cases agriculture remains as a certain source of sustenance, and minor profit for the family.

Income Compensation
In the Red River Delta, households where agriculture is a primary activity number below 50%, which essentially means that most farmers have found other income sources that are more profitable than agriculture, whether out of necessity or diligence. In many cases agriculture remains as a certain source of sustenance, and minor profit for the family.

In order to expand urban areas, new construction sites often require workers in different positions. These jobs are always of a temporary character.

Textile factories employ a lot of young people part time (informally speaking), and during harvest many of them return to work the fields.

The increasing tourism sector calls for new labor in various services, for instance floating and street merchants, or guides and people working in transportation.

Small textile businesses employ seamstresses which are working in the evenings, while working the fields all through the day.
**Who’s Working the Land**

Expecting higher living standards, young people are leaving for the city or the factory. One way to convince them to stay is the switch to higher value products with prospects of wealth. While the older generation keeps cultivating, at some point they have to decide what happens with their fields as the young will probably not come back. When fields are kept in the family, outside agricultural labor is employed for field work. In other instances, fields are sold off to neighbors who still have an interest in working them.
LEFTOVERS OF COLLECTIVE ORGANIZATION

In 1950, the Vietnamese communist party planned to use collectivization to transform a poor, agrarian society to a nation with a strong and stable national economy. But the collectivized agricultural organization lacked in productivity due to its fragmented and fine-grained character, based on rules of equality. Vietnamese farmers are more successful producing privately for household consumption or for the free market, recent history has shown. However there are still elements of collectivity remaining in the way agriculture functions today in Vietnam.
Refinement of Rice
In the past, milling machines, animals and water distribution were all collectively shared and organized, whereas now we see milling and animal breeding rather as new side professions, a private business in the new decollectivized era. Places where the milling was done, where farmers took their produce to, are now owned by the millers themselves. Animal breeding has developed to constitute an important contribution towards self-sufficiency.

The Miller
In the process of securing the supply of markets, the miller is a stock holder of rice. He usually uses collectors to buy rice from the farmers. Depending on demand, the miller returns the rice to the farmer for a milling fee, or the rice is sold to wholesalers or the local market.
Agriculture

Remains of Collective Organization
Collectivization of Land

With the act of collectivization, the state of North Vietnam incorporates into its stewardship all the land. Large land owners are dismissed (over 50,000 literally lost their lives), their land is split up into small plots and shared with the entire population (every citizen gets an equal share). City denizens as well as landless villagers all receive a share of land for agricultural cultivation. Which crops are grown is predetermined, and the harvest is collected by the cooperatives, with a small share afterwards as well. Three-quarters of the harvest is used for private cultivation. Considering the farmer did not have much motivation to maximize production, as he would anyway end up handing it over to the collective, post-harvest losses were huge. This might be one important reason why the government reverted to the system of a more self-dependent way of field cultivation. However, the small plot size character (another factor impeding productivity) still remains.

Responsibility and Productivity

Most production achieved by farmers in earlier times was meant to feed the collective. Only 5% of the plots could be used for private cultivation. Considering the farmer did not have much motivation to maximize production, as he would anyway end up handing it over to the collective, post-harvest losses were huge. This might be one important reason why the government reverted to the system of a more self-dependent way of field cultivation. However, the small plot size character (another factor impeding productivity) still remains.
What's Left of Cooperatives

Before, distribution from the farmer to the consumer was almost completely organized via the cooperative, while only a small share of produce went directly from the farmer to the consumer. Nowadays, the ways of distribution are liberalized with a free market installed, where the collective now exists only in the role of a kind of farmers union.
Historically, the buffalo always had a central role in the success of production. Treated almost like a special family member, the farmer used the buffalo for field work, and in the Red River Delta particularly, even though the buffalo is not ideal for this, the farmer used it also for milk and meat production. It is an official goal of the state to maintain the number of buffaloes, as they are an important counterpart to mechanization, which for the moment is not being implemented on a large-scale due to obvious difficulties.

**To Whom Belongs the Buffalo**

Most rich farmers own a Buffalo, some poor farmer families manage their field work without Buffalo aid.

Buffalos are in the possession of the cooperatives, which provide them readily to the farmers who don’t own one.

The buffalo is now owned either by private persons or collectively and rented out for field work.

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Buffalo density in the north is much higher than in the south, although holding households in the Red River Delta have 2 buffaloes, while in the mountainous regions this number is significantly higher. Furthermore, the level of mechanization of the south is another thing to note. In the 70s, the state tried to introduce Soviet tractors to the fields in the Red River delta, but this proved unimplementable for a myriad of reasons.

**Role of Buffaloes in the Delta**
Buffalo density in the north is much higher than in the south, although holding households in the Red River Delta have 2 buffaloes, while in the mountainous regions this number is significantly higher. Furthermore, the level of mechanization of the south is another thing to note. In the 70s, the state tried to introduce Soviet tractors to the fields in the Red River delta, but this proved unimplementable for a myriad of reasons.

**Animal vs. Machine**
Due to specific land properties, the buffalo is advantageous when compared to the tractor in executing the same duties. A buffalo can handle the uneven, soft terrain much better and easily reaches the corners of small plots. Tractors also entail a drastic increase in costs, procurement and maintenance alike.
Self-Sufficiency
Trying to reduce risk due to fluctuating crop prices in the free market, most farmers cultivate different crops as well as keep different animals. This also becomes a way to be more self-sufficient and therefore independent. Among the commonly cultivated crops many interrelations can be discovered, i.e. the overlaps in the rice and pig-breeding cycles which reveals some synergies. It is a basic rule (and down to earth common sense) to reuse as much as possible in order to increase output and minimize waste.

The Pig Farmer
After decollectivization, animal breeding has become the domain of the farmers and can in most instances become a steady profit for the family. Nowadays, pig farmers are starting to employ advances in technology of pig-farming, such as the use of biogas in other household spendings.
Traditional Recycling
Waste from the milling of rice can be utilized in pig feeding, and pig dung can be useful in creating fertilizer. This overlap creates a close relationship between these two activities, inspiring most rice farmers to also hold some animals on their farms, and vice-versa.
Reactions to Market Instability
While the overall number of pigs is high in areas of human concentration, the average number of pigs per household shows that most farmers use pig breeding as a side business or for their own provision of pork. The fact that most farmers have a wide assortment of products that they cultivate/produce (rice, vegetables, aquaculture, poultry, pork etc.) can be read as cautionary towards a rapidly fluctuating market. Naturally, the farmer does what is in his power to shield himself from the risk of a bad sales year in one crop family.
ENTERING THE GLOBAL MARKET

At the end of the Vietnam-American war, the country found itself facing great challenges with both supply and overall productivity of food, leading the state to take a decision to reform its economic and administrative policies in many sectors, among those restrictions on land law and predetermined cultivation, simultaneously opening connections to the world market. International trade became accessible for the first time to small scale farmers. This shift resulted in an economic boost, evident also in the agricultural sector, which started to contribute to Vietnam's exports. Many farmers have since been motivated to reorient their harvests towards export.
Searching for High Value Products

The onset of an export-based economy along with the introduction of new technologies, pushed Vietnam’s agriculture to search for newer, higher value products, which could be exported. On the coast, Vietnam started to cultivate shrimp and fish on a much larger scale than was possible in the subdivided inner delta countryside. Entire areas were transformed in prospect of high profits, and many farmers were convinced to change their rice fields into fish ponds.

The Shrimp Farmer

Given that it was difficult to cultivate rice in the salty terrain on the coast, and given that aquaculture promises high profits, it was easy to implement a switch to shrimp farming. While cultivating shrimp or fish over most of the year, farmers still grow rice during low season in their ponds. Initial investment for shrimp farming is high: the annual purchase of larvae costs more than the for rice seeds, and the land fees are also more expensive in comparison, therefore the shrimp farmer is often under great pressure to succeed.
The main center of aquaculture in Vietnam is still the Mekong Delta, and it remains different in character and type, namely in the Red River Delta, more of a small scale but widely spread cultivation of aquaculture has developed.

Aquaculture Coverage
The main center of aquaculture in Vietnam is still the Mekong Delta, and it remains different in character and type, namely in the Red River Delta, more of a small scale but widely spread cultivation of aquaculture has developed.
Land Redistribution

Faced with high post-harvest losses and the threat of famine, the government realized that a more private, family-based economy would encourage farmers to increase their production. In 1989 an important land law reform took place and changed the way the land and its production was handled. From then on, farmers were free in their choice of crops and instead of handing the harvest over to the state, they could sell their products and pay a tax on the income. The consequence of this was a privatization of the agricultural output and a decentralization of suppliers. In 1993 the land was finally distributed to the people to the way that it is now, and each person received a piece of land (1 Sao) sized plots would.

Forced collectivization

1 Sao

To Each Person a Sao, Fair Enough?

A Sao is not compact. In order to ensure equality in land distribution, it was clear that some kind of reference to land quality, and land remoteness/accessibility would have to be made. In the end, 4 different types of plot appeared in the classification: near, remote, good quality and bad quality. Each farmer received equally of each category, and this makes up the 1 Sao. For obvious reasons, this serves far more as a hindrance to productivity than the initial small sized plots would.
With the access to the international market, a lot of foreign investment and demands for different products arrived to Vietnam. Worldwide trends and developments now had an effect on the Vietnamese economy. But as the information flow is not yet developed, farmers usually don't really know or understand more than economic rumors. The provincial government with its relatively high autonomy and need to meet budget estimates takes on a role of mediator in the whole process of exchange. This, however, is done not without scandal, as local governing officials often see this as a way to grab a bit of profit, and can be highly dangerous towards farmers taking a risk in their livelihood. One example that made the media is given here.

On the Doorstep of the World Market

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### Which Crop is Profitable?

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**Competition Globally**

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30 years ago, Vietnam was importing a lot of its food. Today, the country is exporting a lot of goods, and looking only at agricultural products, has a positive trade balance. Even with this, Vietnam still imports many food and food-related products, especially ones that are rare in the country.
Land Gaining and Losing

For a while surplus land for the purposes of agriculture was gained by transforming forested areas into fields. The slash-and-burn way of cultivating forested lands reduced this heritage over the years. Today, industry and urban development are encroaching on agriculture, reversing the vector.
Philippines 34%
Cuba 11%
Malaysia 10%
Senegal 4%
Iraq 3.5%
Cote d'Ivoir 3%
Singapore 2%
Ghana 2%
Indonesia 1.5%
Other 26.5%

Japan 18%
USA 17%
EU 15%
Germany 5%, Italy 2%, Spain 4%, Netherlands 3%
South Korea 7%
Australia 3%
Taiwan 2%
Russia 2%
Other 36%

Two Products, Different Destinations
**From Collectivity to Capitalism**

1955: North: re-allocation of lands, people living in the city receive land, nationalization of foreign estates, economic development similar to the then model Soviet Union

1958: North: Forced collectivization, 50 000–100 000 murdered affluent farmers, 80% of agricultural land and 90% of farming households are in cooperative hands

1978: First agricultural reforms: prices of raw materials and crops are liberalized and were able to circulate in market. A shift from food importing to food exporting on the national level

1986: DOI MOI: strong new orientation. Politics focus on progress and production growth

1989: Decollectivization of land, price liberations with the market

1993: Real estate possible for private households, mortgage on land is possible

1999: Land consolidation

North:
- 98% small family farms
- 40% private ownership
- 60% public fields, for the village community

South:
- Working class: large landowners
- Southern mountains: colonial plantation companies

**Towards an Open Market**

1976: Agricultural cooperatives open toward a market economy, more self-reliance for the farmers

1989: Land redistribution is not executed, mostly due to good state of production

2012: Total privatization/commercialism of agricultural land, more households without agricultural land: problems, small parcel size and small farms, mechanization process stopped/impossible

Strong commercialization: agricultural cooperatives, self-regulated
Investment Risk in Export Oriented Cultivation

The attraction of high profits seduces many investors to take part in the agricultural business, which leads to short-term planning in a slowly reacting system of cultivation. For example, large areas are transformed with great difficulty into aquaculture production sites. While investors’ interest moves on quickly, the transformed fields are hardly cultivated and before they can become productive, new plans are developed for the next trendy crop and its cultivation.
IN SERVICE OF THE CITY

Hanoi, being the largest city in the Red River Delta, indulges in immense consumption and has high need for agricultural products. However, neighboring agricultural land in its environs does not supply the city with fresh daily produce like vegetables or meat which arrive from elsewhere, but is rather specializing because of the closeness of an urban market in order to cater to the new life-style of Hanoians. These new forms of agriculture supply the city with products like flowers, but also venues for a kind of village tourism, therefore enhancing the beauty of the rural ideal is one of the goals of the farmers that hope to attract the urban population. On the other hand, these are exactly the regions faced with an immanent urbanization threat, which goes hand in hand with the need to maintain a profitable agricultural profession, lest one resolves to expropriation pressures from the government.
Marginal Border Cultivation

Agriculture within or close to the edge of the city is often in designated “special” locations, like flood lands, which were for instance not appropriate for construction of housing. Still, these areas are highly productive, as the pressure on the land is high. So the spatial relationship to the city has developed new forms of cultivation, which are unique for these areas, that could be dubbed, although with caution, as urban agriculture.

Cultivation around West Lake

Within the area of Nhat Tan, farmers have smaller plots than farther away from the city. Because Nhat Tan is a flooding land and the plot division had to be as far as possible, the government decided to divide the plots into narrow, long strips, so that the flood risk would be shared by all. Everything produced here has a direct relation to Hanoi, and some farmers are working solely as merchants or service providers, not selling their products but for instance “leasing” them out.
Expropriation of Land

Due to the scale and speed of urban development, many plots are needed to expand the built environment. As there are very little land reserves in the Red River Delta, and Vietnam in general, it's mostly former agricultural land which has the weakest resilience to this transformation, on account of its unprofitability. Because all land in Vietnam is kept by the state, the government has no legal obstacles when deciding to expropriate a plot. In order to prevent uprisings, a compensation is made in the amount of 128 mil. VND (6 140 USD), which for the farmers in question earning on average 800 USD a year is relatively high. This fails, however, to address the question of what the farmer becomes, now that he is landless.

Landless Farming

In the case of expropriation, farmers can and often do use their rights to complain, which often leads to trials. Some 70% of trials in the country are related to land law issues. Farmers often “reinvest” their compensation money into new housing but are then unable to cope with the transition, as they are often of old age, and hardly desire to relocate and/or change their profession. At the same time, their former fields often lie fallow for years until the expected construction begins. What is often observed is the farmer returning to his former land to informally continue cultivating it, up until the moment he is evicted and construction starts.
The City and its Hinterlands
Rural areas surrounding Hanoi are primarily concentrated on the city as a target market. Diversity is high and ranges from various animals to vegetables and decorative products. As the farmers still operate mostly in a small family organization, they usually deliver their products themselves to the city markets, either by bicycle or motorcycle.
Urban Structures in Rural Areas
As is described elsewhere in this book, rural built morphology follows two mainstreams: the traditional village structures of old, and the newly emerging phenomenon of urbanization along the roads. The old structures tend to densify and concentrate, not spreading outwards, as can for instance be observed in village structures in Switzerland. The built boundary towards the landscape is rather sharp. The newer morphology, appears more like a thin coulisse framing the landscape, as it does not reach any depth of settlement, and functions in a linear fashion.
EXTREME EMANCIPATION OF THE FARMER

After years of predetermined cultivation, mostly consisting of staple foods, the Vietnamese farmer gained back the freedom to decide what to grow on his fields. What appeared as a direct consequence was an increase in productivity, and a slight expansion of crop types, which is only now starting to become exponential in its character. As a result of years of relatively steady economic growth, a new social class has developed, whose demands go beyond the bare necessities. This has created a new economic niche in agriculture, one for luxury and decorative goods, which farmers have readily embraced, only the “catch 22” of niche economies is always that they cannot become the mainstream, since their demand is always relatively low, no matter the profit margin on the product itself.
Effects of Trends in Cultivation

In Hai Hau region, a new cultivation has started to spread, the Bonsai, a tree whose sole purpose is decor. Like a virus the tree now covers several thousand square km of cultivatable land. Once rumor spread of the profit of the bonsai, every neighboring farmer had the same idea, to grab a piece of the pie. Rice plots have been transformed into bonsai plantations, a process dating back from the 90s and still going on. The intense cultivation has created a bit of a name for some of the villages in the area, and people now head to them to purchase their trees from all over the country.

The Bonsai Farmer

To start cultivating bonsai, a farmer has to invest not only into field transformation, but also into seeds or treelets, so that he can start a farm. As cultivation is much longer than most crops, there is a substantial income gap, during which the farmer has to live through. Even though inevitably a precarious investment, as the bonsai is inflexible as a crop, and responds only to a niche economy, for the moment the earnings of the average bonsai farmer are far improved against some of the other farmers as covered in this research.
Income Related Demand

The increase of average income as well as population growth in the country create a pressure for new products, which can now be accessible for a larger part of the population.

Demand Related Goals

Due to a lack of production of high value goods, the government is supporting an increase in certain types of cultivation, as well as giving incentive for completely alien crops, like for instance cacao. This development is intended for the most part to fortify an export market and make the agriculture once more economically viable, for economic reasons decisions are being taken that shy away from low value products that have a major role in the sustenance of the country, towards high value products like coffee, cashew nuts and cacao.
Conditions for Farmers to Bear in Mind

Comparing different types of farmers in an economic field shows how different branches developed and in which phase they are. It gives also an idea what a farmer is confronted by when facing choices in regards to what he will cultivate. The different amount of growth and land consumption reveal probable limits to certain kinds of goods.

- Poverty: Cheap product with little potential of increase in value
- Risk: High access cost, high cost for cultivation
- Pollution: Due to medical products and high concentration of fertilizer
- Stability: Due to stable demands
- Profit: Increasing branch with high value of goods
- Labour: Increasing salary in other branches lead to drain of young people
- Demand: Shift to decorative, value added product with unknown stability of market
- Environmental damage: Destruction of mangroves, natural birthplace for lots of animals
- Bound to a particular location: only on coast line possible
- Required effort: Only 60 days a year
- Required effort: Never used up
- Resources: Never used up
- Food supply: Reduces rice fields
- Start of cultivation
- Active level in agriculture
- Generations
- Knowledge
- Mechanization
- Land
- Production
- Not existing
- Situation today
- Goal until 2020
COMMENTARY
AGRICULTURE
Agriculture has shaped the landscape in the Red River Delta over hundreds of years. Today agriculture is the great loser in the territorial redistribution that accompanies Vietnam’s opening to the West. But agriculture is not only replaced but also adapted. Traditional self-supply rice farming is supplemented or replaced with cash crops for the export market like shrimps or cashew nuts. This creates opportunities but also uncertainty as farmers have to react on both volatile global markets and ever-changing government policies. Rural life in the Red River Delta, while on first glimpse seemingly unaffected by modernization, has become intrinsically tied to urbanization and vice versa. Most of the new factory workers, builders and urban small service providers are all still rooted in the agricultural economy and culture, be it as part-time farmers, seasonal helpers or through their family relations. Guaranteeing this large but vulnerable base of the Vietnamese population minimal means of self-sufficiency are still a government priority but conflicts between traditional egalitarian rural structures and land need for capitalist developments increase. The see-saw between free market and state guarantee, modernity and tradition, finds its immediate reflection in the territory.
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Spring Semester 2012
TRANSPORT AND MOBILITY
MOVEMENT OF PEOPLE AND GOODS

A PATCHY NETWORK
Political Shifts Parallel to Key Infrastructural Moments
National Bipolarity
Autonomous and Disconnected Networks
Land Use Problematic

THE REIGN OF THE MOTORCYCLE
How the Motorcycle Conquered Hanoi
Fear of Overcrowding Calls for Concrete Improvements in Public Transport
Discrepancy between Planning and Reality

SOCIETY CHARACTERIZED BY MOTION
Urban Movement Rituals
The Motorcycle Lifestyle

FOLLOWING THE GOODS
Flat Redistribution through Flexibility
Wholesale Markets: Bottlenecks of Various Fluxes

EVENLY SPREADING URBANITY
The Homogenizing Energy of the Street Use
Balancing Out Transport and Economy
A PATCHY NETWORK

The Red River Delta’s transport networks are a consequence of political climate over different periods of time, and the physical reality of Vietnam’s slender, elongated territory connecting two fertile deltas N to S. Since the Vietnam-American War, development focus has been road-oriented, neglecting other infrastructures. As a result, networks are both incomplete and not overlapping in strategic points. Roads are above capacity in urban areas, and implementation of hierarchy in this system is made all the more difficult with the nature of informal growth close to new infrastructure intended for phased intensification/widening (this formal-informal process we will illustrate later on in this chapter).
Political Shifts Parallel to Key Infrastructural Moments

Throughout its history, Vietnam strongly resisted a myriad of foreign influences. However, substantial development occurred during periods of colonization, namely constructions in water and rail infrastructure by the French. The Vietnam-American War on the other hand, had a detrimental affect on the preexisting infrastructure, most of which had to be slowly reconstructed in the 70s and 80s. And in recent political history we observe a dire need to reconstruct the laws of government in order to facilitate much needed development in the country. Opening up to the free market though, infrastructure is now planned and implemented by a myriad of private actors, and unfortunately also lacks coordination on a larger scale.
National Bipolarity

Population distribution in Vietnam is focused on the two deltas and along the coast. This linearity of circulation is enhanced by the introduced bipolarity between the two growing megalopolises, Hanoi in the North, and Ho Chi Minh City (HCM) in the South. As American presence in the South exposed this part of the country to a market economy and other favorable conditions (i.e. large land ownership), this part of the country, and HCM City when compared to Hanoi, are far more developed. However, the political ambition and current development all point toward achieving two economic centralities in both deltas.

Shortening the Territory by Flight

HCM City and Hanoi are some 2,000 km apart, a vast country between them. It is no surprise that with the possibility for air traffic, the two cities immediately became closer, and nowadays there is extensive commuting for work and other reasons (i.e. family visits).
Simple Lines
Rail tracks are often not exceeding one simple rail line connection, and in the city of Hanoi, one experiences them like tram tracks, as they are also not segregated from other means of movement (i.e. pedestrian traffic), which mostly represents no problem, as so few trains cross the tracks on a day to day basis.

Unprotected Tracks
In many places, train tracks lie unprotected, especially in the countryside, where they are sometimes only a meter apart from the house facades.

Small Volumes of Goods
The train fulfills an intermediate demand for transport of goods when the quantities are not big enough to hire a truck. The tiny Long Bien station, situated next to central markets for goods, has neither storage, nor good access from the street. Goods are brought using smaller transportation means, push carts, trolleys, or via motorcycle (which we will illustrate later on has extensive storage space).

The Age of Steel
Long Bien Bridge close to Hanoi’s Center, built in 1903 by the Eiffel Company, was the first steel structure crossing the Red River in Hanoi and offered the most important connection to Hai Phong and China. Still today, it is very expensive to construct crossings over the giant span of the Red River, and this is mostly the reason why development of the city has not successfully focused on the East Bank. In the 70s, the bridge was bombarded by the US, it’s structure however withstood the attack, despite being weakened and requiring reparations.

Railway: Infrastructure of Past Times
Railway connections were implemented extensively only in the time of French colonial rule. Since then most of them have fallen into disrepair, and are neglected in use. Connections exist from Hanoi to HCM, and some lines connect to the Chinese rail system. On the map are shown frequencies of trains departing from various central stations (Ga, alluding to the French Gare).

Transport of people

Transport of goods

Over 3000 trains daily
Tokyo Station

6 trains/day
Ga Long Bien

20 trains/day
Ga Hanoi

5 trains/day
Ga Saigon

14 trains/day
Ga Vinh

13 trains/day
Ga Da Nang

57 km/h
30 hours
Ga Hanoi - Ga Saigon

8 trains/day
Ga Lao Cai

4 trains/day
Ga Hai Phong

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The Changing Nature of the Red River

During the dry season, from October to April, exploitation of the waterways is difficult due to the low water levels.

Two Very Different Delta Mentalities

In the Mekong River Delta use of the waterways was from the beginning part of a comprehensive approach; transportation on this network has been developed and is still well maintained. In the north however, waterways are under used, partly because of a certain distrust of the inconsistent water levels.

Impracticality of Ferrying Over Water

This is a port of call which very rarely greets the waters edge. Inconsistent levels of the Red River have rendered preexisting infrastructure quite useless. Chinese barrages contribute to the lowering of the volumes of water coming through the basin.
Autonomous and Disconnected Networks

By looking at the different transport types within Greater Hanoi, the dominance of the roadways is obvious. In such an uneven distribution, the notion of hub as a meeting point of different networks seems to lose its relevance. If there is no overlap between the networks, is it possible to locate nodes of exchange?
Proximity without Exchange
There is however no real exchange between the different modalities. People mostly come and go from this crowded place with the same individual means of transport and they concentrate due to the location of two big wholesale markets nearby, Long Bien and Don Xuan.

The Quest for Inter-connectivity
The area around Long Bien Bridge close to the urban core in many respects has the appearance of a hub, combining rail, road, water infrastructure, a bus interchange and parking within close proximity.

Proximity without Exchange
There is however no real exchange between the different modalities. People mostly come and go from this crowded place with the same individual means of transport and they concentrate due to the location of two big wholesale markets nearby, Long Bien and Don Xuan.
Road Ratio within Greater Hanoi

Land Use Problematic
The road network serving Hanoi mostly tends towards a hierarchy based on the monocentric principle: a sequence of ring roads of different priority, i.e. the onion principle. However, most rings are not fully implemented, and this radiality is jagged and patchy. This makes evasion of traffic jams impossible. Enlargements of the arterial connections are foreseen, however their implementation is impeded by informal urban fabrics that tangent toward intensely used roads.
Urban Core
Road network density in the Ancient and French quarters is, as is to be expected, very high, and the structure formed is grid-like. Due to total occupation of the sidewalks for commercial activities and parking, pedestrians often walk along the roads themselves. The street is a complete stage of modalities and exchange.

Urban Fringe
New developments are situated between the 2nd and 3rd ring roads. There, in the as yet unconsolidated fringe, the road network is less dense, but the roads can be wider and often include barriers separating the two directions of traffic. Deeper into the neighborhood, narrow streets as in core also appear.

Suburban Periphery
A mobile Vietnamese population now settles to be near the city center, but for a decreased cost than if one were to settle in the city itself. Settlements concentrate along the few very wide roads (some of which are called “highways,” however they are often spotting traffic lights, commerce etc.). Often rudimentary in finishing (i.e., without curbs).

Rural Hinterland
Hanoi has grown outwards to engulf some old villages, others are becoming affected by the new masterplanning which has redrawn the municipal boundaries. Infrastructure though, remains undeveloped, small paved roads without sidewalks, or dirt roads, service these areas.
While the Metro still remains problematic, and an immense investment in the watery delta conditions, stacking upwards seems to be an acceptable alternative to meet the demands of ring road traffic, and serve as an alternative to relocating people owning houses along the street.

Our understanding of uninterrupted fast traffic associated with highways is of little use in this context. Often what the authority calls a “highway” is a one/two lane road, which can have settlement along it, traffic lights, commerce, and can even lead to a middle of nowhere...if one is not well informed which roads are complete.

Since the government is usually not able to implement great infrastructural projects in the city all at one time, a phasing logic is devised, starting with a two lane road. Informal settlers creep in to take advantage of new opportunities, and are subsequently extremely difficult to relocate, as the urban fabric consolidates rather quickly, and expansion ceases to be an option.
THE REIGN OF THE MOTORCYCLE

During the last decades, the visage of Red River Delta's streets has completely changed. Nowadays the bicycle merchants and road travelers are replaced by motorcycle drivers. The modality has conquered Vietnam unbelievably fast and has started to cause a criticism and resistance to it's further proliferation from the side of the traffic planning authorities. However, it holds steady as a favorite for many a citizen for whom it is the first affordable fast means of transport that he is able to purchase with his buying power.
How the Motorcycle Conquered Hanoi

Walking around the streets of Hanoi, one is quickly overwhelmed by how dominant the motorcycle really is (4/5ths of all traffic on the streets is occupied by this modality). What socioeconomic changes contributed to this trend, and how was it facilitated so quickly by the market (as all the brands are in fact foreign imports with their own distribution logics)?
Testing Modalities

Movement patterns were followed and mapped on Lo Duc Street, which lies within the inner city and constitutes one of the radial axes extending outwards. A distance of 1.2 km was taken, observations made both during rush hour and outside of the normally intense traffic hours.

Efficiency of Various Modalities

The car is the most expedient way to travel around the city, safe during clog-ups at rush hours (not an uncommon occurrence in the slowly congesting metropolis). The motorcycle emerges as much more favorable during this time, and in addition has the edge of being many a time more affordable than imported cars. The bus offer is extremely appealing price wise, however tends to not fare so well around the city at the critical times. Such performance, especially when buying power of the citizens is taken into account, easily explains why the city is overrun with motorcycle owners to this date.
**Affordability of the Motorbike**
In Hanoi the motorcycle has reached the same status as the car in Switzerland, namely, almost every household owns one to two of them, and in the rural areas, even though people possess less, each family owns at least one.

**Who uses What?**
As the motorcycle use increases with income, walking as a preference declines. Cars are affordable only to the upper classes and the bus is mainly preferred by students or senior citizens.

---

**Average monthly income**
- **Hanoi**
  - $1,700
  - 16.5 days of working
  - Honda $950
  - 19 months and 6 days of working
  - VW Golf $3,100

- **Switzerland**
  - $6,300
  - 3 months and 21 days of working
  - VW Golf $23,400
Private Motorization Booms

Post Doi Moi 90s were marked by an increase in GDP, average monthly incomes of Hanoians, and a significant increase on motorized vehicles from neighboring China, Korea and Japan. This process marked a decrease in traditional transportation means, like the bicycle. While the bus transportation network, which has been improving since 2000, alleviates the traffic only slightly, import of cars is recently also increasing.
Fear of Overcrowding Calls for Concrete Improvements in Public Transport

The 'motorcycle capital' is marked by the specific negative side effects that accompany this modality: high accident rate and high rate of noise and air pollution. The biggest obstacle is naturally the lack of alternatives, as the motorcycle is by far the favorite in regards to the cost-effectiveness ratio. The traffic problems of the city are exacerbating.

Dangers on the Road

All around the world, the motorcycle emerges as the most dangerous travel modality. The city of Hanoi has additionally a degree of informality to the conduct of traffic itself, regulation is lean, and people are more used to communicating with each other (via honking or verbally) in order to bypass traffic, and don't rely on the adherence to rules of the road.

The confusion often leads to accidents, however the more lethal ones tend to be on the major arterial roads and in the open country, where higher velocities can be developed.

What remains interesting is that there is a degree of empathy involved in settling payment obligations when an accident occurs, namely that both the financial circumstance as well as the extent of injuries are considered.
Rejecting the Car...

Car ownership is taxed severely in Vietnam, as the comparison above shows. The so named “luxury” tax is all that stands to slow down car expansion in the city, for which the road network is entirely unprepared.

<table>
<thead>
<tr>
<th>Country</th>
<th>Tax Rate</th>
<th>Average People per 1000</th>
<th>Average Tax</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vietnam</td>
<td>13 / 1000</td>
<td>$14,200</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>34 / 1000</td>
<td>$2,900</td>
<td></td>
</tr>
<tr>
<td>USA</td>
<td>439 / 1000</td>
<td>$1,600</td>
<td></td>
</tr>
</tbody>
</table>

...to Avoid a Catastrophic Scenario

With the current availability of road surface, we have extrapolated what would happen if motorcycle owners started replacing their motorcycles with cars, and how much road area would subsequently be required to facilitate such a transition.

3 additional lanes needed

10 cars

20 motorbikes

+ 150 % extra road area required

Existing condition of roads

v/434

– Transport and Mobility –

v/435

– The Reign of the Motorcycle –
Bus Network, Emergency Measures
Swiftly implemented after 2000, the bus network combines a low price strategy with subsidies and is based on demand. However, its capacity is limited, the inner city does not allow for further expansion of the lines, and the outer rims require a lot of resources in order to increase coverage, which is at the moment minimal.
The city administration aims to implement five metro lines until 2030. At present, only fragment parts of two lines are under construction, and the enormous costs, as well as numerous actors playing out their different “personal interests,” represent giant hurdles to planning. Most citizens are sceptical towards the implementation of the metro, as the discussion has been tedious and stagnant.
Discrepancy between Planning and Reality

Though a lot of visions exist, one can ask oneself if these long-term plans, which are mainly based on foreign models, coincide with the actual movement habits of the people. Reciprocally, the strong phenomenon of informal street use can be read as a reaction of individuals towards the lack of down-to-earth plans from the government.

Interests and Actors

A map of planning reveals a noodle soup of differing interests and actors. There is no clear designation between what the national ministry and the provincial authorities handle: metro lines are planned by both the MoT and the HPC. In addition to this initial administrative overlapping, private money is procured in order to carry out the works (and studies), which further complicates matters, as there is not a coherence between different modalities, and not enough coordination to make the coverage comprehensive (as private parties try only to maximize their reach).
Relieving the Metropolitan Core...

Hanoi has been facing great urbanization pressures ever since the Doi Moi reforms. The counter strategy of the government is the implementation of a series of satellite cities with sufficient economy and sufficient connectivity to the Metropolitan core. This plan however requires great economical study, which has only been treated superficially thus far, and great investment in connecting infrastructures, which is also a long way from being realized.

...vs. Actual Demographic Trends

Hanoi has been discussing its growth for the last 20 years incessantly, which is evident from the long series of masterplans that the city has introduced in these years. All of these discussions though lag far behind reality, and are not creating the counter current that the government wishes.

In actuality, migration and population increase is clearly evident in the Metropolitan Core, as well as along the three major roads radially leading out of the city. These roads are connecting an emerging industrial highway pattern, which is creating an economy southwards and eastwards of the city, while the governments ambitions to form a constellation of satellites on the west lacks an economic backbone.
New Regulations...

One factor hindering the possibility for the bus network to expand and increase its efficiency is the “cluttered” nature of the sidewalks themselves. Regulations are enforced to reduce street activity, improve walking conditions and give back open space to the street. The policies focus on strict parking regulations, high fines where this is not adhered to, and finally on limiting commercial activity on the sidewalk. With the enforcement of such regulation, the government hopes to change the street “image,” as well as allow for a more efficient public transport network. It becomes a procedure of “cleaning,” as a core idea behind the regulation is to reduce informality.

...vs. Habit

Street commerce, however, has a long tradition in the city. People have adapted to the speed and density of these activities well with the use of the motorcycle, as one can conveniently navigate to the particular store or food vendor one desires, execute an improvised parking maneuver, and just as easily leave once he is finished conducting his/her business. Therefore, quite often, sidewalks are filled with still and moving traffic, and “strolling,” as one would conceive of in the West, is not common practice, save for shorter distances. However, the biggest inconvenience is not for pedestrians, but for car drivers and buses attempting to bypass these activities.
SOCIETY CHARACTERIZED BY MOTION

One must wonder, when one witnesses the extent of how much mobility has pervaded the life of the Vietnamese inhabitants, where are all of these crowds moving, i.e. what are the migratory and commuter trends characteristic of both Hanoi, as the central focus point within the Red River Delta, and then characteristic of the countryside, which also seems to be greatly affected by these modern improvements. We attempt to map out in particular how Vietnamese life specifically adapted the potentials of the motorcycle toward already common everyday life practices.
Urban Movement Rituals

Looking at different people on the demographic chart, we try to uncover their habits of moving around in the city. How much does lifestyle, age and economic background impact modalities, and also locations in the city which are visited? Respectively, how much is the structure of Hanoi a result of trade or movement logics?
Daily Commuting Taxi-Driver
A 30 yr. old man commutes daily from a distant village in order to work as a taxi driver in the city. Outside of work his additional movement habits include food shopping in his village, and other social activities, mostly with the motorcycle.

Hairdresser
A 25 yr. old woman daily traverses short distances with the motorcycle, walks to the market near her house, and also uses the motorcycle to visit relatives in 100km away Ninh Bình.

Daily time spent in traffic = 1h 20mins

Street Chef
A 50 yr. old woman not able to afford a motorcycle lives close to her work, her family and her local market. She mostly travels by bicycle, which is able to fulfill her transportation needs.

Daily time spent in traffic = 30 mins

Highly Mobile Student
This student moves a lot, because he lives far from his university and has to move a lot while working for another university during his spare time.

Car Owning Doctor
Ha Dong was a small city, now part of the greater Hanoi. It has its own hospital and facilities, which allows the doctor to usually stay in this area, for work or leisure-time activities, mostly using the motorcycle although he owns a car.

Retired Woman
This recently retired woman moves with the bus. At a younger age, she was using the bicycle and never learned to ride a motorcycle, which seems too dangerous to her. The bus is rather convenient even if it is often crowded and not always very clean.
Xe Om: Individual Taxi Service

Cheaper than a car taxi, one can often observe Xe Om, motorcycle taxis, waiting on street corners to fare people around the city. It is most frequently used by people who cannot themselves afford a motorcycle, to go to places where the bus system is inflexible. Even motorcycle owners use them, for instance on making one way trips. The drivers are only men and often daily commuters or seasonal migrants from suburban and rural areas.

The Motorcycle Lifestyle

The motorcycle is built, it seems, for every convenience. Its small size allows very individual and flexible movement patterns, and it can also carry more than one person and big loads. The freedom in its use, enhanced by the lack of implemented regulations, impacts daily habits, and thus the physical redistribution of activities in the urban fabric.
Freedom with the Motorcycle
Driving a motorcycle in the Red River Delta seems to be a special way of life. The motorcycle has reached the status of cult object, one which enables its owner to go anywhere. Driving is relaxed and one can adapt easily to the traffic with highly flexible movements, like a fish in a swarm heading down river.

Easy to Park
One of the perks with the motorcycle is that it doesn’t require too much in the way of parking. Therefore, even though their is little designated space in the city, people utilize ground floors of their shops, or indeed their houses, in order to park the motorcycle.

Impact on Commerce
The ability to stop almost everywhere results in a flexibility which enables people to be on the whole very spontaneous via their mobility. This means that the commercial activities do not have to be concentrated or even designated. Due to this, fresh goods are available to be bought anywhere, even the most unexpected of places.
FOLLOWING THE GOODS

Transport of goods is supported by a robust infrastructure, and one can eat fresh produce almost anywhere, and access a wide variety of products in ones neighborhood. Whereas movement of people did not reveal any hierarchy in the way of hubs of exchange, transport of goods tells another story. Goods are gathered in certain points/markets, sold, resold, and then carried on further for distribution. However, different goods reveal different logics of convergence, as this chapter aims to illustrate.
Flat Redistribution through Flexibility
How are the fresh goods daily distributed daily to all parts of the delta? Here again, the flexibility and diversity of movements plays a decisive role. To understand it, we focused on a flower producing village of Hanoi, the Quang Ba wholesale market for flowers, the Long Bien wholesale market for fruits and the Don Xuan wholesale market for industrial products.
...Surrounding Villages
Some flowers are produced for a local scale. They are destined to be sold in surrounding villages, to shop owners, or during festivities on special markets organized nearby to supply a temporary surge in demand.

...Quang Ba Market by Individuals
Villagers producing relatively small quantities of flowers go to Quang Ba market two or three times a week to do commerce. On the way back, they sometimes sell the remaining flowers on the roadside.

...China by a Wholesaler
Families producing larger amounts of flowers sell them to wholesalers who come to Tay Tuu to collect them. When the demand is low, they go by themselves to sell the flowers at Quang Ba market.

Flowers from Tay Tuu Village to...
Found at Wholesale Markets are...

...Flowers from Tay Tuu Flower Village
Regional wholesalers collect flowers in Tay Tuu with small trucks and bring them to the Quang Ba flower market in the middle of the night. The quantity sold by these wholesalers is usually less than the merchandise coming from farther regions, or abroad.

...Flowers from Dalat
Dalat is a big flower producing city in the central highlands, where the climate conditions are ideal for cultivation. In Quang Ba market the flowers are first sold to a Hanoian wholesaler in large quantities, before being resold and redistributed in Hanoi.

...Mangoes from Thailand
Since wholesalers from abroad do not possess a parking place within Long Bien fruits and vegetables market, most of their trucks are unloaded in a very short time by wholesalers from Hanoi who have their own market stalls.
....Shops in Hanoi
Sellers go themselves to the wholesale markets every night to supply their shops with fresh products, which therefore cover all Hanoi with a high density and even spill onto the “urbanized roads.”

....Street-selling
The traditional street vendors, using bicycles or baskets suspended from wooden poles, are still commonplace. Their products are brought from the wholesale market, otherwise the street seller is the farmer coming from a surrounding village selling his/her own products.

....Shops in Other Provinces
The Dong Xuan market supplies not only Hanoi with industrial goods, but also the whole north and central Vietnam, making it a very interesting point of exchange, i.e. bottleneck for goods redistribution.
Industrial products at Don Xuan market

Fresh goods at Long Bien market

Wholesale Markets: Bottlenecks of Various Fluxes

Individual goods from all around eventually make it to specific accumulation points, in this case wholesale markets in Hanoi, before getting redistributed again in the greater region, i.e. North Vietnam. Each market is specialized in a product and has its own suppliers. The functioning and typology differs between industrial and fresh produce markets, i.e. differs according to the nature of the good.
Permanent Industrial Goods Market

The Don Xuan Market covers quite a large area. Furthermore, its distribution area is much greater than Hanoi, goods here trickle into the whole Red River Delta. This makes the market an important exchange hub, through which goods are constantly coming and going.

Temporary Fresh Goods Market

In the dead of night, a previously empty surface next to a wide road can change into an intensive distribution node for fresh goods. Over a brief period of time, a huge amount of goods from everywhere is collected, sold and resold again to distributors, which spread them from there all around Hanoi.

Distribution

- Airplane
- Ship
- Big truck
- Small truck
- Motorcycle
- Bicycle
- Pedestrian

In the dead of night, a previously empty surface next to a wide road can change into an intensive distribution node for fresh goods. Over a brief period of time, a huge amount of goods from everywhere is collected, sold and resold again to distributors, which spread them from there all around Hanoi.

China 85 % of Goods

Informally imported without taxes

BIG WHOLESALE MARKET
2 am to 4 am
Big amounts of goods are sold for a low price to the sellers of the small wholesale market

SMALL WHOLESALE MARKET
4 am to 6 am
Smaller amounts of goods are sold to a higher price

Customers are shop owners or street sellers from Hanoi

Wholesalers from everywhere bringing big loads by truck

Wholesalers selling goods they brought themselves

Wholesalers from Hanoi buying and reselling goods here

Wholesalers bringing small amounts of goods and selling it without market stalls

Farmers bringing small amounts of goods and selling it without market stalls

Villagers from Red River Delta

Situation

BIG WHOLESALE MARKET

2 am to 4 am

Big amounts of goods are sold for a low price to the sellers of the small wholesale market

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Wholesalers bringing small amounts of goods and selling it without market stalls

Farmers bringing small amounts of goods and selling it without market stalls

Villagers from Red River Delta

Situation
EVENLY SPREADING URBANITY

Implementation of modern means of transportation has had a widespread impact on the Vietnamese society. In combination with the possibilities emerging from the Doi Moi economic reforms, a certain soft adaptability has developed for evolving urban conditions. Tradition and nature are no longer providing resilience in the landscape, and the ease with which people are able to move, means that an informal urbanity is able to "spread" itself evenly in all directions that provide even the dimmest of incentives for an economy for life. In this regard, the motorcycle has certainly acted as a potent catalyst for bottom up entrepreneurs.
The Homogenizing Energy of Street Activities
The flexibility provided by the individual transport means leaves its mark on the city fabric. Most of the ground floors, sidewalks and streets, from the old quarter to the suburban roads, are occupied with restaurants, cafés, markets, shops and every other kind of commercial activity. It results in a flat, non-hierarchical use of the urban network, as it fails to consolidate into higher groupations, but rather chooses to continue evenly dispersing, spreading homogeneity.
Balancing Out Transport and Economy

High mobility and flexibility of movement patterns provided by the increasing individual motorization, allows widespread commercial activities, which works hand in hand with informal street use and represents a bottom-up economical energy uniquely characterizing the city of Hanoi. On the other hand, the booming economical development requires new visions for Hanoi to become a competitive metropolis, and the normal day to day functioning of the city has grown too dense to allow for further development of the system, calling for top down interventions from the government in the way of infrastructure and investment, in order to allow a higher order of commerce to emerge. Towards this goal, the authorities implement projects and regulations that work counter to existing economic logics of the city, trying in vain to minimize informal street use.
COMMENTARY
TRANSPORT & MOBILITY
Every aggregate state of urbanization knows its ideal means of transportation. In the Red River Delta of today this is the motorcycle. Although the threat of the automobilization is looming and plans of high-performance public transportation are in the making there is currently no feasible alternative to the omnipresent swarms of scooters. But the motorcycle is not only a product of its environment, it affects the way the city is used and therefore creates its own character of urbanity.

The motorcycle needs no stations nor hubs: Hanoi is thus not structured by important nodes but much more by flows of movement. The motorcycle can stop anytime and anywhere: this allows for the street to become a continuous market. The motorcycle itself, as it can be used to transport surprising quantities of produce, is both a supplier and consumer in the city’s distribution of goods. The complete reliance on private transportation also blurs any distinction between city and countryside and even between individual neighborhoods within the city. This creates an atmosphere of flatness, a lack of spacial hierarchy but also of continuous vibrancy which is specific for Hanoi and large parts of the Red River Delta.
QUẢN LÝ NƯỚC

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Spring Semester 2012
VI
WATER MANAGEMENT
MODERN CHALLENGES

NATURAL THREATS FORM A TERRITORY
A Country Rich with Water
Rice Bowls of Asia, or on the Significance of the Deltas
Dike System Development vis-à-vis Human Settlement

WATER RESOURCE POLITICS
Top-Down Control
An Intricate, Old System
Treatment of Waste Water
Rights of Access to Clean Water

A GAME OF JEOPARDY
One System
Expanding Urban Morphologies
Health Risks
International Support
Lessons from the Past, Awareness for the Future
NATURAL THREATS FORM A TERRITORY

In the territory of the Red River Delta, structure has been formed by the element of water. Especially during monsoon seasons, floods covered on a yearly basis two thirds of the area and formulated the wide and open land. For settlement purposes, people had to find a way to deal with the natural danger. The delta’s complex dike and canal system has been built in an incremental way both for protection, as well as to allow irrigation, since the 8th century. The system transformed the delta into a dense and structured polder landscape. In the past, natural threats were the driving force for transformation: the perfection of the water management mechanisms, as well as agricultural improvements. These formed a robust landscape, not easily changed. Today, with the onslaught of urbanization and industrialization, the negative effects of demographic growth and climate change are more important drivers and the water infrastructure that is embedded in the landscape is no longer the organizing force for development, but rather a coulisse upon which the new processes are occurring. Modern traces are overwriting the traditional layers of the land, even though the first wave of large scale transformation was the result of a very long and gradual process, and has left behind a rigid and comprehensive territorial structure.
The climate in Vietnam varies greatly from north to south. The north has a cool and dry season from November to April and a hot rainy season from May to October. The central coast north of Nha Trang has a similar climate with the winter monsoon bringing cool, wet weather between December and February. The south is hot and humid all year round, especially from February to May. The rainy season lasts from May to November.

The central highlands have a similar climate to the south, but it is cooler and temperatures can be freezing in winter. Mean annual rainfall is about 2 000 mm, which is almost the only source of surface water. About 75% accumulates in only three months, more than 30% usually in only one peak month. This occurs from July to September in the Northern and southern areas and from September to December in the Central area.

In Vietnam about 830 bil. m³ of surface water are discharged every year, which would mean a distribution of 9 856 m³/person/yr. This number is much higher than the international standard of 1 700 m³/person/yr. However, the great variation of water resources over the year and unevenly spaced out distribution due to seasonal fluctuations, leads nevertheless to risks of water shortage. Modern projects effected without sufficient study of the consequences prove to be another contributing factor.
Natural Hydraulic Zones

The Red River Delta's water landscape is characterized by the hydrological profile of its rivers/riverlets. The dense network of canals has channelled its way through the landscape for hundreds of years, and their movement has given the landscape its differentiated character. The delta can be subdivided into three hydraulic zones, according to the natural principles of water flow and topography. The river or reservoir flow dominated region (1) belongs to the 'old' delta and is formed by terraces, hills/land on higher elevation. It drains quickly, and by gravity. In the transition region (2), floods occur: fields are situated on a lower level, human settlements are situated on higher ground, where they are better protected. Water levels can rise quickly. The sea level or tide-dominated region (3) is the "newest" part of the delta. The flow is spread over a larger flat area. The inflow of salt water from the East Sea (disputed by China to be called the South China Sea) reaches 20 km to 30 km inland, causing salinity problems.
Rice Bowls of Asia, or on the Significance of the Deltas

Two great rivers of South East Asia, namely the Red River and the Mekong, both end their journey in Vietnam, formulating two vast delta regions north and south. However, the approach toward the water has been very different in the past between the two deltas, due to different characters of the two rivers (the Mekong being much more calm and less threatening to survival). People have busied themselves with rice cultivation and aquaculture cultivation, but in order to do so, in the northern Red River delta, one had first to fortify the land and regulate the flow with dams and dikes, and intricate irrigation systems. In the southern Mekong, respectively, one could easily flood vast fields without much land transformation required beforehand, but one had to adapt ones living environment to fluctuations of water, which inspired housing typologies on stilts, and extensive water transport systems. In the north, one had to protect himself from the water, in the south one had to learn to live with the water, but one thing is clear, the two deltas, with their potential abundance of produce, were ideal cradles for permanent settlement.
Due to seasonal climate variations and the fast downstream of the rivers, the people living in the Red River Delta have always been faced by natural disasters, both floods and droughts. The control of water has therefore always been a very important task. The development of settlements was traditionally closely connected to natural circumstances of water and the works of water control therefore reflected in the hierarchy of communities and the political power.

### Dike System Development vis-a-vis Human Settlement

- **10th century**
  - settlement on strategic ground, high ground, slightly inland from rivers/riverlets
- **15th century**
  - settlement along rivers and roads, in order to gain access for trade
- **19th and 20th century**
  - densification around village cores, protection of agricultural fields
- **21st century**
  - settlement along high roads (along dikes) and further densification around preexisting settlements.

### Land Adaptation for Settlement

- **10th century**
  - flooding area, paddy fields
- **15th century**
  - small dikes
- **19th and 20th century**
  - regulated canals
- **21st century**
  - land transition from rice cultivation to industry.

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**VI/494**

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**VI/495**
Road atop a dike in Namh Dinh
1862 Territory loss to the French
1883 Establishment of protectorate Annam, Cochin-China and Tonkin

1872 Occupation of Tonkin (French name for the Red River Delta)

1884 French force the Vietnamese to sign the Treaty of Tientsin

1950 - 1956 Agrarian reforms

1958 Establishment of the Water Ministry

1962 More than 80% of state investment for water

1964 - Tonkin Resolution

1964 Communist reunification

1965 - 1974 Bombing destruction of dikes by the Americans

1971 Hanoi flood

1973 - 1975 Second Indochina War (Vietnam/American War)

1975 Creation of protective dikes and irrigation infrastructure 1955 - 1956

1980 Establishment of the Water Ministry

1982 Creation of a Central Park system in Hanoi

1984 - 1985 French - Chinese war

1986 Doi-Moi economic and political reforms

1996 - 2000 Asian Development Bank finances new dike construction

2010 Development of Northern Hydraulic Planning Institute

Dike Development and Profile Improvement
Water management after Independence

In the Vietnamese struggle for independence with the French, there was massive destruction to the dyke system in the Red River Delta. Therefore, from the end of 1945 until early 1946, there was exceptional mobilization of social labor by the State for dyke repair; more than 1,200 kilometers of dykes were repaired, which involved 11 million workdays and the moving of 2 million cubic meters of earth [Nguyen 2007: 220-1]. In later years, an additional 13,880,000 and 17,735,000 cubic meters of earth were moved in 1955 and 1956 respectively to create protective and irrigation dykes [Phan 1995: 158-60]. From the beginning of the 1960s to the end of the 1970s, a huge amount of work was undertaken. In comparison with 1959 where there were recorded 2.3 million man-days, 9.8 million man-days were recorded in 1962. More than 80% of State direct investments were dedicated to water management improvements. Large drainage and irrigation schemes were created with a canal network from primary to tertiary levels. Channels giving access to rivers were excavated and large-scale irrigation and drainage pumping stations were built. Between 1961 and 1965, more than 2,500 pumping stations were built in the Red River Delta. [Vo, Nhan Tri, 1967]

Imperial Water Management

The oldest dike systems trace back to the 8th century. In the 15th century an innovative soil dike system was set up by mandarins to gain more land along the coastal zone. Without it, two thirds of the Red River Delta would be inundated over summer. With the arrival of the French, Vietnam's landscape changed once more. The former art of adapting to the river flow was traded in for a large-scale technical approach of total control over natural conditions (which is only now revealing it's inadequacy vis-a-vis the environment). Advances in agricultural production however predated these improvements.

Technical Improvements by the French

After some big natural catastrophes, flood control took the highest priority and was approached by upgrading the old river and sea dikes and regulating the irrigation canal system. Upgrading of former dikes with new techniques enabled major changes in water management.
WATER RESOURCE POLITICS

Complex hydraulic infrastructure was a precondition for complex social organization in the delta. Hierarchically organized society emerged out of villages which were previously individually responsible for managing their own water. With the creation of an empire, and later the state, larger scales of intervention were possible, creating one comprehensive system out of the fragmented, small scale irrigation systems. Modernization of such a landscape was first started with grand projects of the French, and later continued under the political umbrella of collectivization and cooperative modes of production. Now, sixty years later, demand for water has grown, supply and distribution function at their limit on systems overwrought with complexity, stemming from the gradual centuries long consolidation of the system, and climate change emerges as yet another critical factor to contend with, influencing debate relating to local as much as international politics (the Red River flowing through both China and Vietnam). The preexisting management infrastructure is no longer equipped to handle the rising issues, and other actors are appearing, at least to study and discuss water politics.
The complexity of the water sector is reflecting the current problems concerning water management in Vietnam. Surface water is not managed by any one institution, but organized top down, from the Prime Minister then down through different political levels (ministries, departments and companies). The planning of, for instance, waste water and clean water are handled by different ministries, which makes the whole system even more complex. Monitoring and balancing, two important aspects of management, are not yet solved. The practical reality of communication lack intra Ministries, makes the matter all the more overburdened by bureaucracy.
International Waters

More than 60% of Vietnam’s surface water volume comes from its neighbors. Six of Vietnam’s basin units are dependent on water flow from China, Laos or Cambodia. The Mekong (length of 4,400 km) and the Red River (length of 1,200 km) have their source in upstream China. In both cases Vietnam is at the end of the chain, which makes it highly susceptible and dependable on water decisions taken more upstream. There are no international water agreements between China and Vietnam (like is the case for instance with the Nile River), and China’s decisions for dam construction are creating droughts in Vietnam’s dry season.

Composition of the Red River System

The Red River (Song Hong) is the second largest river in Vietnam. It’s main tributaries are the Lo, Thao and Da rivers, which originate in Southeast China. This means that nearly 40% of the Red-Thai Binh basin’s surface water originates in China. The basin is divided into five sub basins, each one related to one of the sub rivers of the Red River. The Red-Thai Binh basin supplies the major cities and industries with water; in its range lie the major ports. Some of the sub basins, such as the Day-Nhue sub basin, are the most polluted basins in northern Vietnam, mainly because of Hanoi’s wastewater discharge, but also because it provides land for new domestic and industrial development.

Dams as Control Valves

Over 45% of Vietnam’s active water storage is located in the Red-Thai Binh basin, which has to supply a third of Vietnam’s population. Most dams and reservoirs in Vietnam have been constructed for multiple purposes, reducing flood risk, improving irrigation, creating hydropower and a steady water supply. Within the Red-Thai Binh basin are located four major reservoirs: Thac Ba (built in 1973), Hoa Binh (1999), Tuyen Quang (2007) and Son La (2012). Nowadays, water is supplied constantly, and in case of floods, the dams can be opened to relieve pressure.
Energy Demands
Vietnam’s rapidly expanding economy has great need of energy to sustain its growth. For the moment, the implementation and improvement of hydropower plants is a high national priority. The process of implementation is steered by the Ministry of Agriculture and the Ministry of Commerce and Industry, however, such “hot” national topics are naturally the domain of the Prime Minister on a meta level, and the regulations coming then downward through the managerial chain are still not successful when faced with crisis moments of water shortage. A new “water law” has been drafted to improve the efficacy of this bureaucracy, however this has been awaiting implementation since 1998.
Measures to Minimize Flood Effects
The biggest threat to peoples livelihood and property is flood risk. It also impedes development potential. In order to reduce damages caused by flooding, the state undertakes the following measures: dike strengthening, river dredging and clearing, reservoir construction upstream, implementing strategies for flood diverting and retention, reforesting watersheds for natural retention.

Natural Disasters Threaten Economy
Many regions suffer water shortage and occasional drought during dry season. Water shortage affects economic activity, but also the domestic water supply. Along the coastal zone, water shortage also leads to saline intrusion, ruining agricultural soil in the process.

Hoa Binh Reservoir, Impacts
Since its development, the Hoa Binh Reservoir has rendered the Day-Nhue flood basin secure from flooding, save for the unusually high floods (which occur ever 100 yrs.). The reservoir stores large quantities of water, and allows the land to be cultivated intensively, developed for industry, and, as of recently (following the masterplan of Hanoi for 2030), to develop into a metropolitan region with satellite cities orbiting around Hanoi.

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**Dike**
**Sluice of the sub basin**
**Hanoi**
**New satellite cities (Masterplan 2030)**
An Intricate, Old System
Perfection of the water infrastructure (mostly during French colonial times), resulted in an increase of productivity in agriculture. Namely, monsoon cycles allowed for one cropping time a year, post monsoon season, which then improved two to threefold, allowing up to a 300% increase in yields. However, modernization remains impossible due to the intricate field structure prevailing in the delta. Consolidation of the system would be gradual, but there is at this moment no inclination for it, as the field distribution and redistribution remains an important political issue relating to equality among inhabitants. Technical improvements could and have been made in the 30s to 60s regarding traditional irrigation and drainage techniques. Sluices and dams regulate the water flow. During summer (monsoon season), valves are closed preventing flooding, and runoff water is drained and collected via primary canals. During winter, the valves are open, providing the fields with surface water from the rivers. Primary canals mediate water from the rivers to the fields.

Typologies of Hydraulic Units
1. Individual, no pump (tidal)
Dikes protect the land; gates regulate water inlets. The Horseshoe is a system found in the Irrawaddy Delta, closed dikes (polders) are common in tidal and flood-affected regions, such as the Red River Delta. Gates regulate inflow of freshwater in upstream regions and control saline intrusion in the downstream regions.

2. Individual, with pump (both non-tidal and tidal)
Most common system in delta flats. The area is partly or totally protected from tidal effects and from saline intrusion, freshwater comes from upstream and fills up a dense network of canals. Farmers must pump to irrigate their plots in dry season, and drain them in the rainy season.

3. Collective pump, natural channels with raised embankments (both non-tidal and tidal)
Alternative to (2), occurs in areas without tidal effects. Pumping stations are managed by a collective and irrigate or drain the whole polder.

4. Collective pump, raised canals (non-tidal)
Alternative to (2), occurs in areas without tidal effects. Pumping stations are managed by a collective and irrigate or drain the whole polder.
Sluice at Lake Yen Thang, Ninh Binh
**Territorial Entities**

All the major rivers are framed by dikes, which protect the lower land from flooding. One such land entity enclosed by dikes is termed a polder. The Red River Delta is composed of 30 such territorial entities.

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Inlet - sluice on the border of Bac Nam Ha Polder, Nam Dinh province
Mismatch between Territorial Entities and Administrative Entities

Polders are managed by state-funded irrigation and drainage companies, so called IDMC’s. IDMC’s in theory coordinate with the local government. However, a polder can, depending on size, contain chunks of multiple provinces or districts, making any communication difficult. Perhaps this is one of the reasons why these private companies tend to practice their roles autonomously, without prior discussion with the local government, not an altogether ideal solution. Most companies nevertheless work still autonomous and without prior consultation with companies of other polders.
Canal Hierarchy

The canal system is shaped by the topography, built by the basic principle of lowest resistance. Canals serve either for irrigation, drainage or both, and are divided into categories from I to IV.

Canal Hierarchy in Schematics

Jurisdiction of the Province: Primary Canal, CI and CII

The management of the primary and secondary irrigation and drainage system is under the responsibility of 12 corporations with a total of 317 companies and 22,500 employees under the Ministry of Agriculture and Rural Development (MARD). Primary canals are responsible for the transfer of water from the river to the smaller dual-purpose canals. Irrigation and drainage companies (IDMC’s) get direct subsidy from the government for their activities and maintenance work. Canals CI are managed by the province, canals CII are managed on the district level. Irrigation and drainage subsidiary district companies (IDSDC’s) are responsible for irrigation and drainage activities during different seasonal and agricultural demand times. They also maintain the system at this level, supervising pumps and sluices. They are subsidized by irrigation groups and cooperatives who use the water.
Jurisdiction of the Commune: CIII

Irrigation and drainage are administered locally by the users. So called irrigation groups are built up by elected farmers or other people from cooperatives (i.e. village leader or “captain” of production). The cooperative have to collect taxes to pay for maintenance work of these tertiary drainage and irrigation system and to pay the IDMSC’s, which sometimes even compete with the cooperatives to handle the same job.
Irrigation and Drainage

Pumping stations on the communal level are used for irrigation or drainage, or both. The “captain” decides when the pumps have to be run, and he does this in accordance with the lunar calendar. A plumber is elected on a yearly basis for maintenance of the infrastructure.
The Lunar Calendar

In tidal regions there is, in addition to a wet and dry season, a wet and dry period every month. During the dry period (5-7 days a month), seawater pushes upriver and sluices with freshwater need to be opened. The Lunar Calendar is a tool utilized by farmers to predict precisely when the changes occur. Exceptions are March and August, respectively the driest and wettest months of the year, where Lunar predictions are of little use. In March, fields are irrigated every 12 days due to lack of water, and in August every 2-3 days, but they need to be heavily drained due to excess rainfall.

Salinity Intrusion

The low deltas of Vietnam are areas that will be immensely affected by global warming and rising sea levels. The prediction is a rise from 18cm to 59cm by 2100. Already today, salinity intrusion inland is affecting the agriculture during high tide, in the dry season. Soils are becoming infertile due to this, and this will only become more pervasive. Farmers will need to change irrigation methods in order to not depend so much on tidal water flow, relying instead on for instance groundwater wells (which in itself will only be a temporary solution). Another solution is to convert to shrimp farming or other sea-based cultures, which is also already happening in the coastal belt.
Out of Date Infrastructure
Most existing hydraulic infrastructure is very old, in some cases 40 years, works dating back to the French up to 70 years of age, and some dam constructions dating back 30 years. Not a lot of refurbishment work has been carried out since then, and water loss is evident due to this.

Lack of Renovation Funds
The state and provincial budgets are too strained in order to contribute to infrastructure renovation and maintenance, and the tax for water use for agricultural purposes is maintained at a low level. At the moment there is no clear idea on how to improve the situation.
Treatment of Waste Water

Rural regions face more challenges with regards to waste water treatment than urbanized regions, they have weak access to clean water, and lack sanitation facilities. The cities, however, are relying on infrastructure implemented already in the French times, which is insufficient to meet new needs. Households in newer areas have in most cases simply been annexed to this preexisting system. In addition, industrial waste water is an entirely new type of threat: sectors of paper, textile, clothing and leather production are using a lot of water in their production process, but the laws to regulate discharge are lacking strict formulation, and it is an altogether difficult topic to gain information on. Such intransparency is even unnecessary, as negative side effects of industrial waste can easily be monitored by their impact on the environment.

End of the Line for Urban Waste Water

Both septic tanks and latrines are used to collect waste water in urban areas. Modernization with pour-flush toilets is underway in areas that have a steady water supply. These are then still connected to septic tanks, which filter solid waste and let greywater out into the canals. They have to be emptied every few years, an expensive undertaking which is delayed as long as possible. Urban greywater is second only to industrial waste water regarding environment pollution: the Hanoi Sewerage and Drainage Co. estimated that Hanoi discharges daily up to half a million cubic meters of greywater (this includes manufacturing firms, crafts and cooperatives, hospitals as well as households) unfiltered back into the 4 rivers flowing through Hanoi.

Regulations on Industries

Industrial production sites and factories are legally obligated to treat their wastewater before discharging it back into the rivers. As we have seen in one of the previous chapters, international enterprises, which maintain global standards with their operations, tend to abide by these rules. Local entrepreneurs are however more often avoiding these regulations, something which is allowed by the level of corruption present among government clerks.
Low cost Local Treatment in Fishponds

In rural regions and in the periphery of the city, fishponds work to naturally treat waste water. Human solid waste is a traditional fertilizer for rice and provides nutrients for fish. However, black water should decompose for at least half a year before it is administered to a paddy field, which is mostly not adhered to. Fishponds are also used for washing clothes. Modern chemical detergents are polluting the water, which in turns also ends up in the food chain. Modernization, and increasing densities, are rendering traditional cleaning methods hazardous.

Rural Waste Water

Most households use dry pit latrines, single or double vault latrines, only the latter meets the Health Ministry’s accepted standards. Upgrading is proceeding very slowly, if at all, towards the installment of septic tanks, and water is mostly discharged into fish ponds, canals, or used for fertilization. Demographic growth is causing densities where this becomes a problem, and a health hazard. In new village formations (as laid out in the first chapter on road urbanization) septic tanks are more common.
Unclear Jurisdiction

The Ministry of Agriculture, the Ministry of Construction, the Ministry for Industry and the Ministry of Health are all involved in regulating waste water issues. Additionally, the Ministry of Planning and Investment coordinates all large-scale projects in the country. Water resource protection and control is handled again by separate departments within the ministries, blurring jurisdiction, and creating loopholes and bypasses to adherence to the rules.

Lack of Centralized Facilities

Treatment plants exist only in few cities, and most of them are small, used by hospitals, or by manufacturing/production sectors. Only 10 out of 61 larger cities have a comprehensive drainage system. Regions with flat topography often incur spilling of waste water during heavy rainfall.
Fresh Water Sources
In Vietnam two thirds of clean water used in households is surface water, the rest is groundwater. Accessing fresh water means drilling groundwater wells, collecting rainwater, installing taps, constructing wells, and reusing river, lake or pond water treated through qualified filtration systems. Clean water is used to meet daily needs for activities such as cooking and personal hygiene, but also for animals and for ‘clean’ irrigation for vegetables. Due to increasing urbanization and industrialization, surface and groundwater are more and more polluted.

Rain Water Collection
Rain water collection is extremely common in rural Vietnam. Households not connected to a water supply system collect rainwater to irrigate their gardens, wash motorcycles and cars and flush their latrines.

Groundwater Pollution
Most people constructing their own groundwater wells drill to low depths of 12 - 45m underground. These waters are very close to the surface, and are often exposed to modern methods of pollution, as have been noted in the previous pages. In urban areas, water plants are built that drill to the lower aquifers at depths of 30 - 70m, which are still untouched by such pollution.

Inorganic Arsenic (As)
Arsenic originates from sediments in aquifers and is released into the groundwater through a geochemical process. Intake of this highly contaminated water leads to health problems or even fatality. Safety limits for arsenic in drinking water are 10 to 50 μg / l which requires filtration and monitoring before one can safely drink it.

Rights of Access to Clean Water
In July 2010 the General Assembly of the United States accepted the right for access to clean water as a part of the Universal Declaration of Human Rights. In Vietnam access to clean water is a very young topic, most of the infrastructure is built in the last ten years or is under construction. Still many households do not have any access to the water supply, and in many rural regions a supply system doesn’t exist yet. In recent years, international organizations, particularly the United Nations Children’s Fund UNICEF and the World Bank have provided financial and technical support for the development of supply systems and campaigns to promote the use of clean water.
Alternative River Water Treatment

Even if there is no official monitoring in place, the danger of contaminated groundwater with inorganic arsenic is known, and in affected regions the treatment of river water is implemented as an alternative solution.
Supply area Mai Son Commune

Water Prices in Mai Son Commune
- 850 households connected to the water grid
- Total consumption of clean water per day: 400 m³
- Households pay 4,500 VND for 1 m³ (0.21 USD cents)
- Household of four consumes 15 m³/month, 180 m³/yr.

Water Price in Nam Dinh Province
- 70% of households connected to the grid
- 30% collect groundwater or rainwater
- City of Nam Dinh (8,000 households):
  - 100% connected to the water grid
  - Households pay 25 USD cents for 1 m³
  - Industries pay 60 USD cents for 1 m³

Water below Market Price
In Vietnam, clean water has become a scarce resource. Most companies ensure supply for 14-20h/day, and 4 cities are only able to operate for 8-10h/day. Experts think that the low water price and lack of tax income are the main impediments to ensuring a steady supply. However, taxing water at market price is for most rural conditions unrealistic, as the state already struggles to maintain rural economic activities. Considering the abundance of water in the delta, many people consider it to be a public good, free of charge, and have trouble grasping the concept of water scarcity. The price for water in Vietnam rates as one of the lowest in Southeast Asia.

Suppling the Water
The management of clean water is divided into two different groups, urban areas and rural. The department of water resources under the Ministry of Agriculture and Rural Development (MARD) is managing the rural supply and the Ministry of Construction (MoC) is respectively managing the urban supply. Again, coordination between the ministries is almost nonexistent, each department executes their own part of the responsibility. However, contemporary issues coming out of demographic growth and contemporary pollutants will perhaps necessitate a more comprehensive approach that links varying issues together.
A GAME OF JEOPARDY

The state is gambling with the existing resources of the country, even though clear warning signs due to ecological circumstances are abundant. Still today, the issues of the water receive too little attention in political and everyday life of the country. Compartmentalization of management and legislation might not be a model way to function any longer, as the spread of urban settlement and the processes of industrialization are revealing. In the sprint towards modernization, the robustness of the traditional landscape is proving a difficult thing to contend with, and for the moment, the government is simply trying to move along around the natural obstacles. Issues that cannot be solved in the short term are neglected, creating contrasting images of urbanized villages with high-speed internet and mobile phone coverage, and no clean water. For the growing concerns over water management, the country leans on international support.
Informal Sand Dredgers

Especially during the dry season, sand excavation flourishes as a business: everybody who can afford a dredging boat digs sand and sells it for a good price to the likewise flourishing construction companies working with reclaiming and developing land. This activity is mostly informal in character, and the process can erode or damage dikes. On the upside, dredging the riverbed keeps the water levels low, reducing the need to increase the height of dikes, and heavier boats can traverse these rivers without official dredging operations. For all of these reasons, the informal activities are tolerated.

One System

The biggest infrastructural issue with the water network is that everything forms one collective flowing system, and separate types or uses of water are not segregated, but flow freely into one another: the drainage system is not closed, but rather connected to irrigation, human and industrial wastewater is directly let into canals for agricultural use, synthetic pesticides (used for rice cultivation) are from the fields drained into the same canals, water treatment plants then take this water and supply it cleaned into pipelines going to households. This makes use and reuse impossible at points downstream from heavy polluters, i.e. factories and cities. And the more polluted the river becomes, the more chemical additives are needed to clean the water. The system functioned well in the past because there was simply less waste to contend with, and now an upgrade of the system to differentiate the different types of use would entail gigantic investment, if it is at all feasible.

– Water management –

– Opposing interests jeopardise water quality –
Expanding Urban Morphologies
For the moment, urban expansion on agricultural land doesn’t pose a threat to the continued functioning of the water network. However, urbanization often occurs without studying the underlying structures of the fields, and in the long run, this could become yet another problematic with upgrading the system. The current tendency for this growth is along major road infrastructures, which coincidentally usually follow dikes and high ground (process illustrated on opposing page).
Ground Sealing Causes Flooding
In regions with high amounts of annual rainfall, such as Vietnam, it is important for enough open surface to be available in order for the rainfall to be naturally absorbed into the soil. In urban areas most surfaces are asphalted, and not enough space is allocated to allow for this process, leading to frequent floods during the rainy season. As mentioned before, in most cases, there is no segregation between surface water drainage, and other types of drainage (i.e. urban wastewater). This means that the entire system overloads, and highly dirty water floods the city during this overload time. The cities, being located inside of dikes, on low land, cannot simply drain the water out, but require pumps in order to discharge to water back to the rivers. In the case of Hanoi, for instance, even the capacity for the pumping infrastructure overloads and it can take up to weeks to pump out the water. Nowadays, the situation is ameliorated with the construction of dams, which reduces the total amount of water in the system.
Health Risks
In Vietnam general data about the quality of water is very poor. Certain regions, such as Nam Dinh, have been part of international research projects and the influences of polluted water as health risk could be pinpointed. Polluted water can affect humans on different ways, it can debilitate the population, lead to permanent health problems, and lead to fatalities. While these problems are not going away, but are on the contrary gradually increasing, the state is undertaking very little to counter the causes of illness. There is a strong reliance in this sector for international support.
International Support
The international community of health and development organizations are showing interest in the situation in Vietnam, as a country which is developing rapidly. While the government in Vietnam can clearly make use of the expertise of these institutions, there are huge structural barriers to implementing improvements in the country. The reach of these institutions is still minimal, there have only been a very small number of studies conducted in very limited regions. On the national level, there are as of yet no proposals on water policy that take into account the reality on the ground.

Missed Opportunities
Both the wastewater and the clean water systems are significantly financed with international credits. Unfortunately, and not openly discussed, many of these credits never reach their destination. What we have gathered informally (so not to be taken as an official number) is that almost half of this money disappears with corruption. This could be one reason why international institutions choose to act on the small scale, where the results would be visible, and to decentralize the financial mechanism in favor of the local level of governance (although by nature, corruption pervades all levels of government).
Lessons from the Past, Awareness for the Future

There are many open questions as to when and how Vietnam will answer the new demands for water management brought on by the modernization that it is so desperately steering towards. On the one level, there is little to no awareness that even a problem exists, the traditional understanding of the land as a robust reality that can handle any extreme conditions is still prevailing. It is however becoming abundantly clear that the system, although unmistakably robust, is not immune to the new global trends that are spreading around the country, nor to the contemporary pollutants that these trends are bringing with them. On another level, adapting this intricate, old system will require more than good will, and it is an open question how much Vietnam will invest into preserving its water. In most historical cases, wisdom only followed after natural and man made disasters struck. But in terms of accumulated knowledge, we have come a long way from the first urban conglomerations stricken with disease, and can predict somewhat what is to come. It is in fact the fields of planning and design that need to be given agency to convert the landscape into a livable place for the rapidly growing population. Such a necessity was once at the heart of the birth of permanent settlement in the delta thousands of years ago.
Vietnam is a very old civilization, and one defined upon a watery landscape. An intricate and robust, incrementally established “meta”-system of water steering is nowadays akin to a giant in slumber, unaware of the buzzing of the large scale governmental infrastructure initiatives, of the scratches on the surface of the somewhat booming construction industry, of the proliferating unchecked activity of the heavy and light industries. All of these current activities are relatively ignorant of the intricate system that they are acting upon, and while water management has in the past offered stability allowing for flourishing and development, it holds a somewhat threatening role for contemporary Vietnam: it is an ageing system in need of ever higher levels of maintenance, and it is an inflexible system, unable to adapt to modernization. And it really is like a giant, a Goliath that cannot be compartmentalized and handled in the small scale, for this entire system of irrigation and drainage, flood control, energy production, drinking water, purification, waste water: all of it flows from and into the same pool. One literally comes into more polluted water as one flows downstream. Energy production is furthermore causing the salination of the water along the coast. One is led to conclude that eventually, an non-integrated approach to national development initiatives, and the overall issue of water management will start to create incidents of collapse of either/both systems, and this is already resonating on a global level, as the international community has already multiplied its presence in the region.
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HA LONG BAY

WORLD HERITAGE SITE UNDER PRESSURE
You Haven’t Seen Vietnam if you Haven’t Seen Ha Long Bay
Structural Difficulties of the Tourism Industry
The Ha Long Bay Label: Protection, Pollution and Hype

EXPANDING THE COASTLINE
Natural Borders
Evolution of the Coastline
Construction of New Land

THE PUZZLE OF HA LONG
“The Lay of the Land”
Eastern Peninsula, Hong Gai Core Extension
Western Peninsula, Bai Chay Marina Extension
Island Extravaganza, a New Scale for the Region

SHIFTING OF MATERIALS
Red Soil: Flattening the Landscape
Limestone: Quarrying for the Construction Industry
Coal: Carved out Landscapes
This is Mining Country, the Other Side of the Ha Long Coin

LANDSCAPE MIRRORING A DYNAMIC SOCIETY
Abandoning the First Sector?
From S to XL
The Prolific Phenomenon of Grabbing Land

A FRAGILE BALANCE
WORLD HERITAGE SITE UNDER PRESSURE

Ha Long Bay is a coastal region in the Gulf of Tonkin. The bay area is famous for nearly 2,000 picturesque karst hills emerging from the sea. “Ha Long” is a sino-vietnamese expression for “descending dragon.” According to legend, the landscape was created by a family of dragons which spat out jewels and jade that turned into islands and islets. The goal was to form a barrier to protect Vietnamese people against invaders. According to science, the karst formations are a result of geological and chemical processes over millions of years. In 1994 the bay area was listed as a UNESCO World Heritage Site (WHS). Since then, the number of visiting tourists has increased. The center of the development that has followed concentrates in Ha Long City, where tourism is not the only economical basis.
You Haven’t Seen Vietnam if you Haven’t Seen Ha Long Bay

Ha Long Bay is Vietnam’s most famous tourist destination. In 2010, about 2 million tourists arrived there. The major attraction is to take a boat tour around the bay through the karst hill formations. The bay area itself offers a lot of activities such as cave visiting, kayak renting provided by inhabitants of the floating villages, or simply taking a swim in the ocean.

Increasing Visitor Numbers

In 2010, 2 million international tourists came to visit Ha Long Bay. The comparison of tourist numbers today and shortly after Doi Moi reforms shows the immense increase of attention that the site gained after the country opened itself up to foreign exchange.

What Does a Tourist Do in Vietnam?

Touristic offers which Vietnam tries to place on the international market vary in type. There are, on the one hand, classical beach tourism sites along the long coastline, such as Danang. Inland, a lot of national parks have been established since 1986, that are now integrated together with strategies of adventure tourism. Additionally, there are a lot of cultural and historic sites, which are not only concentrated in the two Deltas of Mekong and Red River but also distributed across the connecting axis along the coastline.

Site of National Identification

"Indochine," a French film from 1992 tells the story of a French plantation owner in the colonial 1930s, and of her adopted Vietnamese daughter, within the backdrop of the rising Vietnamese nationalist movement.
Structural Difficulties of the Tourism Industry
Despite the natural appeal of the site, statistics tell us that most tourists never visit Ha Long Bay more than once. There are a lot of complaints regarding overcrowding and pollution of the area. Indeed, there are several hundred boats cruising the site at the same time.

Security Issues
In recent accidents on boat tours in February 2011, there were fatalities of both local and foreign tourists, resulting from poor personnel training and lax coastal security.

Overcrowded Tourist Hub
Tourist groups are conveyed from the tour busses through a single hub onto the sightseeing boats. Many tourists complain about the unexpected mass of other visitors, as this is the only infrastructure intended for the transfer.

Catching up with Thailand?
Despite all intentions to establish tourism as an industry that contributes to the whole economic growth of the country, Vietnam was not yet able to catch up with big tourism destinations such as Thailand, which enjoys multiple return tourism from international tourists. However, the industry is still relatively new and slow to develop.
**Scant Offers on the Mainland**

The mainland and Ha Long city offer few touristic attractions. Most western tourists only see the harbour and go on a boat trip directly. Among Chinese tourists, Ha Long City is known for casinos, massages and a hidden red light district.

**Missing High Price Segment**

The tourism top price segment is almost completely missing in Ha Long Bay. Among the potential clientele from Russia or the Arabic states, Ha Long is not yet a known destination, one reason being poor marketing, another one a bad reputation regarding service quality and security.

**Small Revenues per Visit**

Despite the great numbers of visitors, actual revenues generated by tourism are relatively low in the Quang Ninh province (the cities of Hanoi and Ho Chi Minh fare far better in this respect).

**1000 Small Companies or One Big One?**

From the bus company that brings the groups to Ha Long, the boat company, the canoe renting station in the bay, to the souvenir and beverage vendors: tourist services are mostly in the hands of small companies. Many of them are family owned or one man enterprises. All these actors are connected in an extremely flexible network. Tourists, who are booking different tours might end up on the same boat in Ha Long after being brought there in several different buses.

**One Dimensional Tourist Routine**

Most tourists who come to Ha Long Bay book standard tours in groups. "Westerner" groups usually stay on the boats in the bay for the night. Consequently, tourists in Bay Chai are mostly Chinese and other Asians, who stay in Bay Chai overnight, to start their boat tour in the early morning.
Separated Tourism World
Tourism and the traditional city appear as two separated phenomena. Big parts of the urban development and all tourism influenced areas are situated inside the buffer zone of the UNESCO World Heritage Site. This buffer zone is designated to shield the protected WHS. Preservation of the WHS and the buffer zone are obligations of the Ha Long Bay Management Department.

Bay Chai Beach Occupation
All tourism infrastructure is concentrated on the southern beach area of the Bai Chay peninsula. Behind the little attractive beach, a hotel silhouette rises.
Protection Limited to the Bay Area

Conservation targets are officially set very high from the national government, and a special management authority is responsible for the protection of the WHS. Although, in the battle of conflicting interests between economic growth and conservation of nature, its power is very limited. Furthermore, its perimeter is the WHS itself and its buffer zone, while most important developments lie outside of this area. A new regulation dictates that all tourist boats have to be painted white in order to unify their look. As the colorful boats were great photo subjects in the past, this rule seems ridiculous and shows the limited action radius of the protection authority.

Threats Located on the Mainland

Away from the tourist sites, industries, such as coal mining, are the motors for the economic growth of the region. Through groundwater pollution and poor regulation, these industries are serious threats for the rich ecosystem of the heritage landscape.

The Ha Long Bay Label: Protection, Pollution and Hype

The protected area of Ha Long Bay has the size of 1,550 km² and includes over 2,000 limestone islands. The bay does not only offer a picturesque karst hill landscape but also has a diversified ecosystem. Industrial pollution and rapid development endanger this rich natural base. There is a antagonism between the protected bay and the unprotected hinterland, where the threats originate. The UNESCO label, meant to protect is at the same time a driver for tourism and the general development of the region, thus sharpening the conflicts.

The UNESCO Threat Chart

All developments in the surrounding region of the World Heritage Site are monitored by UNESCO in order to maintain its intrinsic value. If enough transformation incurs, altering the character of the bay, then the label can be withdrawn. The protocols of the yearly congresses on the condition of the WHSs show many complaints about pollution and industrial development in Ha Long. On a threat chart from 0 to 100, Ha Long Bay stands at a risk of 65.
Label as Money Machine
The intentions behind labelling are very different from one stakeholder to the next. While the UNESCO aims to protect a natural heritage, local authorities and developers use the label as a tourism motor to carry the name of Ha Long Bay out into the international tourism market. In 2012, Ha Long Bay was officially confirmed as one of the New Seven Wonders of Nature. The public election took place over the internet and via social media. This label is independent from UNESCO. Critics regard it as purely commercial. The election process was accompanied by massive publicity work from the respective governments.

And the Hype it Creates: Little Dubai
The hype created around the UNESCO label seems to legitimate speculative developments in land reclamation and construction. An artificial island is planned to be built in the next years in the bay (expanding an existing island into a living on the water extravaganza). It is supposed to become a spectacular tourist and second home resort. The financial plan of the project is yet very uncertain (and very intransparent).

Squeezing the Added Value Lemon
The UNESCO designation has clearly become a major association with the region. Not only for touristic developments, but also in the real estate market, and even in the industry sector, the label is used and instrumentalized as marketing tool, thus becoming a driver for the whole region. In the case of tourism, the label disguises the fact that tourist revenues are actually relatively thin.
EXPANDING THE COASTLINE

Arriving at Ha Long Bay mainland one immediately recognizes vast, flat, and mostly empty areas. Land that does not seem to belong there, land that is structured by a street system including street lights but land with very few buildings including single villas, modernized tube house typologies, detached high rise hotels and right next to them small tents and shelters with temporal uses and users. The following chapter deals with such phenomena and describes forces that might be behind them.
The Battle of Land and Sea

In an old Vietnamese fairy tale, the ghost of the mountains, Son Tinh, and the ghost of the sea, Thuy Tinh, both fight for the love of the beautiful daughter of the king. The rainy seasons with the monsoons are thought to be reverberations of this ancient battle. Linked to the myth, the sea was often regarded as a threat in Vietnamese history. For people living on the coast of this thin and elongated country, it was common to extend the land into the sea in order to protect property from flooding, and to enlarge the area for agricultural production.

Natural Borders

An old topographical map of Ha Long City shows the extreme conditions of this very hilly landscape reaching up from the sea, leaving only a few areas that are flat enough to be urbanized without big effort. Geomorphologically, this landscape was formed by the same forces that created the now treasured Ha Long Bay islets. With a population that doubled since the Doi Moi Reform in 1986, the growth of Ha Long city very quickly encountered these natural boundaries.
A Growing City
The population in Ha Long City experienced massive growth since 1990 and reaching 216,000 people in 2009 (and still growing).

<table>
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<tr>
<th>Year</th>
<th>Inhabitants</th>
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<tr>
<td>1979</td>
<td>115,000</td>
</tr>
<tr>
<td>2009</td>
<td>216,000</td>
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</tbody>
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Limited Land Use Possibilities
According to land use statistics, 5.5% of the total area is unused (this usually proves to be protected or unbuildable land, statistics being an imperfect science).

Modifying Natural Borders Today
In order to extend the buildable ground across the natural boundaries, vast areas along the coastline are being filled in, or filled up. While small self-made land extensions have a long standing tradition, these land fillings are on an entirely different scale, and are a relatively new.
Evolution of the Coastline
The comparison of satellite images from different dates shows the modification of Ha Long City's coastline over the last 20 years. There are very few spots where the waterside remained unchanged during this time. Different sites where new land was created show very different shapes that already start to indicate current and future land use.
Formal and Informal Land Filling

The satellite image of former coastal settlements shows how single houses reached deep into the sea. This phenomenon of self-made land filling is described by several locals as an old habit. It recently gained more importance as the inhabitants came to know about the formal large scale reclamations. Here, small lagoons have been shaped in order to bring the sea inside the holiday area, making it accessible and creating a holiday atmosphere.

Residential Promenade Front
Near the existing city center, land filling mostly occurs in order to gain new residential areas. The shape of the respective land is on the one side characterized by a very irregular natural edge where the old and the new land are interwoven and on the other it shows a very clear border to the water, which is accompanied by a big promenade.

Holiday Lagoons
In the south of the city where one has a great view over the sea and the karst hill formations, land has mainly been gained in order to develop huge touristic resorts. Here, small lagoons have been shaped in order to bring the sea inside the holiday area, making it accessible and creating a holiday atmosphere.

Exchange Platform
At the coast to Ha Long City’s lagoon lies Cai lan, one of Vietnam’s biggest deep water ports. To the north the port is linked to an industrial zone which is partly built on filled up land and which will be extended further into the sea. Industrial zones, especially the port, share a clear edge with the water in order to optimize exchange with ships.

Controlled Water System
Northwards from Ha Long City a huge area of former wetlands and farmlands has been transformed into a controlled water system, partly used for shrimp farming, a relatively new industrialized kind of large scale aquaculture. The system is separated from the sea by a huge dam and again divided into several large basins of which some have been subdivided into mostly square plots for shrimp production.

Holiday Lagoons

Formal and Informal Land Filling

The satellite image of former coastal settlements shows how single houses reached deep into the sea. This phenomenon of self-made land filling is described by several locals as an old habit. It recently gained more importance as the inhabitants came to know about the formal large scale reclamations. They suddenly started again extending their plots as if they wanted to participate in the real estate boom that is expected after the land filling.
Mangrove Forests in Distress

Around 1/4 of the world’s mangroves lie in Southeast Asia. They form natural barriers against soil erosion on coastlines, as against storms, and are a fecund ecology for fish species. Due to the proliferation of large scale shrimp farming, they are now threatened by extinction, which is ironic considering their role as natural carbon repositories which make them valuable assets to counter climate change.

Informal Coal Sifting

Ha Long Bay is “Coal Land.” As the following chapter will show, industries and processes are interconnected, and materials in the region shift from one place, where they are no longer needed, to another, where they become useful building material. Coal residues that in this way end up being used for land filling, even though at this point all the ore is highly diluted, are collected by farmers and scavengers manually in order to be resold.

Squatting Businesses

A small craftsmen company installs a production facility on newly reclaimed land, since this doesn’t really bother anyone, and since for the moment the land has no designation, squatting is tolerated.

Workers Lodgings

As we have observed in construction projects in Hanoi, migrational unskilled workers arrive at construction sites, live on the site itself during the duration of the job at minimal expense, and then return home afterwards. On this reclamationsite, the workers were living in small tents, working 8 hour shifts, 7 days a week.

Construction of New Land

There are many different ways to construct artificial land mass, each of them depending on conditions of the ground below. Sometimes, land reclamation is at great ecological expense, i.e. when mangrove forest are “buried” with sand to create buildable land. For the most part, fresh land needs to “settle” and become robust, requiring a delay of at least 10 yrs before any profit can be made on it. In the meanwhile, there are many in-between uses and occupations of this empty land. In the following pages, we will try to illustrate the entire process of land reclamation, it’s technology, and what it leaves on the ground during different phases.
Work flow / day for 1 engine

Thickening the Sand Mass
Before new virgin land is ready to be built upon, it has to be densified in order to strengthen the ground enough for the weight of construction. The process involves the insertion of hollow steel hollow pylons about 16 m deep into the ground. Then workers fill up the pylon with sand fortifying the land mass.

Filling in a Dense Grid
This plan shows the distribution of necessary sand infills via the pylon system on a site along the coastline west of Hong Gai. The grid is denser where the future street will be built, already prescribing the urban pattern to follow.
THE PUZZLE OF HA LONG

Ha Long City reveals itself to be made up of different looking monocultures (functionally speaking), all added onto the existing city at separate times, in playful, seemingly random manner. The older center, named Hon Gai, formulates a dense patchwork, the pieces adding onto it start to become less dense, and show different levels of development. This gradient can clearly be discerned from the center radially outwards: the farther away, the more ‘loose’ the land becomes, and the “younger” it is, i.e. marked by vast plots of empty, awaiting a future less idle. But it is important to stress the monoculturality of these newer developments, for one can also trace in a radial outwards trajectory, a simplification of forms, which is related to the character of the large scale functions predominantly being developed (i.e. tied to aquaculture, or to the uses of the port/industry, but also tourist or second home type monocultures offering their idyllic repetitive luxuries). Such sites are highly speculative, assuming a scale entirely foreign to the human presence that is preexisting.
“The Lay of the Land”
Built areas are mainly concentrated on the two peninsulas of Hong Gai and Bai Chay. Sudden changes in street structure denote that one has moved into another quarter, built at another time, so easily readable is the story of the city. Not only in remote parts, but already around the core zone of Hon Gai, extensions with rigid geometric layouts are continuing on more organic logics that emerged from a relation to the topography. By shear density of public functions, one concludes Hong Gai to be the principle center of the overall settlement.

Hong Gai Market
(1) The dense and vibrant center of Hong Gai is the social center of Ha Long City. Shops and food offers to be found in any shape and form: on the street, at markets, as well as in plenty of stores and restaurants. The area around the market hall is characterized by neocolonial architecture and ground floor shops.

Central Business District
(2) Hong Gai clearly houses the CBD, the administrative institutions, and related content, i.e. business hotels and commerce. This is a clear counter balance to the opposing Bai Chay, which is specialized for tourist visitation and holds little else.

The Old Quarter
(3) This organically formed part of the city is also not undergoing any current transformations, one to two storey buildings are creating the neighborhood character in the narrow winding streets, and no discernible gentrification is under way (perhaps because HLC residents have discovered how to make land in abundance out of the sea).

Clearly Discernible Borders
(4) It is very easy to read the city while walking around. One is easily impressed with the simplicity of the logic, and the way that the different seams come together without creating tension.
Hills - (forest and villa projects)
Support City (very local, small scale, some hotels)
Hotel Belt (big and loud, mostly international hotels)
Entertainment Strip (clubs and restaurants)
Coastline (little presence of infrastructure)

Bai Chay Cross Section
As the old town of Bai Chay was oriented towards the eastern coast, the southern one was free for later occupation by an expanding city, and represents one of the earliest rapid expansions in Ha Long. The topography asserted constraints which called for a very simple linear logic of development, and the entire settlement can be read using a cross section.

Privatized Public Space
(3) A thin “entertainment strip” stretches along the coast. The biggest part of this area belongs to one private company with a Taiwanese background called “Royal.” This company subleases single buildings to different subletters, who locate in them restaurants, bars and clubs, at a remarkable mark up compared to the old city. The area is kept clean and has more public facilities at disposal, including toilets and trash collection points. Initially, the entire strip was gated, however nowadays it is open, although they are prescribed rules of conduct. The architecture is homogenous, but with a simplicity that allows flexibility of the individual functions.

Artificial Beach
(4) The beach itself is unnatural and constantly eroding, requiring constant reconstruction. Initially the coast was marked by a rough layer of vegetation, but has been cleared, reclaimed, and a commercial beach has been installed.

Behind the Scenes
(1) Local life is concentrated in the Bai Chay center. Within this dense, small-scaled structure, an accumulation of street shops and other informal programs is found. This quarter stretches along the hill in the southeast of the archipelago. It spreads westwards behind the hotel complexes, along the second road parallel to the coastline, which one can assume used to be the main road at a time when still forest and wetlands bordered the coast. In the area behind the high rise hotels, the residential buildings mix with small tourism infrastructure, such as cheaper hotels and coffee shops. Also, a hidden red light district and massage saloons are found here.

The Hotel Belt
(2) Moving away from the beach road one reaches the tourist marina. Towards the steep of the hillside, a belt of big and mostly international hotel complexes has sprouted, to which people arrive by car or mini-van. Consequently, there few public programmes along the street and despite the careful arrangement of the coastal promenade, it is completely desolate at night.
Hill Carving Operations
The masterplan of a planned villa development project atop of Bai Chay conforms to the steep topography, but will nevertheless involve a lot of land transformation and carving, before houses are built.

"Foothills" of Ha Long, Villa Heaven
High above the other city parts, in the forest covered hills, new villas are constructed on exclusive spots, carved into the difficult topography - with a stunning view over Ha Long Bay.
Eastern Peninsula, Hong Gai Core Extension

Hon Gai’s growth inland, because it was limited by steep topography, developed in a small scale and organic fashion, conforming to physical constraints, the growth into the sea contrasts sharply with a vastness of scale, a block size increase, and a legible geometric subdivision of infrastructure.

The Side of the Mountain

The bridge connecting the two peninsulas, constructed with the help of Japanese investment, is a highly elevated, elegant structure that cuts into the side of the mountain on the Bai Chay side. Small organic housing has filled in parts of the surrounding slope.
Already in 2001, some of Hon Gai’s quarters had been built on reclaimed land. In the time from 2001 to 2010, the former bay was almost completely filled up and new urban quarters were developed. In the quarters farther away from the central axis, there is still a lot of unbuilt space and land filling works are ongoing, building up the puzzle further.

Building, No Building, Building...

The extension in Hon Gai is an interplay between empty and built upon plots. While all plots are said to be sold, many of them remain unused, creating a vast landscape of scattered row-houses, whose blind side facades eagerly announce a future street character, but one which for the moment looks rather misplaced, as the eye perceives a groupation of free standing villas.

Gardens

Many empty spaces between buildings are occupied by inhabitants who use their neighboring plots as vegetable gardens. In other cases, the gaps are overgrown with weeds, which is still better visually than barren sandy surfaces of freshly reclaimed land.

California Dreaming

A wide avenue runs through the new quarter, where four lanes of traffic are bordered by palms, with houses behind. Plots deeper inward are designated to be row housing, but the set facing the avenue is composed of free standing villas, as can be expected with their intrinsic street-side value. The villa typology denotes a somber street character, privatized and gated, quite removed from the usual clutter of commerce spilling out from the ground floors of the typical shop houses. The sidewalk is mostly empty, as is to be expected from a lower density of settlement.

Ad Hoc Program

A variety of temporary activity is to be found between the gaps of built structure. Small enterprises burn bricks, prefabricate concrete pillars or meld armatures.

Piece by Piece

2001

2010

VII/608

VII/609
Public Private Partnership
Most land extensions are developed in a cooperation model between the government (usually the district government) and an investor. Some of these companies are again closely connected to the state, as in the example of Cienco 5, that is developing the Hong Gai extension. This former state owned company grew due to the national reconstruction works following the Vietnamese American war.

Masterplan, Then Distribution
A masterplan first defines the programs of the plots as well as basic typologies even before the land is reclaimed. As the construction of the buildings is done by individuals after plots are sold and not by one developer, these new quarters possess diversity.

Vast Land, Traditional Logics
Street blocks are separated into two rows of narrow plots, which allow for the house to fill up almost 100% of the allocated area, leaving only a tiny backyard for ventilation. Each plot is 4 m in width, with daylight penetrating only from these narrow edges of the plot/building. This typology is present in the entire country, and it clearly is a matter of choice to offer more of it, since, with new virgin land, one could just as easily opt for a different type, as the physical constraints have been eliminated. It is far more likely that the tube house model offers a perfect balance between space and affordability for the average Vietnamese citizen. Companies reclaiming land, on the other hand, still see it profitable to enter the market offering more of the same.
Western Peninsula, Bai Chay Marina Extension
One can really observe land transformation processes when one explores the Bai Chay Marina extension projects. The above google map image shows a satellite shot of the area in 2010, whereas at the time of this research most of the “grid” has been completely converted to land, and is slowly emerging with development. Most recently though, this process has stopped, as investments have been put on hold due to the recent global economic climate which is starting to affect the area.

Seemingly Abandoned Infrastructure
Once land is reclaimed, some public works are developed, such as a road network, street lights, curbs, etc. Since this is done beforehand, and since developed has been experienced a slowdown, vast areas in this part of the city look as if they have been abandoned.

Not yet City
Right adjacent to the old village, a very loose and heterogeneous accumulation of buildings can be found. This city extension, however, is highly monofunctional, comprising only of hotels (and accompanying services, but not many) and free standing villas. Plots are still empty, and the entire area is one of the least dense morphologies in Ha Long.

Makeshift Occupations
Also here we observe territorial occupations of the still under used roads and plots with informal activity. Coffee shops can be found occupying such voids, which are closer to the old settlement, or on a prominent spot.

Waiting for Neighbors to Move in
A couple of buildings have been built in the last several months on one of the latest reclamations facing the “hotel strip,” on the waters edge. For the most part though, only the road network is complete.
Shopping Mall on Hold
Large scale commercial and public programs are planned for the Marina area, and although construction has begun on some, i.e. the mall visible on the image above, the sites are now idle as construction is experiencing a standstill.

City out of Scratch
To create a “new financial center” for the province is the vision of the project developer of the Marina, the BIM group. In addition to commerce, tourist and leisure activities are also foreseen.
Playing the Field

Although plots on new virgin land remain empty, most of them have already been sold. This means that the owners are buying "time," in waiting perhaps for more liberal land use laws, or waiting for development to start in the area so that they can capitalize on selling/developing during that time. In any case, land does not stay unowned for very long, but is "reserved."

Reduction of Density

Moving away from the traditional centers, onto new and reclaimed land, a decrease of density can be observed, as functions on new land occupy more space.

Direction of Spreading

Looking at the entire area at 1991, and comparing it to today, one can observe how the city initially spread, and where it is currently densifying (out of traditional centers).
Island Extravaganza, a New Scale for the Region

Facing the city in the south, west of the carst hill landscape, lies Tuan Chau, a small island currently being completely reconfigured into a resort with hotels, apartments, 2 marinas and business and commercial clusters. All sporting fascinating views into the bay (on a dry sunny day). The project is regarded as visionary, and is expected to stimulate development in the entire region.

The Fee for the Dream

Compared to real-estate in the rest of the country, the residential developments on Tuan Chau fall under extrapolated luxury, hardly affordable to most.

Uniformity

The masterplan of the island foresees several typical luxury housing offers: high rise hotels, villa houses, but also, and stemming from the traditional Vietnam tube house, a significant offer of row houses (of an elevated standard, of course). What is different, though, is that expression is not favored by the upper class. The idea of quality lies in a uniform image of luxury. Playful and unique details, as well as colors, are perceived as “common” and even “messy.” Very little apartments have been sold though.

A Shadow of a Thought

The current state of the island, and its extensions, doesn’t quite resemble the vision yet. Land is vacant, only a few finished constructions are visible, all around the southeast corner of the island (around the elongated rectangular marina). Critiques are coming in that the economic risk here is immense, the promoters are though working hard to promote the project, employing a phasing logic to the development, which rests on the economic success of each current phase, in order to finance the next.
An Island for a Billionaire
The whole island of Tuan Chau belongs to Mr. Thuyen, one of Vietnam’s few billionaires. He owns 14 companies and 34 factories all over the country in various economic branches. Among locals of Ha Long City, Mr. Thuyen is often referred to as “King of the Island.”

How to Become Owner of an Island, and Destroy an Ecology in the Process
Rumors that land lease rights to Tuan Chau were acquired by offering the service to build a connecting bridge to it from the mainland, are widespread. The bridge (more of a dam in actuality) had as a consequence cut off a significant part of coastal water current, exterminating in the process a rich mangrove grove along the coast. This is not as criminal as we suggest, for in this context all the land fill projects removed a layer of rich ecosystem (points where tidal water meets land tend to be a rich in-between zone for many flora and fauna species). All of these processes are for the moment tolerated, or ignored completely.

Waiting for Tuan Chau
Once finished, Tuan Chau is expected to attract huge numbers of tourists, second home owners and new residents. Murmurs that the investors “reserving” land on the mainland are waiting for the island to serve as an economic and touristic beacon are abundant. Most of the island lies in the UNESCO buffer zone, very close to the actual protected zone, putting a lot of scrutiny on this project.

A Big Sand Box
This project will distort and transfigure the entire island landscape when it is finished. Workers are taking earth from the island’s hills and making meandering lagoons. However, it seems very unlikely that all the material is from the island itself, as the planned surface will be three times the island’s original size. This raises the question of material origins for these large scale projects, a topic handled in the following chapter in full detail.
SHIFTING OF MATERIALS

Land reclamation projects and the industries of the area all utilize significant amounts of various materials, they get them from somewhere, and leave them somewhere. In fact, our investigation has lead us to conclude that the Ha Long economy actually lies in this movement of materials. We have thus far shown the region more as a puzzle of parts, but all of these parts connect to each other in unexpected ways, and are consequential of each other. Following the materials reveals these hidden connections, which leads to an understanding also of how actors are creating the territory of Ha Long Bay.
Various Origins and Destinations

There are many different sites around Ha Long City where materials are or have been removed for very different purposes. The map above gives an idea of how large the degree of removed landscape materials is, and how the size of removal areas is related to the size of land filling sites.

Material Sets

Ha Long Bay has a rich geological history, its coal mining industry is one of the more significant in the country.

Coal mines: mountain soil and rocks

Carst hill quarries: limestone

Surrounding hills: red soil

Sea: sand

Coal mines: black gold

Material exploit

Land filling

Various Origins and Destinations

There are many different sites around Ha Long City where materials are or have been removed for very different purposes. The map above gives an idea of how large the degree of removed landscape materials is, and how the size of removal areas is related to the size of land filling sites.
Red Soil: Flattening the Landscape

A very basic observation regarding material shifts not only in Ha Long but across nearly the whole Red River Delta is the cutting of the red soil hills. In Ha Long Bay soil is removed to gain construction land at first and then it will be displaced into the sea or wetlands, gaining land twice.

Settlements carved into Hills

Originally, all the hills in the bay had a cover of vegetation. Due to the lack of available construction land, a lot of hills have consequently been cut into, in order to flatten the land. The cuts have a typical reddish clay look. Of this, leftovers found use elsewhere.

Infrastructures Treatment of the Land

Bai Chay Bridge was finished in 2006 by Japanese engineers, it had to be high enough for cargo ships to cross under it into the port area in the northern lagoon. From this high point, it cuts into the hillside, descending down once more to connect to regional roads.
Limestone: Quarrying for the Construction Industry
The geological carst formations, cherished when they occur on the open seas (like in the UNESCO protected Ha Long landscape), are not viewed with such awe when found on land. On the contrary, they are viewed for their utility as land deposits, and are carved out in lots of places, and the material collected is transported towards the construction industries, who make use of them.

Scrambling the Icon
Such actions naturally put into the lime-light a contradiction in the land, and people visiting the bay for a short time are still sure to notice these cutting processes happening along the main roads that tourists use to come to the bay.
The ten employees working at the quarry in Dai Yen run the entire operation. A brick furnace is used to burn limestone. Main products are limestone, raw brick, and a number of different rocks.

Twice a year the government delivers explosives to blast a certain amount of rocks from the carst hills. Quarry men and women then crush them by hand and hammer. Some of the stones are sold without any further processing.
Industrial Production
Thang Long Cement is a Joint Stock Company which owns a cement plant in Quang Ninh province and a grinding station in Hiep Phuoc Industrial Park, Ho Chi Minh City. The most important shareholder is Geleximco, one of Vietnam’s first private multi-line industrial conglomerates. The factory itself was put in operation in 2008 and employs over 500 people of which 50% live in Ha Long City. Today, the factory has a production capacity of 6,000 t clinker cement / day, which is equivalent to 2.3 mil. t / year.

Cement Made in Ha Long
The factory in Quang Ninh consists of a quarry with a crusher on site. A conveyor belt connects the crusher to the factory, which is located in a gated production area. The plot includes space for administrators, and even workers living quarters. Finally, the factory owns a port facility located 8 km away from the quarry.

Supplying domestic Markets
When the factory took on work in 2008 there was a regulation that forbid export entirely. Due to the high inflation followed by changes in Vietnam’s economic situation the government agreed to an export rate of maximal 10%. Besides to China, Thang Long also exports to Africa, Bangladesh and India.

Direct Sea Connection
The most important transport way is through the waters of the bay. Finalized products are therefore carried to deep water, from where they are shipped. The port is also the arrival station for different kinds of secondary basic products, such as ashes purchased from the coal mining industry, which are used to strengthen the cement products.

Raw Material from the Backdrop
Right in the north of Ha Long City there is a ridge of carb hills. Thang Long Cement runs a quarry and a crusher where stone material from the hills is mixed with clay to get a homogenous compound. This then is transported to the factory. The conveyor capacity is the limiting factor of production which is why the factory plans to build a second belt in order to increase production.

China’s share of total exports | Other export countries
---|---
90% | 50%

Domestic purchasers | Exports
---|---
China’s share of total exports | Other export countries
‘Subtle’ Exploitation
Carst formations exploited by Thang Long Cement are only quarried from inside, entering the area from the northern side. Around the quarry a chain of hills remains and prevents the sight of the quarry’s dimensions from being visible from the bay 9 km away.
Open pit mining has been happening in the region since the arrival of the French. Most surface resources are therefore running thin, and a shift towards underground mining is taking place.

### Coal: Carved out Landscapes

The search for large shifts of material leads to the coal mining area in Hon Gai with its huge terraced craters. In order to make coal resources accessible and exploitable, massive landscape transformations are necessary, which produce a big amount of eroded material that needs to be displaced. An open pit coal mining operation changes the character of a landscape permanently.

### Shift to More Hidden Resources

Open pit mining has been happening in the region since the arrival of the French. Most surface resources are therefore running thin, and a shift towards underground mining is taking place.
Simple Tactics

Open pit mining in Hon Gai functions on rudimentary technology. Mechanization entails diggers to exploit, and trucks to transport the coal from the pits to the storage place from where it is delivered to further processing sites. Most of the land transformation that has to be underdone is in order to create access to the pits below.

Huge Land Occupation

Nearly 5.7% of the total area in Quang Ninh province is covered with coal mines. There are three major sites in the province, one of them lies in Hon Gai, Ha Long City.
Autopsy of an Open Coal Mine

Creating terraced hills is a multistep process. First, the top layer, usually organic and soft, needs to be excavated (1), after which the slopes are reshaped (2). The winding ramps then lead excavators to the pits, where they dig out coal (3) and load it onto trucks. Excavation in the pits also produces surplus materials which need to be displaced somewhere (4), this was earlier mandated to be in the coal site itself, however now its mostly displaced adjacent to it. This legislation perhaps followed the realization that unused loose land materials can be useful someplace else, i.e. in the case of land filling (5), so the law was amended.
This is Mining Country, the Other Side of the Ha Long Coin

Coal exploitation in Quang Ninh province first started around 1840, and endured ever since. No matter the political system, whether colonial or socialist, governing entities all understood the value of these resources for the economy of the region. Consequently, mining growth has developed a correlation to the growth of the city itself.

Quang Ninh’s share of national hard coal production

<table>
<thead>
<tr>
<th>Domestic energy production</th>
<th>Cement and fertilizer production</th>
<th>Export</th>
</tr>
</thead>
<tbody>
<tr>
<td>40%</td>
<td>25%</td>
<td>Japan, China</td>
</tr>
</tbody>
</table>

The Mining Province

Vietnam's hard coal production highly depends on the production in Quang Ninh.

Living Adjacent the Mines

On eastern entrance to the coal mining area, a family moved to open a shop. Their goods provide for the workers living inside the mines, and adjacent to them. It is usual for people who take mining jobs to move somewhere halfway between the city and the workplace, in order to be close enough to both.

Application of Coal

In 2008, coal production in Quang Ninh province reached 42 mil. t, most of it however is used in domestic electricity production.

Living Inside the Mines

A small group of workers, specialized in searching the grounds for high coal concentrations, live in tents right next to their working place. They come from other provinces and provide their service to different mines, so their work is by nature migrant, and they do not take up permanent residence in Ha Long City.
Closeness of Mining and Living

The specificity of Ha Long Bay mining lies in its proximity to the city. It almost seems that the city and its mining area are bonded together for the good and the bad.

Pull Factor

The settlement is developing along the roads that lead into the coal mining area, where workers gladly settle. The two seem to be approaching each other more and more.
Where Do People in Quang Ninh Work?
Over 50% of the people work as farmers, fishermen or foresters. 15.2% of all employees work in the mining industry. With 4.2% working in hotels or restaurants, it becomes obvious, that the tourism sector is not nearly as important as the province’s industries, as one might assume.

Sources of Income Reveal Importance
The coal mining industry takes over the majority share of the province’s GDP by generating 67% of the total income. The first sector only contributes with 6%. This stands in discrepancy to the number of workers in this sector. That begs the question what has happened to this sector.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Share of mining</th>
</tr>
</thead>
<tbody>
<tr>
<td>First sector</td>
<td>43.5%</td>
</tr>
<tr>
<td>Mining</td>
<td>15.2%</td>
</tr>
<tr>
<td>Commercial</td>
<td>11%</td>
</tr>
<tr>
<td>Services</td>
<td>10.2%</td>
</tr>
<tr>
<td>Industry</td>
<td>9%</td>
</tr>
<tr>
<td>Gastronomy</td>
<td>4.2%</td>
</tr>
<tr>
<td>Construction</td>
<td>3.7%</td>
</tr>
<tr>
<td>Logistics</td>
<td>3.2%</td>
</tr>
</tbody>
</table>

Where Else Does the Money Go?
The proximity to the bay sparks unpredictable correlations, as this hotel was for instance built using coal money, as a hobby investment of its owner, who is a large holder of a mining area in Quang Ninh. This would explain why these constructions don’t seem to really pay attention to any economic supply and demand logic, remaining empty for most of the year.

Strong Dependence on China
In 2011 71.5% of the total exports went to China.

The Greatest Export Product
In 2011, coal exports made 42.5% of the total exports from Quang Ninh.

Strong Dependence on China
In 2011 71.5% of the total exports went to China.

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Strong Dependence on China
In 2011 71.5% of the total exports went to China.
LANDSCAPE MIRRORING A DYNAMIC SOCIETY

Ever since the Doi Moi reforms of 1986, there has been a big shift in the size of executed projects. Suddenly it is no longer the single small plot that is developed individually by its owner, but giant plots planned as a whole. One could speak of a jump from the small scale to the XL scale, as there seems to be a lack of anything in between, a lack of actors being able to operate on the medium in-between, i.e. a lack of an aspiring middle class. What is more observable is a handful of individuals suddenly becoming spectacularly wealthy, and entering without much economic experience into real estate and land transformation. Observing changes in the land, one is able to talk about changes in society.
New Jobs in the City

Many farmers move their livelihood activity more and more to the city center. A common way is to buy a motorcycle with the compensation money of selling their plots, and to become a Xe Om (motorcycle taxi). No license is required and no taxes are collected for this rather informal job.

Abandoning the First Sector?

Even though there is apparent low demand for such vast speculative development around the Bai Chai Marina, agriculture is nevertheless suppressed. Furthermore, rich fisheries are also lost, and these were former livelihoods of many in the region. One off compensation for buying the land rights is usually highly generous, but the fact remains that someone’s livelihood has been completely eliminated, and once the initial money runs out, self-sufficiency becomes a problem. It looks like many people are still hoping for many returns to the city from these developments, also in the way of work, entailing a complete restructuring of the population based on work.

Oyster Collecting

This man kept on his job of collecting oysters, even though being cut-off from the sea by a land filling development. His average income of 5 mil. VND / month (a bit over 200 $) is relatively above median. There seems to be no big competition to his business, so he is happy to fill in the niche.

Distancing the Coast

Farmers or fishermen that own plots on a future development site are seduced by the compensation to sell. As there are said to be plenty of well-paid jobs in the industry or in the service sector, only few locals are willing to stick in the first sector afterwards.

New Jobs in the City

Many farmers move their livelihood activity more and more to the city center. A common way is to buy a motorcycle with the compensation money of selling their plots, and to become a Xe Om (motorcycle taxi). No license is required and no taxes are collected for this rather informal job.
From S to XL
At the northern coast of the Ha Long lagoon, huge aquaculture plots for shrimp farming have been built. The whole site is said to have been bought and developed by only four different investors. Most parts are not operational and are abandoned (perhaps waiting for sufficient investment). The new giant structure contrasts with the surrounding left-over farmland and small-scale aquaculture plots built by individuals. There is no middle scale. One can really talk of an economic boom, as the land seems to have violently erupted from a small consolidated pattern, to an over-sized industrial landscape (minus the healthy economic activity though). Interestingly, similar shifts can be observed in the field of tourism. While small family companies are still the dominating actors, a whole island is controlled by one single owner (also not exhibiting healthy economic indicators, but an eerie silence).

A Family Business
Traditional oyster collection is a simple craft, placing sticks with shells into the shallow water and waiting for the oysters to enter them. The area was occupied in a loose and flexible system, a "first come, first serve" principle.

The Silence in the Landscape
A combination of lack of skill plus capacity, and lack of economic incentive keeps industrial shrimp production at a minimum.

Patchwork Landscape
Industrial and self-made aquaculture, land filled for industrial development, agriculture land and loose village structures form a fragmented landscape, a fascinating embroidery.
The Prolific Phenomenon of Grabbing Land

The thus far observed economic silence of large land plots that have been turned into shrimp farms, could have an alternative concealed logic to its proliferation. Namely, such a grand move could be an elegant way to once more “reserve” land, while waiting for a more opportune future circumstance, where perhaps land use shifts, or other neighboring developments make the location more profitable. Much like has been described in other parts of this book, the ownership and land use legislation seem to be inspiring a series of development “tactics,” that are gearing towards quite invisible goals, and what is happening on the ground momentarily is only an in-between product. Unfortunately, as recent activities are already showing, this speculation has in most areas overestimated itself, and the development in all of North Vietnam is in reality much lagging behind Korea or China, or even the Mekong in the South.
A FRAGILE BALANCE

A complex network of different actors is involved in the territorial transformation processes of the Ha Long Bay area, and we have now illustrated many different faces that this region has. All processes are tied to a battle for land, resources, and water (whether it's something to look at, or entirely functional). While obvious conflicts have arisen (most obvious among them the paradox of the heavy industry and the natural paradise), these processes, surprisingly, and for the moment, coexist and sometimes even benefit from each other. On the other hand, there is a strong dependency on limited resources like coal, limestone, and the nature itself, and on unpredictable drivers such as foreign trade. And because of the strong interdependencies, difficulties could be cumulative and have a negative domino effect on the region. It seems as if the recent economic and urban growth has masked inherent structural problems. As growth is based on a veritable hype, the region finds itself in a fragile balance, and since Ha Long Bay has proved to be an extreme case study in this research, entailing very visible processes with which social changes can be tracked, an extrapolation could be made from this concluding chapter with regards to the entire nation.
Topography of Power

Large areas are controlled as single units by single investors, up to a certain stage of development. The owner could be a state owned, joint stock, or entirely private enterprise (or individual!). All of these developments fall just outside of the jurisdiction of the power player UNESCO. The buffer zone catches some areas, however legislation here is lighter, if exerting any influence on decisions, as we have seen with the ultimate redrawing of Tuan Chau Island.

Or is it All State Related?

Even with this elaborate topography, one thing seems pretty certain, the state’s reach is far indeed. Reforms towards market led economy have created many changes in the country, however, the government is reluctant to relinquish control over the market, and it is involved in most transactions and decisions, be it as a joint stock company, or by regulations for the private actors, and the rights for land use for those private operations.
Contested Coastline

The coastal area is a space where interests and conflicts are concentrated. Ha Long Bay is not only the most important asset for Vietnamese tourism, but also a key link in the complex socioeconomic chain of the region.
Local Dependencies

In Ha Long Bay there exist a dense web of dependencies. Especially the different industries cultivate intimate business contact with each other, and with the deep water port whose efficiency makes industrial investment attractive. Furthermore, suspicions are raised that the money from coal mining flows at least partly to the tourism sector. There are not only supporting relationships between the different phenomena but also a lot of opposing and threatening links. First, the ongoing repression of the first sector which looses more and more land for industrial and residential development, and second the tourism industry which suffers from continued pollution in the region.

The Limits to Growth

Activity currently happening in the bay is not marked by permanence. On the contrary, so many of the processes described in this chapter will be history in half a century or less, and still others fluctuate with global trends and will probably even quicker adapt to new circumstance, as dictated by the free market, or by Chinese economy, which has a lot of impact on the region. One is left to wonder how much capacity for adaptability this territory has (and perhaps Vietnam on the whole).
Ha Long has for most of its settled history been a small and unimportant coastal city at the border to China. This condition changed radically within the last twenty years, first and foremost because of the nationwide economic reform Doi Moi in the mid 1980s, which brought a general opening also for tourism and provoked remarkable investment along the coasts. Almost 4 million tourists visited the country only in 2009. Furthermore, this condition exasperated when the Bay with its 2000 geologically unique islets were listed under UNESCO as natural heritage. These altered circumstances led to a massive boom in the Ha Long region, which still lasts today. The study succeeded first in isolating and analyzing the different layers of that boom, especially the operating mode of the tourism economy, the building industry, the land reclamation and the coal mining. The work could demonstrate, how the different economies are linked to each other and how they lead to extremely speculative tendencies in reciprocal actions. As a matter of fact a majority of the developments is based on a distinct anticipation for the projected future. Especially the land reclamation, which is linked to the hope for further touristic development and is directly linked to the mining (dug material is used for reclamation), represents a broad intervention which is occurring at a great pace, with no base in actual demand for it. This blind belief in a prosperous future is symptomatic for contemporary Vietnam.
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