SIEM REAP

Urban Development in the Shadow of Angkor

Briefing document for the
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Adèle ESPOSITO
Observatoire de Siem Reap Angkor,
IPRAUS, Paris

Sylvia NAM
University of California, Berkeley

Editors

The Getty Conservation Institute

APSARA Authority

Pacific Rim Council on Urban Development

Center for Khmer Studies
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Adèle Esposito and Sylvia Nam

The Getty Conservation Institute works internationally to advance conservation practice in the visual arts – broadly interpreted to include objects, collections, architecture, and sites. The GCI serves the conservation community through scientific research, education and training, model field projects, and the dissemination of the results of both its own work and the work of others in the field. In all its endeavors, the GCI focuses on the creation and delivery of knowledge that will benefit the professionals and organizations responsible for the conservation of the world’s cultural heritage.
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AUTHORS:

Adèle Esposito is a doctoral candidate at École doctorale Ville et Environnement of the École Nationale des Ponts et Chaussées and University of Paris VIII. Her dissertation project, Siem Reap – Invention et constitution d’un lieu de tourisme aux portes d’Angkor, deals with the urban development and transformation of Siem Reap linked to tourism to Angkor. She is involved with IPRAUS, the Paris Research Institute of architecture, urbanism, society of the École nationale supérieure d’Architecture de Paris-Belleville and Paris X Nanterre University, Department of UMR A.U.S. n°7136 C.N.R.S (National Center for Scientific Research). It is in this framework that she has taken part in the creation of Observatory of Siem Reap Angkor, Architecture, Heritage, Development; a project of the same laboratory.

Sylvia Nam is a doctoral candidate in the Department of City and Regional Planning at the University of California, Berkeley. She is currently conducting fieldwork for her dissertation project, Speculative Urbanism: the Remaking of Phnom Penh, with support from the Fulbright IIE and the Center for Khmer Studies Dissertation Research Fellowship. Her research interests include urban theory, international development, and gender and work.

AUTHORS’ NOTES ON METHODS:
The content contained herein is based on extensive review of the literatures, both policy and academic, related to urban development in Siem Reap. Supplementary information comes from primary interviews with consultants, investors and government officials conducted for the purposes of this report or fieldwork conducted in relation to the authors’ respective research projects. An extensive bibliography can be found at the end of this report.

COLLABORATING AGENCIES:
The Pacific Rim Council on Urban Development is a trans-pacific network of scholars and professionals who share a common commitment towards inclusive, inter-disciplinary and goal-oriented collaboration. PRCUD is a U.S.-registered non-profit organization. Since its creation in 1989, it has developed a unique model of interaction and partnership through the organization of annual or biannual roundtable forums. These events are usually organized in direct partnership with an Asia Pacific host city, which requests the kind of independent, multi-faceted, experience-sharing policy recommendations that PRCUD can provide. Major cities that have benefited from expertise provided by PRCUD include metropolises like Jakarta and Singapore, as well as medium-size cities like Melacca and Palembang. Over the years, PRCUD forum participants have developed into a cohesive community of problem solvers who, in addition to their own work, generously spend a week working together on issues given to them by the host city. One of PRCUD’s unique strengths is the diversity of its members, both in expertise and in national and area backgrounds. The PRCUD partnership model intentionally avoids the kind of unilateral top-down models often seen in international collaborations.

APSARA, created by Royal Decree in 1995, is the principal authority with oversight and management of the Angkor World Heritage site. Its authority was reinforced per a second Royal Decree in January 1999. The Council of Ministers provides technical and the Ministry of Economy and Finance financial supervision to the Authority. All of APSARA is under the leadership of the Director General with the assistance of
several Deputy Director Generals. In collaboration with other governmental agencies, the authority is responsible for:

1) The protection and enhancement of the culture, environment, and history of the Angkor region.
2) The master plan on tourist development according to the five defined zones of protection and management of Siem Reap-Angkor.
3) Supporting the poverty reduction efforts of the Royal Government.
4) Cooperating with the Council for the Development of Cambodia on investments and projects related to the mission of APSARA Authority.
5) Working with ministries, funders, and governmental and non-governmental organizations on all projects related to its mission.

The territorial authority of APSARA is specified in Article 5 of the Law on the Protection of Cultural Heritage promulgated in 1996. Backed by these legal tools, APSARA represents the Royal Government before all international partners concerned with cultural, urban and tourism development in the region. The Authority thus presides over the Cambodian delegation to the International Coordinating Committee for the Safeguarding and Development of the Historic Site of Angkor (ICC) as well as its Technical Committee.

The Getty Conservation Institute works internationally to advance conservation practice in the visual arts – broadly interpreted to include objects, collections, architecture, and sites. The Institute serves the conservation community through scientific research, education and training, model field projects, and the dissemination of the results of both its own work and the work of others in the field. In all its endeavors, the GCI focuses on the creation and delivery of knowledge that will benefit the professionals and organizations responsible for the conservation of the world’s cultural heritage. Advancing conservation practice is the organizing principle for all of the Institute's work – which includes identifying activities that improve the way conservation treatments are carried out, pursuing research that expands conservation knowledge, and increasing access to information on conservation subjects. The Getty Conservation Institute, a part of the J. Paul Getty Trust, began operation in 1985. Since its inception, the Institute has engaged in programs of scientific research, educational activities, documentation, and the dissemination of information through publications, conferences, workshops, and public programs that include research opportunities for professionals and public lectures. In addition, the Institute has conducted international field projects in Asia, Africa, North and South America, and Europe.

The Center for Khmer Studies promotes research, teaching and public service in the social sciences, arts and humanities as they relate to Cambodia. While promoting scholarly interest in the region, CKS also aims to connect Cambodian scholars, students and artists with their international colleagues for the purpose of fostering understanding of Cambodia and Southeast Asia. The organization’s objectives are to:

1) Facilitate research and international scholarly exchange through programs that increase understanding of Cambodia and its region
2) Help strengthen Cambodia’s cultural and academic structures and integrate Cambodian scholars into their regional and international community
3) Promote a vigorous Cambodian civil society

Founded in 1999, CKS is an international, non-governmental organization supported by a consortium of universities, organizations, scholars and individuals. CKS is registered with the Ministry of Foreign Affairs of Cambodia and incorporated in the
United States as a tax-exempt institution under article 501(c)3 of the Internal Revenue Code. CKS is the first and only member institution of the Council of American Overseas Research Centers (CAORC) in Southeast Asia. Programs are based in two offices in Cambodia: its headquarters in Siem Reap-Angkor and in the capital, Phnom Penh. CKS also maintains an administrative office in New York City and a support office in Paris, Les Amis du Centre d’Etudes Khméres where it is registered as an Association Loi 1901.

CONTRIBUTORS:

Observatoire Siem Reap-Angkor, Architecture, patrimoine, développement is a research group of IPRAUS hosted by the School of Architecture of Paris-Belleville, UMR A.U.S. n°7136 C.N.R.S (National Center for Scientific Research). Formed in 2005, the aim of the Observatory is to document the urban and architectural transformations taking place in Siem Reap given the proximity between a major archaeological site and a modern town both subject to intense tourist flows and investment pressures. The Observatory also supports doctoral and post-doctoral research and has been a crucial source of information for this report. The Center for Khmer Studies signed a convention with IPRAUS which made the involvement of the Observatory in the report and in the forum possible. CKS would like to extend its gratitude to IPRAUS for this collaboration.

Aline Hétreau-Pottier is the author of the chapter “The Urban Value of Siem Reap in the Angkor Region” in this report. She is involved with IPRAUS/UMR A.U.S. n° 7136 C.N.R.S and has taken part in the creation of the Observatory of Siem Reap-Angkor, Architecture, Heritage, Development. She is also responsible for that Observatory in Siem Reap. She is a doctoral candidate at the École Doctorale Ville et Environnement of the École Nationale des ponts et Chaussée and École Nationale Supérieure d’Architecture de Paris Belleville.
Siem Reap: Urban Development in the Shadow of Angkor

**Preface**

The 2008 Pacific Rim Council on Urban Development (PRCUD) annual forum *Siem Reap: Urban Development in the Shadow of Angkor* is made possible through the work of the Center for Khmer Studies, the Getty Conservation Institute, and APSARA Authority in consultation with Siem Reap Provincial Hall. The objective of the PRCUD Forum is to address development issues emerging from the complex interplay of Siem Reap’s urbanization and heritage conservation taking place in the broader Angkor region. The Forum will convene local and international experts and government officials to pursue the next phases of the *Integrated Master Plan for Sustainable Development of the Siem Reap – Angkor Region* developed by the Japanese International Cooperation Agency (JICA) in 2006 based on lessons and expertise drawn from other parts of the world. In doing so, the Forum will assist and complement the recommendations put forth by the International Coordinating Committee for the Safeguarding and Development of the Historic Site of Angkor (ICC) and UNESCO.

The key aim of the PRCUD Forum is to make practical recommendations to transform existing studies into plans for action. With this in mind, the forum will address implementation in the form of such questions as:

1. How can the intrinsic values of Siem Reap be reflected in development and conservation efforts?
2. What kinds of regulatory and institutional structures are co-extensive and consistent with these values?
3. How can tourism and economic policy be shaped to support sustainable development of the Angkor region?
4. What mechanisms and investment structures can the private sector provide in mobilizing these goals?
5. What are the next steps required to ensure effective implementation of the Siem Reap Master Plan?
EXECUTIVE SUMMARY

This Executive Summary outlines some of the key arguments of the 2008 PRCUD Forum Briefing Document, *Siem Reap: Urban Development in the Shadow of Angkor*.

The temples of Angkor are an unambiguous testament to the preeminence of Khmer-Cambodian culture and its heritage. An ambiguity, both conceptual and practical, on the other hand characterizes heritage non-monumental in form, namely Siem Reap’s cultural urban geography. Unlike Angkor, it is not vetted or underwritten by the international community. UNESCO’s prerequisite for World Heritage status is that the site demonstrate “outstanding universal value” which takes a particular cultural-national-historical production and gives it value and force in the global domain. Heritage thus can be seen as an object as well as a relation, and part of the economy of representations, its power vested in the performance of space and accordingly another vector of the built environment and the urban capitalist economy. Yet everyday heritage is less about architectural preservation and arguably more about ways of building or organizing space according to ethical-religious beliefs and economic needs. Unfortunately, present challenges associated with accelerated urban and tourism development compromise an understanding of these practices. Such challenges, however, do raise important questions about history as a terrain of discourse, and heritage as managed and produced by and for particular groups of people.

The Cultural Economy of Heritage in Siem Reap (Chapter IV) locates urban heritage under Angkor’s shadow and examines the history of heritage management of the Siem Reap-Angkor region with a particular focus on urban heritage. Institutionally and politically, knowledge of the region has looked to the past concentrating on ancient Khmer civilization, art and architecture, and the design of cities of the Angkorian and pre-Angkorian period. The complex relationships between history, present day Siem Reap, and the sustainability of the region’s future development represent the multi-dimensional problem of living with heritage. The seemingly non-contiguous boundaries between Angkor and the city have, moreover, historically paralleled divisions in conservation and economic development efforts if not in scholarship. When historicized, this division can be in part attributed to the primacy of Angkor with its grandeur institutionalized in various circuits of power and interests beginning with its purported “rediscovery” in the 19th century. This period marked the beginnings of a narrative that framed Khmer civilization as a vanishing object made more acute in the hands of Cambodians who were considered its undeserving if not illegitimate heirs. However this rediscovery was more political and symbolic, rather than strictly factual as Angkor flourished as a Buddhist sanctuary for centuries prior to the arrival of the French.

In the modern period, management efforts in the past fifteen years have focused on safeguarding antiquity in ways that have been reactive and defensive towards urbanization and population pressures despite the proximity between the city and the temples. Angkor nevertheless serves as a pivot between antiquity and modernity central to nationalist imaginings, as the iconography of Angkor and the iconography of the nation are inseparable. Siem Reap too sits at the crossroads of the past and the future though its urbanism has often been overshadowed by Angkor with its extraordinary situation of being a small regional city home to a World Heritage Site.

Although Siem Reap is often presented as a “dormitory city,” or a hub for services, leisure and accommodation, the city is comprised of overlapping layers of Angkorian occupation, its environment shaped through several centuries of continuous agrarian human settlement that continues into the present day. Angkor’s heritage is not restricted to a collection of monumental architectural works built during the height of empire unceremoniously swallowed
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by the jungle. Beyond its famous temples, many of which are located in Angkor Archaeological Park, Angkor was also a set of agrarian cities partially superimposed over the other between the 9th and 15th centuries if not beyond. This history forms the basis of the construction of Siem Reap and its surroundings. It is the presence of these ancient structures and an environment extensively cultivated by its habitants that provide the literal foundation of Siem Reap today. Chapter I on The Urban Value of Siem Reap in the Angkor Region highlights how recent development has significantly altered the “garden town” features of Siem Reap, despite being politically and culturally celebrated in tourism and expert studies. This reconfiguration also has altered the relationship of the town to the countryside leading to fragmentation and a disarticulation of Siem Reap’s urbanism. Land speculation and the absence of a master plan along with new tourism streams constitute urban configurations that are modifying the identity of the town and its territory as private investments have direct impacts on urban and architectural form.

Development initiatives are the focus of Chapter II, The Institutional Geography of Siem Reap: Issues in Governance and Planning, which chronicles the changes in the institutional geography of land management and urban planning, and highlights planning initiatives that have been developed for the region by various international development teams in collaboration with or commissioned by government. While foreign planning expertise has functioned to support technical and personnel capacity in local government, implementation has been of a different order of magnitude given difficulties of policy enactment and an unclear division of labor in administrative and budgetary oversight. This chapter explores urban governance and the logic of rule in Siem Reap through the political and spatial formations that constitute the city, specifically the public dimension of urban governance.

Three authorities presently have roles and responsibilities in land management, urban planning and construction in Siem Reap. They are the provincial department of the Ministry of Land Management, Urban Planning and Construction (MLMUPC); APSARA’s department of urban heritage; and the district. What makes Siem Reap a peculiar case is that while provincial authorities administrate the rest of Cambodia, Angkor’s World Heritage listing has required the creation of a public authority, APSARA, in charge of the management of the region. Secondly, the district of Siem Reap has recently been selected to lead countrywide decentralization efforts making it necessary that it too be competent in land management, urban planning and construction.

These overlapping mandates have created administrative and bureaucratic gray zones. In particular the roles and responsibilities of APSARA, as defined in legislation, are vast if not unwieldy. Its institutional mandate is to supervise the conservation and the development of the whole Siem Reap-Angkor region. In contrast, its actual role in urban planning and construction seems to be limited. Also as a matter of priority, APSARA’s resources have been historically tied to emergency-level monument conservation. It is only in the past few years, when Angkor’s monuments ceased to be under imminent threat that questions of sustainable development, even if formally on the agenda since the early stages of development of Siem Reap-Angkor, have been posed in relation to the whole province.

While the primary authority in urban planning is the provincial government, its human and financial resources and the basis of its regulatory capacities are somewhat untenable. Regulations on construction are not grounded in a larger set of strategic guidelines, which again highlights the difficulties produced in the absence of a promulgated master or land use plan. The district also can, now legally, evaluate building construction in the city. Accordingly, each level of government is responsible for evaluating building permits by law and if not by law, through de facto practice. However the issue appears to be one of scale. The national
MLMUPC is responsible for buildings with floor surface areas above 3,000 square meters; the provincial authority, less than 3,000m²; and the district, for buildings less than 500m². APSARA’s department of urban heritage also receives building permit applications for projects exceeding 3,000m² legally under the discretion of the national ministry. Its task is to provide recommendations on such projects, though its opinions are non-binding. If construction is one gray zone, urban development is another. Urban planning efforts and projects in Siem Reap-Angkor, which began in the 1990s with the assistance of international agencies, can be grouped into these cohorts:

1) The Zoning Environmental Master Plan (1995) that followed the listing of Angkor was favored among various plans proposed. This plan led to the promulgation of a sub-decree establishing five zones of protection though the sub-decree zones differ from those set out in ZEMP.

2) The urban development plans by French groups ARTE-BCEOM, Détente, Score and GIE Villes Nouvelles (1990s) which, in the face of future tourism and urban development, proposed a comprehensive strategy for city and regional management that included the Hotel City zone. From these proposals, only the Hotel City was adopted in a sub-decree that established a land reserve devoted exclusively to tourism facilities in the northeast of town. The Hotel City has yet to take form though APSARA is in the process of consolidating land parcels for its development.

3) Attempts to create an urban regulatory framework as proposed by the French team Groupe 8 in collaboration with APSARA. The regulatory provisions first introduced in the ARTE-BCEOM land use plan were readapted to the changed conditions of the city. While several draft sub-decrees on urban regulation were submitted by APSARA, none were promulgated by the Royal Government.

4) The most recent generation of plans includes the study master plan by the Japanese International Cooperation Agency (JICA) undertaken between 2004 and 2006. This period also saw a district-level land use plan developed as part of the Asia Urbs project. Both plans are awaiting approval. Meanwhile, a committee has been formed to implement the master plan, presided over by JICA’s urban management advisor. The committee includes the province and involves APSARA and Siem Reap district.

The tourism economy, the focus of Chapter III, Siem Reap: The Urban Economy in the Face of Tourism, is central to the city’s built environment and physical infrastructure as evident in the development of transport and facilities. The tourism sector requires proper grounding in the political economy and general development indicators on employment and poverty segue into issues of urbanization and economic growth. Tourism to the area is also regional and inter-Asian in nature with definitive spatial forms and practices.

In grounding tourism in the political economy of the city and country, this chapter examines the contradictory position of tourism as an instrument of heritage preservation and urban development. Such a position is not contradictory per se when examining the political economy of Siem Reap from the vantage point of sustainability defined as the balance between tourism, urban and rural development, and archaeological protection. Heritage conservation as a means of socio-economic development locates tourism squarely at the center of this approach. Tourism is thus the interface between development and cultural conservation, representing a convergence that is conflicting and paradoxical however when it comes to questions of regulation and governance. Indeed the importance of the tourism economy to
national development is evident in its phenomenal growth from one million tourist arrivals in 2000 to 2 million in 2007.

Tourism has two basic requirements in order to function: transport and hosting infrastructure (i.e. hotels and restaurants). The development of modes of transport directly linked to the tourism sector, namely the development of the international airport and the future port project on Tonle Sap Lake, have been central to the growth of the industry. In 2004, 70.1% of international travelers arrived by air. The chapter examines tourist facilities by area as emerging urban architectural forms that play an important role in the transformation and expansion of Siem Reap.

While a diversified tourism strategy had been part of the national development agenda since the 1990s, tourism development has evolved slower than expected due to the time-intensive nature of infrastructure development. Cambodian tourism thus is centralized in Siem-Reap Angkor. Tourism continues to be foundational to Cambodia’s national development policy and is one of the four pillars of economic growth along with garments, agriculture, and construction. However “regulatory uncertainty” has been identified as a top constraint to future tourism growth due to the multiple and overlapping mandates of various government agencies involved in the sector.

Urban management for a city of Siem Reap’s size is not complicated per se, but its circumstances are exceptional for it hosts millions of international tourists per year. With demographic and urbanization pressures expected to increase in the years to come, infrastructure capacity and facility standards have become prominent concerns since the late 1990s.

Water, specifically, has been a mounting concern prominent in various urban plans and has been part of the agenda of high-level meetings for these reasons: 1) water extraction from the tables beneath the town’s surface can lead to ground subsidence; 2) ground subsidence is a threat to the structural integrity of the nearby temples; and 3) the topography of the city (mostly flatlands) exacerbates the hydrological pressures of seasonal flooding and strains the town’s drainage networks.

The closing chapter of the 2008 PRCUD Briefing Document, Urban Infrastructure and Environmental Management (Chapter V) examines networked infrastructure of the city. The strengths that define the city – its accessibility by air, land, and water; its paramount location at the mouth of Angkor; and its unique position as a magnet for policy support from various government and non-profit bodies – also point to the fragility and complexity of balancing infrastructure demands with tourist, residential and geographic needs. To that end, this chapter touches upon the infrastructure question by addressing water production, waste management, sewerage and drainage, as well as public water and roads in relation to the social and natural geographies of Siem Reap.

The role of infrastructure in capitalist accumulation continues to be crucial to the service economy and thus in the context of Cambodia has been identified as the basis of social reproduction of tourism. Accordingly Cambodia is more representative of global trends in infrastructure, its provision defined by the logic of privatization and its subsequent segmentation by class and geography. The major cities in the country have witnessed rapid increases in the volume of solid and liquid waste, and wastewater management is an urgent problem. For one, many areas of Cambodia’s cities, including Phnom Penh, are still without adequate waste collection. There are no special dumpsites or other treatment facilities for toxic and hazardous waste and only a few hospitals have on-site incinerators. Toxic and hazardous
waste is burned at open dumpsites along with solid waste; a public health hazard that could leach toxins like dioxin, a serious environmental pollutant, into soil and water. In addition, the introduction of export duties on recyclable materials, usually sold to neighboring countries, has eroded profitability of the market in recyclable waste resulting in an increase of solid waste that is improperly disposed. Limited water resources in Siem Reap District represent a major constraint to the development of the area compounded by tourism demands that in the future will likely outstrip supply. The current water supply system utilizes groundwater from eight deep wells with a daily capacity of 8,000m$^3$.

Domestic sewage, commercial waste, agricultural run-off, and untreated solid waste pollute surface and groundwater in the country. Increasing concentrations of coliform bacteria, a presence in water that indicates fecal contamination, represent a serious health risk especially during the dry season between April and July. Sedimentation from land clearing, from both commercial development and subsistence farming, also contribute to the overall decrease in water quality. Siem Reap River and Tonle Sap are contaminated with effluents as both are the final discharge points for the drainage system. The volume loads of these water bodies dilute pollutants that become less harmful to human and animal life. However water quality also varies by season and by flood level and high volumes of feces, urine and gray water are released daily in inland and ground water bodies in the country. Problems with sewerage systems in Cambodian cities include ill-functioning pipes due to poor maintenance and construction. Many are clogged by improperly dumped garbage and infrequent removal of silt contributing to an overall breakdown of the system that increase the risks of flooding during the rainy season. Wastewater that is collected by the city sewer system discharges into canals that can overflow in the low-lying areas surrounding them. And the drainage system, which is designed for storm water, acts as a de facto system for sewage, producing a mixture of sewage and floodwater during heavy rains.

The conditions of some roads in the city are quite poor with some areas in effect isolated during the rainy season. Many unpaved roads in the peri-urban area of Siem Reap are made of laterite, a reddish clay-like material that is hard when dry and slippery when wet, or macadam, broken stone used in compact layers for road surfacing. Poor road conditions are also associated to drainage problems in the city. Subsidiary roads, generally narrow and in inferior condition, force traffic onto arterials creating bottlenecks at the French Bridge (the intersection of the river and National Road 6) and at the intersection of National Road 6 and Sivatha Boulevard. Future road network planning will be based on traffic loads on NR6, which is the access point for those flying into the city or those driving in from Phnom Penh. However National Road 6 is also the only major east-west arterial causing lop-sided development. This corridor hosts a high concentration of hotels along its edges while also the location of the city’s largest market, Psar Leu. There are no road regulations or guidelines for residential areas forcing property owners to build private roads to meet growing needs.
CHAPTER I
THE URBAN VALUE OF SIEM REAP IN THE ANGKOR REGION

INTRODUCTION
With a population of more than 80,000² Siem Reap is the eponymous seat of the province located five kilometers from Angkor Wat and seven kilometers from the flooded plains of the south. It sits at the junction of two perpendicular routes, the Siem Reap stung (river) and National Road 6 (NR6). Beyond its administrative, commercial and residential urban functions, its proximity to Angkor is reshaping it into an international tourist hub. This position was reinforced in 1992 with the inscription of Angkor on the World Heritage List. In less than fifteen years economic development, a demographic boom and increases in tourism have drawn Siem Reap into a cycle of far-reaching and rapid changes with implications for its urban and rural landscape that together make the city a unique place.

THE ORIGINS OF THE SIEM REAP PLAINS: ANGKORIAN AND TRADITIONAL HERITAGE
Although Siem Reap is often presented as a “dormitory city,” or a hub for services, leisure and accommodation, the city is made up of a series of overlapping layers of Angkorian occupation with its environment shaped through several centuries of continuous agrarian human settlement that continues into the present day. Angkor’s heritage is not restricted to a collection of monumental architectural works built during the height of empire only to be “swallowed by the jungle.” Beyond these famous temples, many of them within present Angkor Archaeological Park, Angkor was also a set of agrarian cities partially superimposed over the other between the 9th and 15th centuries. This history forms the basis of the construction of Siem Reap and its surroundings. It is perhaps the presence of these ancient structures and an environment extensively cultivated by its habitants that provide the literal foundation of Siem Reap today.

FIGURE 1: Angkor complex with Siem Reap at lower left (NASA/JPL 1994).

1 Author: Aline Hétreau-Pottier. This chapter is based on her dissertation project, Development and heritage: forms and changes of the town of Siem Reap in the shadow of Angkor (1907-2007), National and International Discourses and Realities, École doctorale ville et environnement, École Nationale des Ponts et Chaussées, École nationale supérieure d’Architecture de Paris-Belleville.

2 The official population of Siem Reap District (approximately 350 km²) was estimated at 140,000 according to the 2005 census. “Urban” Siem Reap is considerably smaller with a population of at least 70,000 though the administrative area of Siem Reap is comprised of village clusters and is not officially classified as a municipality. Eighty thousand is an estimate based on demographic growth though the figure does not take into account rural migration into the town.
The Foundation of Siem Reap: Angkorian Human Settlement

Part of the rich heritage of the Angkor-Siem Reap Plains include centuries of human settlement that shaped the landscape, not only visible in popular monumental form but also through non-monumental constructions. They are no less impressive if not equally fundamental to the cultural traditions specific to the region. Inhabitation appears to have begun in the pre-historic era during the Bronze Age in areas hospitable to human settlement, namely the banks of the Tonle Sap and other natural waterways. Khmer society was concurrently undergoing profound changes (the Iron Age, religious shifts from Hinduism/Brahmanism to Theravada Buddhism, etc.) with likely impacts on the environment and human practices. Change was arguably greatest during the Angkorian period when Khmer kings adapted the whole of the landscape to their religious cosmology. This palimpsest of multiple planning interventions included an expansion of arable land to the north, establishing a continuum of human and environmental interaction. It is still strongly present, for example, in the geography of the “spirits,” or neak ta, and folk legends that proliferate and articulate space, the village and the home of Siem Reap’s dwellers.

It would be wrong to assume that because Angkor was abandoned as the capital that there was a break in practice or the area vacant of people. On the contrary, the Siem Reap Plains continued to be inhabited from the 15th century onward.

The centuries-long Angkorian period is best characterized by the strong and coherent planning of territory that organized space according to the topography of the land whether through the hydraulic potential of Mount Kulen or the Great Lake of Tonle Sap. The region’s hydrology is based on a system that originates in Kulen and includes the rivers in the area and the watershed of the alluvial plains. Land is enriched by overflow of the lake from the Mekong. The lake has been a protein source for Siem Reap even prior to Angkor. In the late 1990s, Tonle Sap was given biosphere status by UNESCO and Mount Kulen made a national reserve. It was this huge ecosystem harnessed by Khmer sovereigns and carried on by generations of farmers that led to both its rise and likely also its fall (see Fletcher et al. 2003, Lustig et al. 2008). The location selected for Angkor, at the foot of Mount Kulen, is a perfect example of the civilization’s identity organized around the symbols of water (the oceans) and mountains (ex. Mount Meru). The main rivers of the region, Roluos, Siem Reap and Puok, were compared to “the mythical Ganges” in ancient inscriptions, flowing and irrigating the plains enhanced by numerous dykes of varying sizes used to collect surface water throughout several hundred artificial ponds that still exist in the urban and rural areas of Siem Reap.

![Figure 2](image1.png)

**Figure 2 (l):** Extensive medieval “hydraulic city” during the 13th century (Groslier 1979);

**Figure 3 (r):** Environmental and territorial analysis of the Angkor area (ARTE-BCEOM 1995).
The Siem Reap Plains, not only symbolically but physically, can be divided into three distinctive areas. To the north are the major ancient capitals in what is now the Park. To the south are the inundated lands surrounding the Great Lake. And between the two are the agricultural and alluvial plains or the present-day town of Siem Reap.

**FIGURE 4**: Angkor Thom, Victory Gate (P. Dieulefils 1909).

The Angkorian kings through each of their capitals deeply reshaped the landscape, establishing hydraulic systems to serve social, economic and religious functions. While these systems were changed in subsequent periods after Angkor, traces of Khmer civilization and its extensive agricultural focus can be found in areas comprised of scattered villages and local and minor temples. For one, the town of Siem Reap sits at the junction of three major canals, evidence of an Angkorian environment with its many villages, ponds, square paddy fields and religious foundations. The town then can be considered as the heart of the richest Angkorian suburb and part of a massive 1,000km² agrarian city defined by an unparalleled urban-rural continuum.

**FIGURE 5**: Villages and surrounding countryside of Siem Reap (Photo by A. Hétreau-Pottier 1994).
**Living with Heritage: Traditional Village Features**

Since then, villages have developed within these plains according to specific traditional spatial configurations, whether scattered hamlets centered around ponds and/or monasteries, as neatly lined settlements along the river; or those grouped at the foot of hills (phnom). In the south, the inundated floodplains around Tonle Sap and the base of Siem Reap River have required a different kind of organization in the form of migratory floating villages or stationary villages built on stilts. It follows that according to its topography that Siem Reap was settled in an orderly manner with the river playing a decisive role in fixing the town’s main components and axes. Recent research based on Angkor’s spatial organization (Hetreau-Pottier 2007) and on twentieth-century maps (Pottier 1999) demonstrates that the organization and planning of the present city was indeed much more complex than originally thought with its advanced road networks and hydraulic structures. For example, Siem Reap River had originally served as an Angkorian canal (Pottier 2007).

Established before the twentieth century, central Siem Reap was located at the intersection of this river canal with another coming from the west of Angkor (Puok to Roluos), and a third from the moat of Angkor Wat heading towards the Lake. These canals were fundamental to the development of the town, evident in the remains of the ancient temples of which Preah Enkosei and Wat Athvea are the most visible. Traces of human settlement are also evident throughout the area and together with the concentration of monasteries along Siem Reap River (built almost systematically above Angkorian settlements) are indications that the spatial composition of residential housing can be traced to this period. Archaeological maps moreover reveal that the town’s economic center was near Wat Bo monastery. This prevailing pattern of spatial organization points to a continuity in social and religious activity, even after Angkor had been abandoned. The first recorded European accounts written in the mid-nineteenth century note that stung Siem Reap was flanked by continuous rows of gardens and orchards tended by a series of farming villages for a full ten kilometers. According to the accounts by Spanish missionaries, the royal residence in the 16th century was located not in Angkor Thom, but further south in a village along the river. The first European descriptions written in the mid-nineteenth century describe the river as a succession of gardens. Siem Reap was formed by a gradual amalgamation of line villages ten kilometers in length, each clustered around a Buddhist monastery, now numbering a dozen, with each wat a place for worship, education, and socializing, or in other words, the center of public life. This configuration of social life and spatial organization continued into the twentieth century, still deeply rooted in unique archaeological, historical and cultural heritage. Town development was never really disconnected from its past as the town continued to maintain and function in harmony with its traditional features even as Cambodia reopened its doors to the world in the 1990s.

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**FIGURE 6** (l): Travel to Khmer monuments. Siem Reap Aroyo and sala (A.T.);
**FIGURE 7** (r): Traditional noria atmosphere along the river (Photo by A. Hétteau-Pottier 1994).
A CHRONICLE OF DEVELOPMENT: FROM VILLAGES TO A TOWN
The spectacular urban growth of the past ten years sits in stark contrast to the relatively slow development that has historically characterized Siem Reap. Earlier development took over half a century with each stage deeply related to political events.

A SIAMESE PROVINCE: BETWEEN GREED, EXPANSION AND EXPLORATION (1794-1907)

Siem Reap, which means “Siam conquered” or the “subdued Siamese,” along with the provinces of Sisophon and Battambang had been occupied by the Siamese from 1794 until their retrocession under the Franco-Siamese Treaty of 1907. However, there were explorers to the town beginning in the late nineteenth century, prompted by the exciting “discovery” of Angkor and underwritten by colonial interests in Indochina. Both late nineteenth century descriptions by western explorers along with Siamese maps clearly reflect the town’s outlines and structures, and landscape defined by its waterways and vegetation oriented specifically around the river with village life centered around monasteries or places to worship and to socialize. From the late nineteenth century onward, Siem Reap was identified as the gateway to Angkor Wat, essential to the itineraries of Buddhist pilgrims.

Siem Reap during this period developed into an administrative, commercial and agricultural center spanning over ten kilometers north to south. Along the river were a succession of wooden and thatched houses built under canopies of vegetation and surrounded by irrigated orchards and rice paddies. This linear organization of town life features in the descriptions of European explorers, particularly the route necessary to reach this “burgh” by boat from the Tonle Sap Lake and the canoes used for travel along the river. To the north of town was the Siamese governor’s citadel surrounded by ramparts and bastions, built in 1834. It later served as the residence of the governor of the province.

FIGURES 9 AND 10: Doudart de Lagrée missions (Gsell 1866); Map of Angkor Region (Aymonier 1901).
Provincial seat of the protectorate (1907-1953)
Cambodia became a French protectorate in 1863 though the Siamese retroceded Siem Reap Province to the French only in 1907. It took ten years before the French administration began to develop the town and the temple sites. To the south was the town’s first market located at the junction of ancient canals, or the site of present-day Wat Bo monastery. The market was relocated to Psar Chas (Old Market) which exists today. Based on the town’s site plan, on the south, the first row of brick shophouses were built around Psar Chas market hall and in the north, the citadel was cleared to create an administrative area following a street grid. These first endeavors in urban planning produced a post office, prison, a hospital and other infrastructure vital to what would become the provincial seat. Later, the Grand Hotel and park were built in the northern quarter which was also the home of the shrine of Neak Ta Ya Tep, the spirit-protector of the town. While the town still developed along the river, in the 1920s the city was reorganized along a grid pattern with the construction of the new colonial road N°1bis that linked Angkor to Saigon via Phnom Penh; what is today National Road 6. This new east-west arterial fundamentally altered the traditional means of accessing the town through its waterways. It was around this time that Angkor Archaeological Park was created in 1925 along with two visitor roads circuits. The protectorate continued to enhance infrastructure and shape the growth of Siem Reap and Angkor, gradually defining each by a separate set of characteristics with one a modest administrative county town and the other a great monumental attraction.

**Figure 11** (l): Beginnings of tourism in Indochina (D. de Montpensier 1910);
**Figure 12** (r): Grand Hotel d’Angkor, Siem Reap circa 1933.

**Figure 13**: Houses on the riverbank (L. Busy 1921).
**Independent Siem Reap and Angkor’s attractions (1953-1975)**

Following Cambodia’s independence in 1953, the town continued to define its urban aspects. The central area densified with features that represented a new Cambodia including modern buildings such as the prince’s villa, the courthouse, the stadium, schools and the former Suryavarman II high school bordering the Angkor forest. Tourism started to expand to approximately 50,000 visitors per annum in the late 1960s, with accommodations found in the town’s few hotels, the Grand Hotel, Hotel de la Paix and the Auberge des temples located opposite Angkor Wat. The Air France Hotel was built later in 1970 also in the vicinity of Angkor Wat. But the city remained modest in size with a population of 10,000. The compact commercial area was a contrast to other parts of the city, whether administrative or residential buildings located in the middle of large open plots. Although the airport was expanded, modernized and given international rights, authorities prioritized the development of other provincial towns in the country. Public works continued to be carried out including the expansion of rice paddies to the south of the western baray followed by the construction of a large irrigation network to cover the entire western span of Siem Reap. This work began in the early 1930s, halted during World War II and restarted with Cambodia’s independence and lasted until the end of the 1950s. Between 1992 and 2002, development proposals advocated that this area be conserved as an agricultural reserve. At present one of the main canals has been filled in and turned into a bypass road in the south of Siem Reap. Hundreds of agricultural plots have been sold, subject to land speculation or used for large-scale private projects.

At the beginning of the 1970s new development projects in proximity to the temples and on the north of Siem Reap were planned but not implemented, or they were later destroyed and razed as the Khmer Rouge began its occupation of the temples during this period. Sitting between two combat zones, the town began to turn inwards and away from the rest of the country finally falling at the same time as Phnom Penh in 1975.

**Siem Reap emptied and besieged (1975-1992)**

In 1975, the town was emptied. Only after the fall of the Khmer Rouge in 1979 did the population slowly return to Siem Reap, though it remained largely a defensive zone until 1992. Yet there are several important developments that date from this period, including a defensive dike built around the city as well as the present “south circular road” which, for the first time, delimited the town to an area of approximately 25km². While the Old Market remained abandoned, two new markets Psar Leu (the upper market) on NR6 and Psar Krom (the lower market) were built on the town’s edge located far from the town center for security reasons though still within limits of the defensive line. Phum Thmey, or new village, was established in 1990 on over nine hundred hectares to the northwest of the town as a relocation site for...
displaced persons. This area has since tripled in size encroaching on Zone 2, which is part of the archaeological park.

**Completing the Transformation (1992-2008)**

Since reopening to the international world, Siem Reap has been subjected to the new forces of globalization, as has much of the country, profoundly altering the town’s original patterns of development and changing the pace of its construction. The current wave of tourism differs radically from that of the 1960s for reasons highlighted below.


When the country reopened in the early 1990s, Siem Reap town had continued to develop, albeit slowly, along two main and still viable routes: the stung, the original river axis and NR6, the commercial axis linking the city to Phnom Penh to the east and the airport to the west. In 1993, the town’s urban population was 40,000. Population figures and urban growth are difficult to compare across time because the town’s borders are not fully demarcated. Reconstruction and extension of the road network supported the orientation of the town around these two axes but precipitated encroachment and development of new neighborhoods beyond the river, on agricultural lands. The town maintained a kind of continuity in terms of its landscape and culture, at least with the temples and the countryside. In 1993, tourism infrastructure included a half a dozen hotels to accommodate 8,000 visitors per year. In the years that followed, tourism picked up slowly though uniformly. Tourism stalled slightly with the internal political infighting and the regional economic crises of 1997. However this was offset by the first international flights to land directly at Siem Reap airport. In 1995 the number of hotel rooms in the town totaled 1,100, adding to an existing 550 guesthouse rooms. It was only late in 1997 that the first hotel with international standards opened, the restored Grand Hotel, with the next hotel to open in 2000. During this period of slow economic growth, development increased along the two main road axes, in particular along NR6. Psar Chas reopened in 1996 revitalizing the historic commercial district of the town.

![Figure 15](image1.png) ![Figure 16](image2.png)

**Figure 15** (l): Siem Reap and its villages along the river (US Army 1971);

**Figure 16** (r): Siem Reap – a “green city” or a “rural town” (Photo by A. Hétreau-Pottier 1993).

During the 1990s the Cambodian authorities began efforts in planning. The first years following the reopening of the country included several recommendations and ideas for town conservation and development along with a management plan for Angkor park after the latter was inscribed on the World Heritage List in 1992. The first study, the ZEMP adapted to the scale of Siem Reap and Angkor was proposed as early as 1993 to balance both protection and development needs, while respecting the area’s human, cultural and natural environments. Recognizing the inherent “values” of the traditional town of Siem Reap as a green city or rural town, the ZEMP included measures to preserve this rural, urban and traditional landscape in continuity with the
Siem Reap: Urban Development in the Shadow of Angkor

Siem Reap at the time was a garden town with an abundance of trees, ponds, and canals that carved out a rich landscape. Colonial buildings and others dating from the 1960s and the town’s vernacular architecture endowed Siem Reap with unequivocal value and heritage. The Cambodian government agreed to its zoning plan in a 1994 Royal Decree. In particular it established Siem Reap as part of a “protected cultural landscape” zone integrating the “colonial” and “modern” parts of the town down to the lake. Then in 1995 an urban plan, Plan d’Urbanisme et de Référence et Projets prioritaires (PUR), was proposed by ARTE-BCEOM (1995a) in order to specify the administrative capacities following the decree. It proposed among other things regulating construction along NR6, preserving the town center for administrative and commercial functions and having town development town to take place in the east in order to safeguard the agricultural area to the west. The study also recommended implementing a conservation and development policy for each area, according to the specific characteristics of each. APSARA and Groupe 8 proposed some changes (in 1999) with the PUSC (Land Management and Construction Plan of the Siem Reap/Angkor region) that was later revised in 2002 (see chapter on institutional geography).

While legally, some of these projects and proposals were supported by sub-decrees, at other times legislation was overridden if not rescinded. Therefore no plan was legally adopted by the government and it follows that no plans were fully implemented. National Sub-decree 86 (1997) on building permits is the only approved framework on construction and land management. Laws on land-use planning (1994) and on national cultural heritage protection (1996 and 2002) have not been adequate to protect the town’s cultural, archaeological and historical capital. The latest master plan proposal for sustainable development of the town with its target the year 2020 was drafted by the Japanese International Cooperation Agency (JICA). Asia Urbs (2004-2006) put forward a set of principles to guide construction and future development but did not include analysis, define or recommendations on legacy values or on the town’s inherent values beyond a few monasteries and temples outside the Park like Wat Atvear and Wat Tchetdei. The JICA study plan characterizes Siem Reap as a “compact town” though such a characterization is more ideal-typic and less reflective of present development practices. Since 2000 with the creation of the Land Planning Ministry, building permits are as much the jurisdiction of the district as they are of provincial government and APSARA. This overlap of jurisdiction complicates urban planning as APSARA Authority, the Province and the District each have their own distinctive master plans.

The millennium heralded a new era of town development. A construction boom dovetailed with renewed political stability following the political skirmishes in 1997-1998. In the last decade, Cambodia’s economic growth has averaged 7.6% (+10% in 2008). These conditions have allowed for a densification of the urban center, making it a real tourism hub with a concentration of hotel and commercial developments on major roads (NR6 and temple road), and a continuing extension of residential areas. Development seems, however, to have been out of touch with the principles set out in the number of proposed plans drafted in preceding years. Thus, the town’s area has increased tenfold during the past ten years with a lot of uncontrolled construction scattered in both urban and rural areas. Recent developments have happened in the hotel and service industries with residential and commercial projects scattered throughout the town’s “suburban” edges.

The most visible developments in the town have involved the hotel sector. From 1999 to 2002 the number of hotel rooms doubled from 1,650 to 3,500 and for the 239,000 visitors who bought entry passes, there were approximately 60 hotels and as many guesthouses. Currently, now there are more than 10,000 rooms in town and millions of foreign visitors expected with tourism increases of 35 percent a year. With a five-fold increase in accommodation capacity during this short period, tourism facilities exist nearly in every part of town. Many are large commercial operations that often occupy huge tracts of land. But the hotel industry is not the largest sector in terms of land occupancy. It occupies 20% of the town’s land and commerce 10%. In contrast residences take up 60 percent of Siem Reap’s area.

Road network development is one evident means for the expansion of the city as a pioneer of growth. At various stages of rehabilitation, road extensions or new networks orientate and influence growth. Rehabilitation itself relies on financing and urban development carried out under planning projects, at least initially, had been funded almost entirely by international
Siem Reap: Urban Development in the Shadow of Angkor

agencies. The rehabilitation efforts of NR6, financed by the World Bank and JICA in 2002, is such an example. The first two stages of operation clearly increased development to the east with the complete reconstruction of Psar Leu, and then road rehabilitation to the west with the airport. Hotels have become increasingly concentrated along the road since 1993. More recently the NR6 section that connects Phnom Penh to Siem Reap was completed in 2004 and triggered an acceleration of trade. Construction work to the east of the town expanded rapidly to include huge shophouse developments. A third access road to the temple was completed in 2003. This road was originally designed as part of the north-south axis to the Hotel City, renamed the Gates of Angkor, and renamed again to the Tourist and Cultural City (see chapter on institutional geography). While the zoned area remains vacant, the road has further stimulated hotel development at junctions with the others roads. Developments along the main axes facilitated building construction further away from these arterials as well as the need for a secondary road network.

Other examples of transport construction during this period include the defensive dike built in the 1980s converted into a bypass road south of the town in 2003. This conversion triggered speculation in neighboring rural areas and induced accelerated demand for a secondary road network from existing rural roads which is currently being built. A more recent example of transport development are the plans for a marina at the foot of Phnom Krom which will change the ecosystem of the inundated fields and the traditional organization of villages on the shores of the lake in the south of Siem Reap. The airport has undergone rehabilitation as well beginning in 1996 with ADB and governmental funds. This has modified the infrastructure network of the town. Since the 2001 concession of the airport’s operation to the VINCI group, the airport has seen extensions including a new international terminal in 2006.

These developments taken together have altered existing rural, environmental and archaeological landscapes and threatened the urban heritage of the town, as most are built with crude materials and reflect poor architectural design while hastening the loss of public open spaces. Recent development has significantly altered the “garden town” features of Siem Reap, which have always been celebrated in the tourism literature and in official speeches and expert studies. This reconfiguration also has altered the relationship of the town to the countryside leading to fragmentation and a disarticulation of Siem Reap’s urbanism, due to a succession of projects mainly coming from opportunistic individuals and private investors. Privatization, land speculation, the absence of a master plan, lack of regulations and of their implementation, the lack of management of publics space coupled with emerging national and international stakeholders, and new tourism streams together constitute urban configurations that modify the former identity of the town and its territory. Land value and short-term profitability of private investments have direct impacts on urban and architectural forms. As in Phnom Penh, Siem Reap

FIGURE 21: Road work (Photo by A. Hétreau-Pottier 2008).
has become a favorite real estate market. In 1992 land values were a few dollars per square meter and now prices for land in the town center are estimated to reach $1,500/m². This boom has spectacular and irreversible consequences on land division, distribution and architectural form.

**Siem Reap in the Shadow of Angkor and a Search for an Identity**

With uncontrolled build-up of existing areas, the scale and pattern of development is changing and becoming more divided and repetitive. Height restrictions are ignored, and most developments are of poor design and construction. Modifications in architectural configurations and urban morphology are increasing building densities, raising heights, introducing exogenous models in architecture without real local adaptation, and wiping out vegetation. Setback requirements have generally gone ignored while concrete buildings have proliferated, preventing natural ventilation and circumscribing sustainable development. Hotel development dominates the landscape with buildings scattered within the town center and along the roads to the airport road and temples now numbering more than 10,000 rooms. Anarchic development is disrupting existing spatial and temporal continuities between the water from the canals or river with dense and varied vegetation, as recent development is being constructed further back from the road.

Markets, shopping centers, souvenir warehouses and restaurants continue to sprout. Shophouse development has become increasingly common in real estate and contributes as much to the town’s transformation as to urban form when built either at the doorsteps of Angkor or deep in the countryside. Whereas shophouses were previously located near markets, and clustered together as small scale and homogenous quarters, shophouse projects that started in 2005 have been of a completely different scale with 50 to 300 and in some instances of upwards of 2,500 units. Private cultural projects like the Angkor national museum or other exhibition halls, leisure projects like golf courses or “cultural villages” are being constructed with complete autonomy and are put up at random whether in the town center as well as in the periphery. Administrative offices formerly located in the administrative district in the town center are being relocated to the far reaches of the periphery to favor private land transactions. Residential areas being developed away from the town’s two main roads have started to reveal a different set of trends. To the northwest, the area of Phum Thmey has tripled in size extending over the protected zones of the archaeological park. Older villages to the northeast have been blocked by the borders of the zoned Hotel City, whereas the southeast has become a vast area dedicated to residential development. As the southwest remains relatively untouched, it will become a likely target for future large-scale real estate transactions.

**Figure 22:** Borey Sokleap project – a new scale of landscape (Photo by A. Hétreau-Pottier 2008).
Unregulated development has led to the lack of proper planning needed particularly in urban infrastructure and community services including public parks and schools. Recognition of this gap in the provision of public infrastructure has been noted in ICC meetings since 2003 with recommendations for better management of Siem Reap’s urban development, its growth, infrastructure (roads, water, public health) and the need improve the living conditions of the town’s residents.

Privatization, insufficient regulation, emerging stakeholders and new tourism practices all are factors that testify to a break with the past. In contrast to its earlier uniform development, urbanization is taking place across the region to the detriment of the town’s own heritage and urban identity. This is a paradox. As Siem Reap grows alongside tourism, there are opportunities and benefits for the town’s development and its identity. But on the contrary, recent trends have run antithetical to this prospect, eroding the character of town. However there are still opportunities to simultaneously engage tradition and modernity along with the town’s own traditional urban culture. If such opportunities are cast aside, however, Siem Reap may have to change its name in the future to “Angkor City” to confirm its position in the shadow of Angkor.

Figures 23-27: Break between past and present with change in rhythms (Photos by A. Hétreau-Pottier 2008).
CHAPTER II
THE INSTITUTIONAL GEOGRAPHY OF SIEM REAP: ISSUES IN GOVERNANCE AND PLANNING

INTRODUCTION
The aim of this chapter is two-fold: one, to situate and chronicle the changes in the institutional geography of land management and urban planning in Siem Reap. The second is to highlight planning initiatives that have been developed for the region by various international development teams in collaboration with or commissioned by government authorities given the local deficits in technical and personnel capacity. While foreign planning expertise has indeed filled such gaps, implementation has been of a different order of magnitude. Difficulties of policy enactment aside are complications involving the division of labor in administrative oversight and budgeting along with the history of power relations and the development of bureaucracy in the country. This chapter explores urban governance and the logic of rule in Siem Reap through the political and spatial formations that constitute the city, specifically the public dimension of urban governance. The focus of this chapter, accordingly, is the institutional geography of Siem Reap. Private governance also plays a crucial role in the city and in Cambodia, whether adaptive patron-client relations, family-based capitalist networks, or regional investors with dealings in agriculture development and land, which is touched upon briefly in the latter part of the chapter.

FIGURE 1 (l): Siem Reap Province; FIGURE 2 (r): Siem Reap District (Source: JICA 2006).

PART I: BUILDING A FRAMEWORK FOR URBAN DEVELOPMENT
The transitional period, which saw a tentative end to civil conflict and the beginnings of a multi-party liberal democratic state, began only in the 1990s. The current constitution had been signed in 1993 though later amended following the collapse of the coalition government in 1997. A preliminary outline on land management can be found in the 1994 Law on Land Management, Urban Planning and Construction, which stipulated that a land use master plan be established for each capital city, province and municipality to comply with the development master plan to be drawn up prior to it (Preah Reach Kram/04NS94/10Aug94, Articles 5, 6, 8). In practice, no such plans were drafted (JICA 2006c). Recent governance reform in different ways picks up where the 1994 law left off with the aim to strengthen local administration over land
planning. But more recent reform measures are under the Ministry of Interior rather than MLMUPC.

The 1999 Sub-decree on the Organization and Function of the Ministry of Land Management, Urban Planning and Construction (MLMUPC) delineates the ministry’s responsibilities after related ministries were merged into one unit. The provisions of this sub-decree appear to be similar to the 1994 law, giving the ministry the authority to prepare and implement land use and development plans throughout the country. The sub-decree is explicit on the organizational composition of the national ministry (Article 4.1) and less so on its local divisions. What is specified is that each province or municipality is to have an office of land management, urban planning, construction, and cadastre; and each district a bureau of land management, urban planning, and land titles. Together they are in charge of implementing and coordinating activities of the Ministry (Anukret/62NKR.BK/20Jul99, Articles 4, 31).

Complicating efforts to establish a coherent local administration is the peculiar situation of Siem Reap-Angkor, specific to Angkor’s World Heritage listing. One of the key conditions of inscription on the UNESCO list had been the creation of a public authority with strong linkages to related ministries and the international community. The latter is overseen by the International Coordinating Committee for Safeguarding and Development of the Historic Site of Angkor (ICC). At present, ICC has shifted from its focus on monumental heritage conservation and has more recently adopted a two-prong strategy based on socio-economic development and cultural conservation. Tourism represents the convergence of these two arenas of development and conservation, though in conflicting and paradoxical ways (see Winter 2003). ICC was established during the 1993 Tokyo conference, its membership comprised of country representatives responsible for funding or overseeing projects in the Angkor region. The ambassadors of France and Japan chair ICC, and UNESCO is the standing secretariat. The committee meets in Siem Reap or Phnom Penh for its annual plenary meeting and meets twice a year to hold technical sessions. All projects in Siem Reap-Angkor are, in theory, to be discussed and approved by the ICC. Its reports document the evolution of projects in the area and the international cooperation involved in this management. APSARA (Authority for the Protection and Management of Angkor and the Region of Angkor) was established by Royal Decree in 1995 responsible for conservation and regional development in Siem Reap-Angkor.

Further adding to the issue of contingency and flexibility of administration in Siem Reap is the absence of a technically or constitutionally defined area that is equivalent to the city or town though each province has its respective capital. In other words, there is no official urban land use classification system in the country. In Siem Reap, the urbanized area best corresponds to the metropolitan district (DED 2007c, JICA 2006c). Yet urbanization is also currently taking place along the east-west corridor of National Road 6 which is beyond the district’s borders while in contrast, the southern quarter of the town has historically been rural. Another component of this interlay as noted above have been reforms designed to give municipal districts and provinces greater fiscal autonomy and decision-making authority; an issue addressed in sections that follow.

This institutional configuration has in ways re-centralized urban planning in Siem Reap and fragmented it in others. Executive authority over the built environment has typically been

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1 In Government Decision number 47 (2003) “Decision on the Structure and the Administration of Srok Battambang and Srok Siem Reap,” srok is translated as district though it can also mean city in Khmer. It also means nation-state or country. Whether this adds to the overall confusion of administrative responsibility aside, the English translation of the decision defines “srok” as district while keeping the Khmer term in the title. Studies by JICA (2006), Asia Urbs (2008) define the urban in terms of land use to include that which is urbanized with that which is urbanizing. The unboundedness of the term signals the same for claims to the city (see Simone n.d.).
centralized and thus planning is determined by scale - larger projects are financed by national ministries and smaller ones by provincial governments. This is rooted in 1) the current financing and budgetary system of the central government and 2) the absence of a regulatory framework for local administration though one is currently taking shape (JICA 2006c). Arguably, the institutional geography of Siem Reap-Angkor constitutes an interlay of governance structures or multiple overlapping vectors of government in ways peculiar to the region for no other region has an authority like APSARA.\(^2\) Adler et al. (2008) call this “pervasive legal pluralism” a defining feature of institutional arrangements and administrative practices in the country or the “numerous, contradictory, and competing sets of rules and norms regulate social, economic and political relationships” particularly in relation to land regulation. Regulation creates overlapping jurisdictions as some laws are vetted, while others are in the process of being created or amended by subsequent legislative measures; all which are selectively applied according to prevailing social norms and administrative practices. The tourism sector too has been defined by a level of “regulatory uncertainty” also given the overlapping regimes of governance of that sector (in MPDF 2008 citing FIAS 2007). Others have explained this institutional geography as a complex bureaucratic web organized, at least officially, around a desired structure of predictability and rigidity and a system of checks and balances with major projects requiring multiple signatures and approvals from the international community, APSARA, the provincial authority or the central government located in Phnom Penh (e.g. Winter 2007).

**Provincial Governance: Outlines of Administrative Form**

The 1993 constitution of Cambodia established provinces and municipalities under the jurisdiction of the Ministry of Interior (Chapter XI, Article 126). Provincial governors are appointed by the Council of Ministers. There is one governor and nine deputy governors in Siem Reap Province. Provinces are divided into districts (srok) and further divided into communes (khans). Municipalities are divided into khan (quarters, districts), and khan into sangkats (wards). Siem Reap province is divided into twelve districts (Ministry of Commerce National and Provincial Resources Bank). Siem Reap District is made up of four urban and six rural communes that total 76 villages (phum) (ARTE-BCEOM 1995).

Provincial administrations are two-tiered units that are conjoined together or 1) provincial departments and 2) provincial divisions of central ministries. This administrative structure in its present form was established in 1994. Administration at the provincial level is constituted along both center-periphery or vertical lines, and horizontal lines between authorities. The vertical system is made up of provisional divisions of line ministries that execute services based on policies of each ministry. Horizontal lines between authorities represent coordination efforts that have been characterized as piecemeal or incongruous. Departments and ministries in charge of urban issues are the provincial divisions of the Ministry of Land Management, Urban Planning and Construction (MLMUPC), the Ministry of Public Works and Transport (MPWT) and provincial departments headed by the governor and vice-governors.

Among the responsibilities of the province are: managing commercial and construction licenses and permits; vehicle registration and land registration. Among the district’s responsibilities are: managing registrations of vehicles and livestock. Communes are responsible for social order, service provision, and assisting socio-economic development and welfare. Responsibilities of the province, district, and communes are outlined in a 1994 sub-decree of the Ministry of Interior.

\(^2\) The exception is the Authorité Nationale pour Préah Vihear or the National Authority for the Protection and Development of the Sacred Site of the Preah Vihear Temple created earlier this year with the inscription of the temple on the UNESCO World Heritage List (www.preahvihearauthority.org).
Roles of the province were amended in March 2005 with the increase from five (5) to nine (9) deputy governors. The governor of the province is responsible for leading joint efforts in the province while also heading general administration and public order. The governor is also responsible for rural and urban development along with the first deputy governor.

In addition to urban and rural development, the first deputy governor is responsible for land management, planning and construction, coordination with APSARA, as well as trade and investments. Responsibilities over public works, transportation, water resources, electricity and energy, and the environment are distributed unevenly among the remaining eight deputy governors with considerable duplication and gaps. Moreover, the organizational structure of the province (FIGURE 3) does not correspond to the work of each governor, while the duties and responsibilities of each team office have yet to be fully stipulated. Despite the scope of its responsibilities, the province does not have its own discretionary budget and thus cannot control or manage urban development projects that take place within it (JICA 2006c).

There are twelve (12) districts in the province with district councils under the provincial government. Siem Reap District is headed by one district chief and three deputy chiefs (per Article 3 of Government Decision No. 47). District hall is comprised of these offices: general administration, offices of social affairs and welfare, finance and property, and communes. With Government Decision 47, the offices of planning and investment, tourism and cultural development became part of the district administration.

**The District and Decentralization Reform**

Decentralization and de-concentration reform has been part of the governance agenda since at least 1996 organized around the principles of participatory and local planning. Reform has been aimed at distributing needed services from below, i.e. from the commune, district and
provincial levels. Some key moments include: 1) the promulgation of the so-called Organic Law which is part of the 1993 constitution; its aim to facilitate knowledge and technology transfers from the national to the sub-national level through the establishment of district-level administrative councils; 2) the National Committee for Management of the Decentralization and De-concentration Reforms (NCDD) established in 2001 under the Council of Ministers and executed by the Ministry of Interior; 3) the Administration Reform and Decentralization Project (ARDP) which began in 2002; its mission to support the promulgation of the Organic Law; and 4) the Strategic Framework for Decentralization and Deconcentration Reforms approved in June 2005 which affirmed the political commitment of the Royal Government to the principles of democratic participation and accountability to Cambodian citizens through durable local institutional forms. This was preceded by the Socio-Economic Improvement for Local Area (Seila), a program that began in 1996 covering five provinces among them Siem Reap and Battambang. Seila was a donor-sponsored project that sought to model local governance towards development and public service delivery. Its original focus was, however, local development for poverty reduction. While progress has been made, further steps in capacity development are still needed (World Bank 2007, JICA 2006c). Overall, decentralization will likely rescale governance practices by giving local levels of government larger discretion over future tax revenues.

As noted above, the aim of decentralization is to build the capacities of provincial and district governments particularly in the fields of land and natural resources management. Emphasis is on local participation. An initial project was undertaken with Siem Reap and Battambang chosen as pilot districts following Government Decision 47 (2003) which identified new governance systems for each district. Each district would be responsible for the administration of public services along with coordination of land-use planning and construction, and the implementation of an urban master plan. Both districts have been deemed “experimental centers” modeling good governance and mobilizing existing resources for local common interest. In open-ended fashion, Article 4 of the decision sets out the District’s role that allows for varying degrees of flexibility:

In implementing the pilot project, the two Districts shall be delegated with such power as to direct, and/or to coordinate, and/or to promote, and/or to supervise the formulation of master plan, land use planning, and all constructions as approved, to build, repair and maintain roads, to control traffic circulation, to register vehicles, to issue licenses and permits to commercial and service companies and to small and medium handicrafts, to handle educational, social, cultural and health care affairs, to conduct civil registration or certify all documents and all photocopied papers.

It is this decentralization reform that framed the Asia Urbs land use projects (2001-2003 and 2004-2007) in the same two pilot sites. The culmination of these decentralization efforts are the land-use plans for Siem Reap and Battambang Districts. Technical assistance was provided by the German Service for Development (DED). With an emphasis on local knowledge and participation, each district formed a planning team to facilitate information and technology sharing. These plans were finalized last year in 2007 and forwarded to the NCDD for approval. According to the Decision, moreover, pilot districts have been vested with a new authority in regulating construction activities. Building permits for projects less than 500m² – previously the jurisdiction of the province – now must be approved by the district.

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3 The Ministry of Interior recently announced that it has budgeted USD$82 million to NCDD for the 2009 fiscal year with a third of the budget ($26 million) from Cambodia’s national budget and remaining funds from Cambodia’s development partners (Phnom Penh Post, 11 September 2008).
APSARA AUTHORITY
The provincial government is not alone in its authority over town planning and construction in the region. Indeed, one of the conditions of Angkor’s inscription as a World Heritage site was the formation of an executive authority with institutional oversight over site management and conservation efforts. Cambodia had only at that point in time emerged from entrenched political conflict that had fractured its institutions and infrastructure. Political conditions thereby necessitated an authority that was autonomous while also inter-ministerial, part of the government while also accountable to stakeholders beyond the state. The authority would be in charge of the protection and development of Siem Reap-Angkor area. In 1995, APSARA was formed. All departments fall under the leadership of the Director General of the authority. The authority however faced some initial snags.

In contrast to the scope of its work, APSARA was initially constrained by budgetary and funding shortfalls. Its budget was directly apportioned by the government and supplemented by international grants, in-kind aid, and revenues from ticket sales. The original ticketing system – which grants visitor passes to Angkor Park – was not fully functional or streamlined leading to profit losses during the first years the park was re-opened to tourists. Fiscally, APSARA was underleveraged unable to provide collateral to guarantee loan repayment (see ICC plenary reports 1996-1998). Because human resources were also being slowly assembled, the 1990s was a period focused on establishing technical working units and educating its staff.

To improve the internal organization of the authority, a second decree was promulgated in 1999 (NS/RKT/0199/18) granting APSARA a percentage of sales receipts after ticketing was subcontracted out to a private vendor, the oil company Sokimex.

APSARA was also established to coordinate and lead the management over and development of the zoned areas (ZEMP – see chapter on heritage) of Siem Reap-Angkor, in collaboration with other government agencies, including ministries and their provincial offices, i.e. departments of environment; tourism; and land management, urban planning and construction. Within APSARA, the department in charge of urban planning would conceive and implement tourist infrastructure and urban projects in the area in tandem with the provincial authorities. Yet, the division of labor and chains of authority were not clearly established by decree (NS/RKT/0295/12). For example, ICEA (2004c) identified difficulties created by overlapping mandates of the various government bodies involved in development and planning. The aim of the ICEA project was to assist APSARA in its performance, which it had characterized “modest” and “embryonic,” particularly on issues related to urban planning and construction. The project accordingly had three major aims: 1) to reorganize the internal structure and functions of APSARA; 2) elaborate principle administrative processes; and 3) improve its documentation center or library holdings. Originally, APSARA was composed of a land management department, a bureau of urban affairs, and a financial office per the 1995 sub-decree that established the authority. Since then, at least five main administrative reforms have restructured APSARA with the most recent reform promulgated this year in 2008 aimed at defining the responsibilities of each department while minimizing bureaucratic loads more generally. An outline of the current organizational structure is noted in Box 1. The restructuring of the authority reflects the shift in focus on sustainable development in conservation work following the second UNESCO Intergovernmental World Heritage Conference in November.

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4 Interviews with APSARA director of Department of Urban Planning and Development of the Siem Reap Region, Tep Vattho (April 2008) and Deputy Director General, Department of Monuments and Archaeology, Ros Borath (July 2008).

5 Originally the Agency for Urban Development, it was later renamed the Department for the Urbanization and Development in Siem Reap-Angkor Region and, with the last APSARA reform of 2008, it is now the Department of Urban Heritage Promotion.

6 Interview with the Deputy Director General, Department of Monuments and Archaeology, Ros Borath (July 2008).
2003 which identified this decade as a critical period of development of Siem Reap-Angkor (in Fletcher et al. 2007).

Per this decree, the department of urban heritage is formally responsible for pursuing a balance between urban development and urban conservation. While this responsibility has been part of the management agenda since APSARA’s formation, no legislative measures had formalized it until now and indeed primacy was placed on conservation efforts. That is, the city is seen as contiguous and contingent to sustainability rather that a threat to it.

According to the ICC, this period is appropriate for engagement with urban development as it follows focalization on archaeological issues (see ICC 2006, 2007). Along these lines, collaboration with provincial authorities has become imperative in urban planning, including oversight in land use and construction processes. In addition, APSARA plays an advisory role to the provincial governor, including identifying prospective areas for public infrastructure, tourism promotion and urban heritage management. It appears that this recent reform has specific implications in the domain of urban development, redefining the role of APASARA as an intermediary for the province and not the final arbiter in land management and construction.

APSARA however maintains and reserves its full authority over the combined zones of Protected Archaeological Reserves (Zone 2) and Monumental Sites (Zone 1) that define the boundaries of the Angkor World Heritage Site based on the legislative document 02-BB (28 June 2004). APSARA also has full oversight over the unimaginatively named “Tourist and Cultural City.” According to the 1999 sub-decree which restructured it, APSARA has exclusive power over construction and building in the “the whole Angkor site” (Article 6). This provision may have actually circumscribed ASPARA’s authority, now officially delimited to zones 1 and 2. Which authority then is responsible for construction in town? Does establishing APSARA’s sole authority over zones 1 and 2 automatically cede control of town construction to the province? The legislation produces gray zones on this point, mirroring the overlapping mandates and authorities that govern these bodies.

In terms of land management issues for those zones beyond the heritage site, the province has in past practice forwarded applications for building permits to APSARA if the proposed site exceeds 3,000m². In such cases, applicants are also required to apply for approval from the Ministry of Land Management, Urban Planning and Construction. Both parties may also review applications for building permits in Zone 3, particularly if the application has potential impacts on existing urban areas, according to the sub-decree proposed titled, “On the definition,
organization, construction and development of the zone of Siem Reap Angkor” (23 July 2004). But this is a de facto process not officially established or formalized by regulation. APSARA makes recommendations to the Ministry of Land Management on the merits of architectural projects proposed by investors and owners, though none of these recommendations are binding. The provincial government reserves its right to refuse such recommendations. APSARA also engages in small-scale urban projects that it submits to the provincial authority for approval.

**CONCLUSION**

Three authorities presently have roles and responsibilities in land management, urban planning and construction in Siem Reap. They are the provincial department of Land Management, Urban Planning and Construction; APSARA’s department of urban heritage; and the district. What makes Siem Reap a peculiar case is that while provincial authorities administrate the rest of Cambodia, Angkor’s World Heritage listing has required the creation of a public authority in charge of the management of the region. Secondly, the district’s selection in leading decentralization necessitates that it too be competent in land management, urban planning and construction.

These overlapping mandates have created administrative and bureaucratic gray zones. In particular the roles and responsibilities of APSARA, as defined in legislation, are vast if not unwieldy. Its institutional mandate is to supervise the conservation and the development of the whole Siem Reap Angkor region. In contrast, its actual role in urban planning and construction seems to be limited. Another perspective is that APSARA is located at various points of a longer chain of authority given that it must seek approval from the provincial administration which legally has final say in planning and construction permits. Indeed, the responsibilities of the APSARA Department of Urban Heritage Promotion is as collaborator and advisor, and not that of a promoter, in planning. Also as a matter of priority, APSARA’s resources have been historically tied to emergency-level monument conservation. It is only in the past few years, when Angkor’s monuments ceased to be under imminent threat that questions of sustainable development, even if formally on the agenda since the early stages of development of Siem Reap-Angkor, have been posed in relation to the whole province.

While the primary authority in urban planning is the provincial government, its human and financial resources are still limited. And the basis of its regulatory capacities is flimsy. Regulations on construction are not grounded in a larger set of strategic guidelines, namely a promulgated master or land use plan. Currently, the only tools at the provincial government’s disposal in controlling construction can be found in the sub-decree for building permits or Sub-decree 86 (1997). The district also can, now legally, evaluate building permits. Accordingly, each level of government is responsible for evaluating building permits by law and if not by law, through de facto practice. However the issue again is a matter of scale. The national MLMUPC is responsible for buildings with floor surface areas above 3,000 square meters; the provincial authority, less than 3,000m²; and the district, for buildings less than 500m². APSARA’s department of urban heritage promotion also receives building permit applications for projects exceeding 3,000m² that are legally under the discretion of the national ministry. Its task is to provide recommendations on such projects, though its opinions are non-binding. If construction is one gray zone, urban development is another. The following section highlights urban planning efforts and projects in Siem Reap-Angkor; a process that began in the 1990s with the assistance of international consultants and aid, and in collaboration with one or all three of these authorities.

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7 Interview with APSARA Department of Urban Planning and Development of the Siem Reap Region team (August 2008).
PART II

PLANNING OF SIEM REAP-ANGKOR: AN INTERNATIONAL AFFAIR

With the re-opening of Cambodia and Angkor’s inscription, tourism development and heritage promotion have raised the issue of sustainable conservation, management and development of the whole region. Several international teams have designed planning projects over the past fifteen years (1991 to 2006) at the behest of either national or local authorities. This section outlines these projects in relation to the changing urban context of Siem Reap.


With the onset of political stability, the management and development of Siem Reap-Angkor became relevant particularly with Angkor’s listing and the tourism development that would be expected to follow. In 1991 the Director General of APSARA at the time and renowned architect, Vann Molyvann, produced a “Master Plan for the Management of Siem Reap-Angkor” in collaboration with ARTE-BCEOM, a French agency (ICC 1993). It was never implemented. A year later ARTE-BCEOM proposed “Etude préalable à la définition d’un schéma directeur d’aménagement de la region de Siem Reap et des sites d’Angkor” backed by UNESCO (ARTE-BCEOM 1995c). The main concept of the plan was to establish multiple poles – a cultural pole to serve as point between the archaeological site and the town’s tourist and urban poles containing facilities, housing and commercial services. The plan suggested that the town develop eastwards following a quadrangular north/south and east/west “weft” that would resemble the spatial orientation of Angkorian cities. This study also did not progress beyond its initial phases.

The need for a master plan for the Siem Reap-Angkor region had been identified during one of the early ICC meetings. The Japanese International Cooperation Agency (JICA) proposed to undertake a comprehensive study focused on the cultural tourism sector, forecasted at that time to reach one million visitors a year (ICC 1994). The original plan for Siem Reap-Angkor was based on a twenty-year timeline with adequate phasing to include a suitable institutional framework and administrative design with measures for safeguarding cultural heritage. There was also a scaling component that would use Siem Reap to equilibrate tourism in the entire country. The national counterpart selected at that time was the Ministry of Public Works. This plan, too, never materialized.9

Strategic zoning and phasing were also integral mechanisms in other tourism and economic development plans, namely the Zoning and Environmental Management Plan (ZEMP) launched in 1992. ZEMP was a comprehensive planning study that located the Angkor World Heritage Site in its larger context while providing Cambodian authorities a set of guidelines for zoning and managing the Angkor region. ZEMP was funded by the United Nations Development Program (UNDP) and the Swedish International Development Agency (SIDA) and executed by UNESCO on behalf of the Ministry of Culture. With an interdisciplinary team of twenty-five Cambodian and international experts, the plan included components on relevant fields including archaeological heritage, natural resources, human settlements, and the political and social economy. The plan also had defined geographical zones for the purposes of protecting important archaeological sites, historic areas, cultural landscapes while identifying the whole province as made up of multiple vectors of the social and political economy. An underlying principle of zoning was to protect the most vulnerable areas by buffering them with support zones. Zones would be made up of sub-zones, allowing subsets to be effectively managed as units. More broadly however, zoning was seen as a tool to achieve resource compatibility. Emphasis was place on defining the five protected areas and the establishment of an

8 In English, “A preliminary study on a master plan for the Siem Reap region and Angkor sites” (authors’ translations).
9 Interview with JICA Phnom Penh (August 2008).
institutional and regulatory framework. ZEMP was designed to provide Cambodian authorities with a plan and a set of guidelines towards heritage conservation and tourism development (in Wager 1995a, 1995b).

Seeing the need for an urban framing of development, the Khmer architect Ros Borath along with Aline Hetreau-Pottier, a French architect, collaborated on a report (1993) that focused on the town and which mapped urban development over the preceding twenty years. The report made recommendations for the existing town and measures for its protection. Among their recommendations were 1) to guide growth in the southern reaches of Siem Reap and 2) to create a bypass road in the north of Angkor and in the south of the urban area to create a “ring” that would facilitate transportation in the region. This would fix the boundaries of urban development inside the Khmer Rouge-era defense dike located in the south of Siem Reap town, create a cultural pole in the north and promote urbanization in the south of the town. In contrast to the earlier ARTE-BCEOM project, which proposed that tourist facilities be located on the town’s periphery, Ros and Hetreau-Pottier proposed the build up of existing areas within the town to extend outwards from the historic core. Each area of the town would have an urban function – eastern Siem Reap for housing and western Siem Reap for tourist facilities.

**PLANNING FOR THE TOWN AND FOR TOURISM**

In 1995, a joint urban development plan and tourism study was undertaken per the request of the Cambodian government. ARTE-BCEOM oversaw the Plan d’Urbanisme de Référence et Projets prioritaires while the Mission d’étude tourisme Angkor Siem Reap was conducted by three agencies – Détente International, a tourism and leisure consultancy; Score, a specialist in hotels and tourism; and GIE des Villes Nouvelles, a consulting group in urban management.

One of the main objectives of the report was, like its predecessors, to develop a coherent tourist growth pole, combining conservation demands and economic development needs. It focused on quality tourism or the creation of an “international and cohesive tourist resort” to control visitor loads and distribute benefits of tourist spending (see chapter on tourism). The study included a strategy on developing tourist-related infrastructure, namely a plan for a special zone of investment (following the 1994 Law on Investments) or what would become a city within the city aptly dubbed the “Hotel City.”

The Hotel City would be, according to this project, developed in the northeastern corner of town in anticipation of a new access gate to Angkor that was scheduled to open there, located at the intersection of two major roads. The area would host a visitor center, shuttle service and parking. This plan also recommended that the western district of Siem Reap be maintained for agriculture while the town develop eastwards. Priorities identified included reforesting areas of the archaeological park, creating a road parallel to National Road 6 to guide tourist-based infrastructure development, and mapping a water network for future growth in the southeast area of the town. The project coordinators recognized the need to establish a legal framework on land issues – on property expropriations and land transactions – as the basis of a land management strategy. This would also serve as the institutional means for APSARA to leverage land assets through required legislation. The project was organized around two phases of implementation with target years 2005 and 2010. The first phase would be devoted to necessary infrastructure development in a three square kilometer urban core, demarcating urban zones in both the city center and along NR6, beginning with the construction of the Hotel City.

10 In English, “Urban reference plan and priority projects” and “Project study on tourism in Siem Reap-Angkor” (authors’ translations).
**Figure 4:** Urban plan with 2010 target (Source: ARTE 1995).

**Figure 5:** Proposal for Hotel City Project (Source: ARTE 1995).
Some general planning measures were given for the 2010 target. The project study outlined urban protection zones which were later codified in Royal Decree. The 50-meter strip along the length of the river was to be zoned for protection while construction activities within 500 meters of the river would be regulated. Adopted in a 1992 Royal decree, it was repealed in 1999 (in JICA 2006). The study suggested that the 500-meter perimeter of National Road 6 be zoned as well (see chapter on infrastructure).

The Hotel City was designed to host up-market hotels of more than 200 to 250 rooms. Hotels with less than 60 rooms would be located in the town. The first phase of the plan for the Hotel City was scheduled to be completed within a two-year time frame to correspond to two hotels. The following five-year phase would correspond to the completion of five hotels. The implementing agency for this project would be APSARA who would be responsible for attracting investment. A list of building regulations was also proposed that stressed low-rise architecture properly landscaped in harmony with the water networks. The built environment would reflect while reinterpret the spatial form of Angkorian cities associated with integrative hydraulic and agricultural systems. While the project, as it appears now, has run into conceivable delays (including land acquisition and consolidation, and financing issues) its principle ideas have survived in subsequent planning studies. While the Hotel City has yet to materialize, it was legally established through sub-decree (79/ANKR/PK, 13 October 1995) and preserved conceptually at least for future growth.

In 1999 with funding from AFD, the French agency Groupe 8 assisted APSARA in formulating regulations and guidelines for urban construction. In Assistance pour l’établissement de documents d’urbanisme réglementaire de Siem Reap Angkor the urban development components originally in the ARTE-BCEOM proposal had been adopted and recalibrated here according to the change in conditions since the writing of the former including an onset of hotel construction. The Kantha Bopha Hospital also opened it doors during that period, built on land conceived in the ARTE-BCEOM plan as part of the road that would link the Hotel City and the airport. The northwest area of Siem Reap, Phum Thmey (or New Village), considered for reforestation was in the process of urbanizing.

In less than four years, the urban plan by ARTE-BCEOM had become outdated if not impossible to implement due to actual existing urbanization of the town. For example, ARTE-BCEOM prescribed a hotel enclave – to house large hotels in one area – that was re-adapted in the Groupe 8 plan as hotel corridors along Commaille Road and Charles de Gaulle Avenue. Hotel construction had already begun and not within Hotel City, which was still in its planning phase.


Groupe 8 also delineated regulations corresponding to each zone in terms of land occupancy, road networks and parking, minimum surfaces areas, construction processes, and landscaping. These urban regulations were formalized first in a Land Use and Construction Plan (PUSC or Plan d’Utilisation des Sols et de la Construction) contained detailed building regulations including zoning, height and colors. It was ratified in national Sub-decree number 35 in 2000. The sub-decree, “Land Use and Construction of Siem Reap” would give APSARA the authority to regulate construction according to the land-use categories set out in PUSC. These regulations, however, were considered too onerous and stringent and the decree was repealed the following September. The PUSC was re-drafted on these points: 1) the elimination of the stipulation on building clearance guidelines for hotels as the 1999 version required 30m setbacks from National Road 6 and 300m between hotels; 2) the requirement that developers...
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protect the existing drainage system (JICA 2006). The sub-decree approved on September 23, 2002 and repealed the next day (in KOSAN, IGIP, BURGEAP, 2007). It was revised again in July 2004 and is still awaiting ratification.

The pending sub-decree has in the meantime been informally adopted by APSARA as a set of guidelines in land-use planning, particularly in evaluating building permits. In the plan, Siem Reap is divided into several zones by land use with lot boundaries and distance from main roads defined. The zones are: the Cultural and Tourist City of Angkor covering 1,007 hectares (approximately 2,488 acres)\(^\text{12}\) or Zone A; Zone B, a buffer zone on both sides of NR6, each 250-meter wide; the zoned areas within 500 meters of the banks of the Siem Reap River designated as Zone C; the protected area of Angkor Park is Zone D; future urban areas make up Zone E; environmental and agricultural zones are Zone N, and Angkor Park itself is Zone Z. There are general provisions that cover all zones namely issues like road networks and parking.

A NEW GENERATION OF PLANS FOR SIEM REAP:
Between 2004 and 2006, the Japanese International Cooperation Agency (JICA) oversaw the Study on Integrated Master Plan for Sustainable Development of Siem Reap / Angkor Town completed and delivered to the Cambodian government in March 2006. The government partners of the JICA study were Siem Reap Province and APSARA Authority.

The study notes that urbanization is the highest in the northeast parts of the city adjacent to the built of core of the city. The western span of National Road 6, which leads to Siem Reap Airport, is also a high-density area with a mix of new hotels, roadside shops, and residential units with regulation on building setbacks to guarantee future width of road of 50m. Land use, i.e. coverage and floor-to-height ratios and height restrictions, is an important mechanism to regulate urban growth. JICA characterizes regulation as “good” though it notes that construction takes place without consideration of existing neighborhoods or building stock necessitating the provision of comprehensive construction law and its implementation (in JICA 2006c).

To its advantage, the district boasts a number of key qualities relative to its counterparts in the rest of the country. Siem Reap is the host of the World Heritage site of Angkor and as a consequence, the region has received policy support from the national government and

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\(^{12}\) Interview with APSARA Department of Urban Development (July 2008).
technical assistance in regional and urban development. The province is also readily accessible via air, water and land (in JICA 2006a). It’s naturally compact as most of the city is contained in a two-kilometer radius, conducive to sustainability efforts in energy and transport efficiency (JICA 2006c). Siem Reap District is 292.8km² in area (the province is 10,298.9 km²) with an estimated population of 126,600 persons. Accordingly the population density of the district is 432.5 persons per square kilometer in contrast to the province of 74.1; the province total 841,000 (2004 figures in JICA 2006c).

The JICA study is organized around what it identifies as the major issues facing Siem Reap: 1) Siem Reap’s overdependence on mass tourism, 2) the lack of trickle-down benefits from the tourism industry, 3) the absence of urban amenities, 4) sustainable future growth, 5) insufficient urban infrastructure particular in terms of water and sanitation, and 6) limited local capacity to manage development. The plan established a strategic vision for Siem Reap with plans that correspond to each of the six issues identified above.

The objectives proposed correspond to these issues. They are: 1) up-market tourism development, 2) localizing the economic benefits of the tourism industry through agricultural development and product design, 3) environmental sustainability, 4) environmental-friendly projects and eco-tourism promotion, 5) a stronger local administration and 6) public-private partnerships. Priority projects were also defined according to their level of importance and urgency.

The objective of urban development is to create a suitable urban environment for tourists and residents alike and to enhance the city’s endowed compactness for efficiency in both growth and the economy. It identifies the Old Market area as an important heritage district and notes that infrastructure must be properly upgraded and public areas transformed into urban parks. Emphasis is on wide-reaching beautification of the town, its densification and the provision of infrastructure, as well as cleanliness and comfort for both tourists and citizens.

Implementation of the master plan presupposes governance reform or the proposed Organic Law. The study master plan accordingly proposes a prospective reorganization of the province to enhance its urban management capacity through proper budgetary allocation and financing, including the formation of the Development Committee for Siem Reap that will evaluate projects and coordinate ministries, donors and investors operating in Siem Reap. The master plan was developed by two Japanese consultancies, Nippon Koei and Kokusai Kogyo. A JICA urban management advisor has been assisting Siem Reap Province since May 2008 to implement the master plan. Indeed JICA’s work in its present form is a preliminary study that requires official adoption by local authorities. That is, a sub-decree should ratify the plan into law as the first step towards implementation.

The Asia Urbs land use plan (LUP), led by DED (German Development Service) and funded by the Konrad Adenauer Foundation (KAF), organized a technical team composed of representatives of various local authorities with the plan focused on the district (which excludes zones 1 and 2 and the floodplains of the Tonle Sap). The objective of the project was to produce not only a planning document but to strengthen the team’s capacity in urban planning. With population growth of over 60% expected in the next fifteen years, attention is on the balance between tourism and town development along with private investments, conservation and environmental issues (Asia Urbs 2008).
**Figure 8**: Zoning as defined by the *Plan d’Utilisation du Sol et de la Construction* or Plan for Land Use and Construction, 1999.

**Figure 9**: Zoning in the legal decree proposed by APSARA No. 35 (2002, revised in 2004).
The main principle of the land use plan is to promote sustainable development and to make Siem Reap “a town of water, a green town of culture and education, town of tourism” by encouraging longer visitor stays and by providing sufficient infrastructure. The LUP defines land use categories and related building regulations through a proposed zoning plan for the entire district. Each zone is defined by function and supported by quantitative indicators including indices for site occupancy, floor space, building heights, setbacks and parking standards. Measures for road development include shifting axial or linear roads to a more “reticular” pattern of ring roads. The plan includes developing a corridor linking the town to Tonle Sap Lake for recreation and leisure purposes.

Three basic land use categories are adopted in the plan: urban, suburban and rural. According to the plan, suburban areas, characterized by low-density settlements or traditional Khmer homes on large plots of land, are not viable for future development given their infrastructure demands. Present suburban areas thus must become denser to fall within the compact city model, the ideal type of urbanization promoted in the plan.

In October 2007, the land use plan by Asia Urbis was approved by the District Council. The plan was forwarded to NCDD, which is under the Ministry of Interior. The plan has yet to be forwarded to the Ministry of Land Management which is responsible for its final approval.

13 The three categories employed in capturing land use type – urban, suburban and rural – are defined on the basis of the density of buildings and population. However, these categories appear to be ill suited for Siem Reap. The characteristic forms of the town indeed make it difficult to typify an urban area from a village or rural area. The exceptions are the historic colonial districts comprised of shophouses that are definitively compact and organized around grid roads. Urban form historically has been tied and proximal to rural form. Large green parcels of land, the historic hydraulic system, and traditional houses on wooden stilts continue to coexist with urban types, such as commercial shophouses along the main roads.

14 The plan has to follow the procedure described in the law on Land Management, Urban Planning and Construction of 1994. Interview with Ruth Gruber of the Konrad Adenauer Foundation (August 2008).
Despite a capacity building component in the Asia Urbs plan, it does not specify measures that would allow for greater district autonomy in planning.

To note, the JICA study master plan contains a draft land use plan as well. While both the plans by Asia Urbs and JICA employ the same land use classification system, each proposes different regulations given that collaboration between the two teams only took place at the tail end of the JICA project. Thus another objective of the JICA task committee is to find a compromise between the two LUPs. Iterations of similarly oriented urban plans and various attempts to codify construction highlight a common difficulty faced by each proposed plan – that of implementation. Different conceptualizations of the town in these plans and the actual development of Siem Reap propelled forward by tourism pressures are future avenues of research and policy dialog.

**FIGURES 11 and 12:** Artistic renditions of possible beautification projects in the town center. The image on the left is of a shopping corridor, now the Angkor Night Market. The image on the right is of an urban park (in JICA 2006c: III-1-40).

**THE HOTEL CITY REVISITED**

The Hotel City was first proposed by ARTE-BCEOM in the *Plan d’Urbanisme de Référence* and legally ratified in 1995 (Sub-decree 79/ANKR/PK). At present all that exists of this hotel enclave are roads. The original intention of the Hotel City was to regulate tourism investments and encourage sustainable development. The principle of such an enclave was that hotels located in designated areas along with investments in supportive services would not compete with local needs. Construction guidelines that emphasized vernacular styles would encourage low density and low-rise development. Using local materials and craft labor would accordingly benefit the local economy. While the Hotel City was a strategy to regulate territory and by extension development practices, the ZEMP proposed regulation of investment and administrative practice through a Tourism Development Corporation. The TDC would encourage responsible development in Siem Reap including planning and implementing needed infrastructure as well as attracting high quality developers (Wager 1995b). The tourism board too never fully materialized.

A 560 ha (increased later to 1,007 ha) plot of land was zoned for the construction of up-market hotels with its location in Zone 2 (JICA 20006c). APSARA would be responsible for land acquisitions or expropriations along with attracting investments to the area, including surveying the zone. In 1999 APSARA, with the support of Groupe 8, proposed a new layout for the Hotel City given financing and implementation difficulties of the ARTE-BCEOM plan. The modified Hotel City plan contained simpler design models to give prospective investors greater freedom of choice. The Hotel City was later re-branded the Tourist and Cultural City based on the momentum generated during the December 2000 World Tourism Organization conference in
Siem Reap as its emphasis was on high quality cultural tourism in alignment with ICC and APSARA’s objectives to make Angkor an up-market destination (Winter 2007). Indeed, the first generation of hotels built in Siem Reap contributed to a more integrative urban project with not just hotels but entertainment, recreational and sports facilities.

APSARA proposed a sub-decree following the Groupe 8 project that was last revised in July 2004. In it are indications for a Tourist City that requires a regional environmental and landscape master plan to guide project development. In absence of such a plan, each building proposal slated for this area must be individually evaluated by APSARA. The plan allows for hotels ranked two stars and above (despite the absence of a certified hotel ranking system, JICA 2006), leisure centers and sports facilities in the Tourist City.

Basic infrastructure, i.e. water and electricity, has yet to be built in the area which has discourage prospective investments like high-end hotels that demand the provision of adequate utilities. AFD, in the long term, may provide drainage for the area. In 2001, AFD funded the construction of two roads designed to structure future expansion – a north-south road with its terminus a new entrance to Angkor Park and an east-west bound road leading to the airport. The latter never fully materialized as the Kantha Bopha Hospital was built in the middle of the proposed road. Yet the hospital was on land that was part a state concession granted in 1997.

In 2004, ICEA (Ingénieurs Conseil et Economistes Associés) in collaboration with APSARA undertook a “Project of urban development of Siem Reap-Angkor.” The project was aimed at providing institutional and technical support for the district and for APSARA. In particular its goals were to oversee the drainage system in the east part of the town and to complete a comprehensive master plan for water management in Siem Reap. The project included a proposal for commercial development of the Tourist and Cultural City namely public projects including a textile museum, a new headquarters for APSARA, and a visitors’ center that would constitute the core of this area. ICEA also proposed launching an international competition to determine and select a developer to oversee the operation. Private management of the area was seen as preferable to management by the likes of APSARA given the associated financial risks that would be difficult for a public institution to absorb. The developer would be allowed to manage the area according to market conditions and not state preference. In order to implement this strategy, ICEA proposed that a team of experts assist APSARA in launching an international competition.

**Figure 13**(l): Intersection of the north-south and east-west roads built in 2001 for the Cultural and Tourist City; **Figure 14**(r): Cultural and Tourist City now, northeast sector (Photos by Adele Esposito 2008).

APSARA has had difficulties financing the necessary payouts for expropriated land. And the general laws on land transactions, in particular on expropriation and compensation, have been insufficient. The time needed to identify landowners and to undertake negotiations to acquire
private land has taken longer than originally planned. Currently, APSARA has secured 470 ha of the 1,007 ha. Though it owns all of these hectares by law, the actual acquisition of the land has been more complex. While the authority is legally in charge of attracting and dealing with prospective investors, investors may also deal directly with the Royal Government and the Council on the Development of Cambodia (CDC) normally in charge of large-scale investments. For example, a proposal for a private investment project by a large hotelier has been under review by APSARA though this process has been pending for the past two years though the review process under the CDC is 45 days (see Box 2).

**CONCLUSION**

This chapter outlined various iterations of plans for the region that could be grouped into these cohorts:

1) The Zoning Environmental Master Plan that followed the listing of Angkor was favored among the plans proposed. This plan led to the promulgation of a sub-decree establishing five zones of protection though the sub-decree zones differ from those set out in ZEMP.

2) The urban development plans by French groups ARTE-BCEOM, Détente, Score and GIE Villes Nouvelles which, in the face of future tourism and urban development, proposed a comprehensive strategy for city and regional management that included a zoned Hotel City. From these proposals, only the Hotel City was adopted in a sub-decree that established a land reserve in the northeast of town. The Hotel City has yet to take form though APSARA is in the process of consolidating land parcels.

3) Attempts to create an urban regulatory framework as proposed by the French team Groupe 8 in collaboration with APSARA. The regulatory provisions first introduced in the ARTE-BCEOM land use plan were readapted to the changed conditions of the city. While several draft sub-decrees on urban regulation were submitted by APSARA, none were promulgated by the Royal Government.

4) The most recent generation of plans includes the study master plan by the Japanese International Cooperation Agency undertaken between 2004 and 2006. This period also saw a district-level land use plan developed as part of the Asia Urbs project. Both plans are awaiting approval. Meanwhile, a committee has been formed to implement the master plan, presided over by JICA’s urban management advisor. The committee includes the province and involves APSARA and Siem Reap district.

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15 Interview with APSARA Department of Urban Development (July 2008).
An emerging economy, Cambodia is a frontier market sheltered from the ongoing global credit crisis crippling the U.S. and more profitable than the diminishing returns of developed markets. China, South Korea, and Malaysia have poured investments totaling $2.6 billion in 2006 from $340 million in 2004 according to the IMF. Advantages of investing in the economy are numerous: most industries (excluding land) can be 100% foreign owned with generous incentives including nine-year tax breaks. Moreover, repatriation restrictions and price controls do not exist. The dollarized economy allows for unrestricted capital movement with the absence of foreign exchange controls. Dollarization, a legacy of the destruction of financial and economic institutions during the 1970s and the arrival of UNTAC in the 1990s, lowers the risk of devaluation of the local currency, the riel, which is a boon to investors (Economics Today, 17 December 2007). Despite these advantages, there are drawbacks including legal frameworks (i.e. lack of some key commercial laws), unpredictable legal implementation and enforcement, the high cost of operational and sunk costs, and a lack of investment financing though the stock exchange is expected to open in 2009 (in DFDL 2007). Per the 1994 Law on Investment, the Council for the Development of Cambodia (CDC) chaired by Prime Minister Hun Sen and other high-ranking officials is responsible for the evaluation and approval of all projects related to rehabilitation, development and investments. Investment applications submitted to the CDC are reviewed with a 45-day turnaround.

Land is the most productive asset and means of accumulated wealth in the country with roughly 70 to 80% held in the form of land (Sik 2000, Pel et al. 2008). According to the classification system set out in the 2001 Land Law, there are three types of land:

1) **State public property**: any property of natural origin (i.e. forests and bodies of water), property developed for general use (i.e. quays, railways, airports), property for public use (e.g. roads, public parks), natural reserves, and archaeological and cultural-historical patrimony (2001 Land Law, Chapter 2, Article 15).

2) **State private property**: property that may be subject to sale, exchange, distribution, or transfer of rights as determined by law. It includes property that can be leased or contracted. Starting from the date of the law, encroachment of private land is forbidden. However, vacant state private land may be distributed to persons demonstrating need of land for social purposes as set out in sub-decree (Chapter 2, Article 17).

3) **Private land**

Land is fundamental to development. However state law is not the exclusive reference point around which claims to land rights occur. According to a report by the Justice for the Poor of the World Bank (2008), land regulation has been “most successful when it attempts largely to formalize, rather than radically transform, existing social norms and power relations.” And contrary to common perception, tenure in Cambodia is generally more secure than assumed. While few households possess formal title, claims of general tenure insecurity are hard to substantiate. Insecurity of tenure has less to do with land per se but the vulnerability of population in question who occupy land contested by the state whether informal urban settlements, forests or floodplains. Statistically, less than 2% of plots of land have been subject to conflict and while 49.3% of land plots are reported to have an official certificate of ownership, over three-quarters of plots are used as collateral in loans (Adler et al. 2008 citing 2004 Cambodian Socio-economic Survey).
CHAPTER III

SIEM REAP: THE URBAN ECONOMY IN THE FACE OF TOURISM

INTRODUCTION

Prior to its World Heritage listing, Angkor had been a travel destination for select groups in the centuries preceding it whether French scientists, Spanish missionaries, or Japanese travelers. While the tourism industry developed after independence from the 1950s to 1970s, as it had during the protectorate period, the vestiges of the political-economic turmoil that followed fundamentally wiped out society and economy with effects still tangible today. As the Angkor listing dovetailed with the reopening of the country to the global public, expectations that had been riding high on tourism development have been tempered by the stark realities of a city more characteristically a small town. The economy, and with it the tourism sector, however have been undergoing a revival.

The development that had followed Angkor’s inscription onto the World Heritage list can be periodized in two phases with the first phase between 1992 and 1999 development under the conditions of crisis. These years saw the construction of the first group of hotels and guesthouses accompanied by initial efforts to improve roads and transport. The objective during this period was to literally accommodate an increase in the number of tourists through the provision of basics, i.e. lodging and transport. The second phase of development, which began in 2000, was defined by policy that continued to focus on absolute growth in tourist arrivals though later articulations of tourism strategies have aimed at ways to lengthen the stays of tourists coming to Siem Reap. Risks of a tourism-based economy were made evident from the political and economic disruptions and uncertainty that swept throughout the country following the coup in 1997 and the regional fiscal malaise from the bailouts occurring throughout Southeast and East Asia. Emerging measures in Cambodia have demonstrated the need to create a stronger tourism sector through diversification and to offer creative quality products and services competitive enough to spread economic benefits among the local economy and population.

Because of the primacy placed on the protection of Angkor, with all development in that zone unequivocally banned, Siem Reap has naturally become the hosting site or base camp for tourist-related services and goods. The position of Siem Reap vis-à-vis Angkor, reflected in
Siem Reap: Urban Development in the Shadow of Angkor

stakeholder meetings and evident in construction efforts, falls within the order of functionalism with the town as the place where visitors sleep and eat. This functionalism however does not ever appear to have been the intention of urban planners who sought a comparable level of protection for the town and its heritage as well as for the local practices of daily life from the intrusions of tourism-driven urban development (see institutional geography chapter and Box 1). But there have been shifts in discourse and policy evidencing that Siem Reap is being re-conceived not as a functionalist hosting place at the doorsteps of Angkor but as an urban place in and for itself and a tourist place. This discursive and perceptual shift has had the support of international institutions, government authorities and urban planners.

In also grounding tourism in the political economy of the city and country, this chapter examines the contradictory position of tourism as an instrument of heritage preservation and urban development. Such a position is not contradictory per se when examining the political economy of Siem Reap from the vantage point of sustainability. Sustainability here is defined as the balance between tourism, urban and rural development, and archaeological protection (Wager 1995a, 1995b). Heritage conservation as a means of socio-economic development locates tourism squarely at the center of this approach. Tourism is thus the interface between development and cultural conservation, representing a convergence that is conflicting and paradoxical particularly when it comes to the question of regulation and governance. Nevertheless, tourism in Siem Reap is foundational to the economy on various fronts whether as a primary source of foreign currency or Angkor’s status as a global and national icon.

The institutional geography of the region, the subject of an earlier chapter, is comprised of two regimes of regulation: the strict regulatory apparatus that administrates the Angkor complex and the flexible and ad hoc urbanization of Siem Reap. These two regimes together produce gray zones of governance. That chapter points to the structural and historical basis of this division. Tourism too is seen as divisive whether a threat to heritage conservation (i.e. UNESCO 1993 and 1996 cited in Winter 2007) to be contained, a needed instrument for growth, or best demonstrated in the historic “tug-of-war” relationship between conservationists and tourism promotors (Miura 2004). To that end, this chapter addresses the following issues: 1) the place of tourism in Cambodia’s national development policy since the 1990s; 2) tourism in the urban and regional economy; 3) the development of Siem Reap as a tourist place in terms of facilities and infrastructure; and 4) tourist practices and habits based on surveys conducted among travel agencies and tour operators.

SIEM REAP AND THE POLITICAL ECONOMY

Siem Reap, the capital of the province of Siem Reap, is one of the largest regional cities in Cambodia. The population of Siem Reap District is estimated at 139,556 (2004) and projected to reach 210,643 by 2020 at a per annum growth rate of 2.5 to 2.7%. The urban population is smaller, constituting roughly half of the district. In 2004, this population was 68,583 (all figures in JICA 2006c). The province however is the third poorest in the country in terms of human development based on such indicators as poverty, malnutrition, and access to clean water (World Bank 2007, UNDP 2007, see chapter on infrastructure) in Figure 1.

UNDP explicitly notes that “what is surprising is that Siem Reap does not appear at the top of any of the HD [human development] indicators; the spin-off effects of tourism do not appear to have benefited the local populace (UNDP 2007: 39). A caveat to such an observation is the unit of analysis in the UNDP report is the province. Thus while the urban-rural divide is stark between Siem Reap town and Siem Reap Province, this is a widespread phenomena not isolated to the region or country alone. Moreover, it is difficult to discuss regional versus urban socio-economic constraints and capacities given the scarcity of data though this issue may be alleviated with the release of the 2008 census by the National Institute of Statistics. The tourism
economy is incredibly cyclical with high season from November to March and low season from April to October, creating significant variation in a given year.

Nevertheless, there are some general economic trends worth noting here. Development organizations have argued that economic growth, driven mainly by garments and tourism, is urban centered with limited linkages to the rural economy where 80 to 90% of the population is based (e.g. ADB 2008). The national poverty rate hovers around 34.7% of the population (ADB 2008) with Cambodia’s global ranking in human development 129 among the 177 countries considered (in UNDP 2007). However Cambodia’s economic growth has averaged roughly 9% for the past ten years (ADB 2008) with the 2008 GDP growth rate estimated at 7% (Economic Institute of Cambodia website) in Figure 2 and 3. Indeed, a country’s political economy cannot be reduced to a single figure (Kabeer 1994).

Some general observations also can be made about agricultural productivity of the province which is a dominant economic sector in the region. Agricultural soil is poor, which constrains rice production and other cash crops. There is potential productivity in agricultural sub-sectors such as poultry, eggs and mushroom farming. Though while not constrained by soil concerns, these sub-sectors do not have needed investment support (excluding support from AFD, in JICA 2006c). And while Tonle Sap is a crucial source and site of agriculture, transportation and inland fish production, comprising nearly 10% of the country’s fish output at 34 thousand tons, inland fish is not for export or tourist consumption. Local agriculture is thus not linked to the tourism industry as quality, types and volume of products needed cannot meet its demands (JICA 2006c, World Bank 2003, Ministry of Environment 1998).

Comprehensive employment figures will not be available until the later half of the year as noted above. Based on 1998 census data however, employment in the province has been primarily dependent on agriculture and fisheries though the distribution of non-agricultural employment has been concentrated in Siem Reap District (in JICA 2006c). Industry data indicates that as of September 2004, there were 4,680 employed in tourism with over three quarters of workers in the hotel sector coming from the province (Siem Reap Office of Tourism and ILO 2004 cited in JICA 2006c). Accounting for indirect multiplier effects, an estimated 55,000 are employed in the sector (JICA 2006c). Thus the rural-urban continuum is less likely forged through sectoral linkages and more through personal remittance and economic circuits. Nationally, tourism employs 225,000 representing 3% of total employment in 2005 (in WSP 2008).
Figure 2: Incidence of poverty by geographic region between 2003-2004 (in UNDP 2007).

Figure 3: GDP rates over a decade (in UNDP 2007).

Locating Tourism in Development Policy
With the end of the Vietnamese occupation and the country’s official shift from a state to market economy, tourism was seen as a major vehicle in the country’s reconstruction efforts particularly given the sector’s favorable high rates of return. Accordingly tourism was an identified priority in the first Cambodian Socio-economic Development Plan (1996-2000). Siem Reap-Angkor was a centerpiece of this strategy and the engine to kick-start tourism development throughout the country. But the National Tourism Board at the Ministry of Tourism has not promoted Angkor alone. It has four target categories that include: 1) cultural tourism in Siem Reap and Preah Vihear, 2) the capital of Phnom Penh, 3) the K-4 beaches Kep, Kampot, Kampong Som (also known as Sihanoukville), and Koh Kong, and 4) eco-tourism in the northeast of the country. While a diversified tourism strategy had been part of the national development agenda beginning in the 1990s, tourism development has evolved slower than expected due to the time-intensive nature of infrastructure development which in part explains why Cambodian tourism continues to be centralized in Siem-Reap Angkor.

Tourism continues to be foundational to Cambodia’s national development policy and is one of the four pillars of economic growth along with garments, agriculture, and construction (MPDF 2008). However the joint International Finance Corporation-World Bank Foreign Investment Advisory Service (FIAS) has identified “regulatory uncertainty” as a top constraint to future tourism growth due to the “unclear delineation of responsibilities among government agencies

1 Interview with Ministry of Tourism (August 2008).
that has led to the tourism sector being governed by multiple, and sometimes conflicting, prakas [decisions] and sub-decrees of different ministries and agencies” (in MPDF 2008). Thus the draft Law on Tourism (see Box 2) was submitted earlier this year to establish greater clarity in governance and administration of the sector. Nevertheless, the country hosted one million tourist arrivals in 2000 and reached the 2 million mark in 2007.

Historically, this economic development policy has required that Cambodia re-establish itself to the global public as a politically and economically stable environment conducive to investors and international visitors alike after decades of conflict. Given the state of disrepair of existing infrastructure from years of neglect and instability, private investments were badly needed. The same was true of the road and utility networks, which originally had been under the purview of the government but required development in collaboration with the private and international aid sectors. Thus both public and private interventions have been required to establish the necessary basis for future growth. A measure of stability returned with the national elections and Cambodia’s entry into ASEAN (Association of Southeast Asian Nations) in 1999 (in Ministry of Tourism 2003) that had been momentarily subverted by various political and economic crises.

Box 2
Establishing a Legislative Framework for Tourism

The Ministry of Tourism recently submitted a draft Law on Tourism to the Council of Ministers for approval. The law has two objectives: to promote economic growth and meet private sector demands for a more transparent and predictable legal framework to minimize business risk and encourage greater investment.

Following MPDF (2008), the most salient issues to the development of the sector include:
1. Consultation between the government and the private sector on legal and regulatory issues, e.g. a Cambodia Tourism Marketing Promotion Board; set criteria for issuing tourism licenses and quality assurance standards.
2. Establishing quality assurance systems, including accreditation standards for classifying hotels and tourist services to allow the industry to regulate itself.
3. Defining the role of the Ministry in the development of industry and business associations, and its role in dispute resolution.

Based on this draft law, MPDF recommends that the Ministry refrain from regulating quality through licensing mechanisms. The Ministry should instead regulate the sector for public health and sanitation while ceding quality control to market mechanisms. That is, there is concern that government regulation of quality will likely increase the cost of doing business in the guise of informal charges. MPDF also recommends that the Ministry take no formal role in the internal operation of business associations, which may give the appearance of improper influence and undermine the independence of such associations.

It is in this context that a new group of investments came into fruition starting in 2000 in the form of hotels, restaurants and service providers many of which concentrated in Siem Reap. Cambodia’s public image, as the home of Angkor, became actively mobilized and promoted by the Ministry of Tourism in international circuits, trade expos and media outlets. With this came a widening network of tourism operators who have been instrumental in packaging tours to the region. Transport during this period went through a number of upgrades with significant improvements in air and road travel. Despite original plans to establish a balance between public and private development, most upgrades in infrastructure have come from the private and multilateral aid sectors. The main objective of future development is to promote more equitable and government-financed development.

2 Interview with Ministry of Tourism (August 2008).
TOURISM IN CAMBODIA AND SIEM REAP-ANGKOR

Despite the challenges facing the tourism market globally, the number of international tourism arrivals worldwide exceeded 800 million in 2005 or twice as many as in 1990 according to UNESCAP (2007). Over this period the number of tourists to the Asia Pacific region had also doubled from 85 million in 1990 to 198 million in 2005. The Asia Pacific region represents 25% of the world’s tourism market with China the largest recipient of international tourists in the region with 45 million visitors in 2005 (in Figure 4) and the fourth in the world after France, Spain and the U.S. However those countries with the greatest numbers of tourists are not necessarily those experiencing the most growth (in Figures 5 and 6).

It is Cambodia that has experienced the highest growth in the Asia Pacific region with a minimum per annum rate of 20% between 1995 and 2005 (UNESCAP 2007). Tourism receipts in 2007 amounted nationally to $1.4 billion in 2007 from $1.05 billion in 2006 (Ministry of Tourism 2008). In 2007, tourism receipts accounted for 16% of GDP from 6.3% in 2000 (MPDF 2008). Roughly half of all receipts are from visitors to Siem Reap or $240 million in 2006. While the country’s tourism sector has seen consistent growth since 1993, there have been two notable economic downturns: 1) the years between 1997-1998 due to the political coup and the fiscal crises affecting the region as a whole as noted above; and 2) the period between 2000-2002 during the SARS outbreak and the beginning of the war in Iraq (in Figure 7).

Figure 4 (l): International tourist arrivals.

Figure 5 (r): Tourism receipts as percentage of GDP in Asia Pacific Region in 1990 and 2005 (both in UNESCAP 2007).

3 In 1989 there were 20,000 tourists, 60,000 in 1991 and 90,000 in 1992 (in Wager 1995a).
During the years that ensued, the country rebounded economically with political stability. In 2007, Cambodia reached a milestone with 2 million international arrivals that year. Siem Reap experienced a 36.4% increase between 2006-2007 from 1.7 million visitors in 2006 (cit. in Ministry of Tourism 2008). The region also saw an increase in domestic tourists, with Cambodians comprising half the number of foreign visitors in 2004 (FIGURE 8).

Speaking of foreign arrivals to the country requires greater specificity as the tourism economy of Cambodia is definitively regional. Of the top ten arrivals by country in 2007, 7 of the 10 country markets are in Southeast and East Asia (see BOX 3). Based on interviews with the marketing division of the Ministry of Tourism in Phnom Penh, the ministry began focusing on Asian markets in 2004 targeting South Korea, Japan and China, Hong Kong, Thailand and Malaysia specifically. Japan had been the ministry’s target from the onset of its operations in 1993 and Cambodia’s top tourist market until 2004.

The recent predominance of Korean tourist arrivals to the country is the culmination of older efforts and campaigns by the two countries. The Korean and Cambodian governments held two World Cultural Expositions in Kyungju in 1997 and in Siem Reap in 2006 that involved high-level dignitaries, including the former South Korean president Roh Moo Hyun and the fashion designer Andre Kim. At present there is an ongoing exhibit on the treasures of Angkor, which began in 2005, at the Seoul History Museum. The ministry also has been active in the tourism fairs sponsored by the South Korean government that began in 1999 in cities including Seokjo, Seoul, Gwangju, Jeju, Gangneung, and Gwangju. According to those interviewed at the ministry, there were no Korean tourists to Cambodia prior to 1999.

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<td><strong>TOP 10 MARKET ARRIVALS TO CAMBODIA IN 2007</strong></td>
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<td>Country</td>
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(Source: Ministry of Tourism 2008)

According to Winter (2007), this phenomenon of inter-Asian tourism has exploded in the past decade. The most obvious spatial and geographical manifestation of this phenomenon is the business corridor along National Road 6 with its integrated networks of travel agents, restaurants, souvenir shops, and hotels that target segments of this market. Chartered bus travel and packaged tour schedules determine the space-time dimensions of these tourists’ movements. Though the development along NR6 could be characterized as unregulated (one notable case is a hotel built over an Angkorian canal), this is less specific to the corridor per se. Regulation does take place though its practices are better characterized as piecemeal and contingent given the absence of a promulgated planning strategy for the region (see institutional geography chapter).
DEVELOPING SIEM REAP AS A TOURIST TOWN

Tourism has two basic requirements in order to function. They are transport and hosting infrastructure (i.e. hotels and restaurants) (MIT 2005). Access to Siem Reap was restricted in the early 1990s with the newness of political stability and the degradation of the roads and limited accommodation options. This section examines projects that deal with modes of transport directly linked to the tourism sector, namely the development of the international airport and the future port project on Tonle Sap Lake. The broader issue of roads is the subject of the chapter on infrastructure. Road-based transport represents only a small percentage of tourist travel though the road system has allowed for greater integration of the country in terms of communication and trade. Chartered bus travel, of course, is popular with tour groups though run by private operators. Available data on international tourist arrivals to Siem Reap by mode of transport indicates that most arrive by air (FIGURE 8). In 2004, 70.1% of international travelers arrived by air made possible in part to increase air traffic at Siem Reap Airport. The first half of this section examines tourist facilities, namely accommodations and recreation, as emerging urban architectural forms that play an important role in the transformation and expansion of Siem Reap.

<table>
<thead>
<tr>
<th>International tourist arrivals</th>
<th>International tourism receipt</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thousands</td>
<td>% of GDP</td>
</tr>
<tr>
<td>East and North-East Asia</td>
<td></td>
</tr>
<tr>
<td>China</td>
<td>10,484</td>
</tr>
<tr>
<td>DPR Korea</td>
<td>115</td>
</tr>
<tr>
<td>Hong Kong, China</td>
<td>8,814</td>
</tr>
<tr>
<td>Macao, China</td>
<td>2,513</td>
</tr>
<tr>
<td>Mongolia</td>
<td>147</td>
</tr>
<tr>
<td>Republic of Korea</td>
<td>2,959</td>
</tr>
<tr>
<td>South-East Asia</td>
<td></td>
</tr>
<tr>
<td>Brunei Darussalam</td>
<td>377</td>
</tr>
<tr>
<td>Cambodia</td>
<td>17</td>
</tr>
<tr>
<td>Indonesia</td>
<td>2,178</td>
</tr>
<tr>
<td>Lao PDR</td>
<td>14</td>
</tr>
<tr>
<td>Malaysia</td>
<td>7,446</td>
</tr>
<tr>
<td>Myanmar</td>
<td>21</td>
</tr>
<tr>
<td>Philippines</td>
<td>1,025</td>
</tr>
<tr>
<td>Singapore</td>
<td>4,842</td>
</tr>
<tr>
<td>Thailand</td>
<td>5,299</td>
</tr>
<tr>
<td>Timor-Leste</td>
<td></td>
</tr>
<tr>
<td>Viet Nam</td>
<td>250</td>
</tr>
</tbody>
</table>

| **World** | 436,000 | 540,000 | 867,000 | 806,000 |

**FIGURE 6:** Regional figures on tourist arrivals and GDP composition, 1990 to 2005 (in UNESCAP 2007).

**FIGURE 7 (l):** International arrivals to Cambodia from 1993 to 2007; **FIGURE 8:** Visitors to Siem Reap between 2000 to 2004 (Ministry of Tourism 2007, 2003).
HOSTING INFRASTRUCTURE: HOTELS AND GUESTHOUSES

In the 1990s, the Grand Hotel was the only hotel in Siem Reap as the few accommodations built between the 1950s and the 1970s had been destroyed by the Khmer Rouge or were seriously damaged. The first set of hotels came at the heels of UNTAC, which brought in 22,000 people over a period of 18 months between 1992 and 1993, totaling 424 rooms among 12 hotels in 1994 (Détente, Score, GIE Villes Nouvelles 1995). Siem Reap residents at this time also began to open their homes to foreigners, giving birth to the first guesthouses in the area.

<table>
<thead>
<tr>
<th>Mode of Transport</th>
<th>2002</th>
<th>2003</th>
<th>2004</th>
<th>Cambodian Visitor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phnom Penh</td>
<td>333</td>
<td>315</td>
<td>76,650</td>
<td>29.4</td>
</tr>
<tr>
<td>Direct Flight</td>
<td>202,716</td>
<td>68,5</td>
<td>183,628</td>
<td>70.6</td>
</tr>
<tr>
<td>Subtotal</td>
<td>236,039</td>
<td>65,5</td>
<td>260,248</td>
<td>65.0</td>
</tr>
</tbody>
</table>


Hotel construction undertaken in the 1990s was primarily situated along the city’s main roads along the river, the National Road, Sivatha Boulevard, and Wat Bo Road. By the end of the decade, there were 15 hotels and 40 guesthouses. Building activity intensified beginning in 2000 though it was the period between 2006 and 2008 that is best characterized as a boom. While 49 hotels opened in the five-year period between 2000 and 2005, 56 new hotels opened in the two-year span between 2006 and 2008 (JICA 2005). The rising cost of land and the build up of hotels along the city’s existing major roads prompted investors to plan for hotels behind the first line of roads even in areas that are remote or only accessible by laterite, or clay, roads.

The number of rooms in Siem Reap in 2006 totaled 7,804 (hotels) and 2,722 (guesthouse) or a total of 10,526 rooms. This reflects an increase in the number of hotels given 2004 figures which put the number of hotels rooms at 5,691 and guesthouse rooms at 2,689 totaling 8,380 rooms (in JICA 2006c). There appears to be a saturation of the market given that even during peak season, occupancy rates average 30% during the year and do not exceed 60% even during peak season (2006 figures in JICA 2006c).

<table>
<thead>
<tr>
<th>Year</th>
<th>Hotel</th>
<th>Guesthouse</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Change (%)</td>
</tr>
<tr>
<td>1998</td>
<td>24</td>
<td>-</td>
</tr>
<tr>
<td>1999</td>
<td>28</td>
<td>16.7</td>
</tr>
<tr>
<td>2000</td>
<td>35</td>
<td>25.0</td>
</tr>
<tr>
<td>2001</td>
<td>47</td>
<td>34.3</td>
</tr>
<tr>
<td>2002</td>
<td>58</td>
<td>23.4</td>
</tr>
<tr>
<td>2003</td>
<td>62</td>
<td>6.9</td>
</tr>
<tr>
<td>2004</td>
<td>*74</td>
<td>19.4</td>
</tr>
<tr>
<td>2005</td>
<td>**81</td>
<td>9.5</td>
</tr>
</tbody>
</table>

FIGURE 10: Number of rooms in 2005 (in JICA 2006c)

Considering that hotels are recent additions to local building culture, their proliferation appears to be transforming the traditional urban shapes of the town and have contributed to the process of urban expansion. In Siem Reap, where modernization of the town is principally led by
tourism development, hotels are notable sites of architectural innovation. Some are an international in form referencing architectural models that are shared worldwide. Other hotels take on the task of incorporating local forms and models of construction and to reinterpret them through new spatial and architectural compositions. Hotel construction thus seems to be situated at the nexus of architectural innovation and filtered tradition based on different exigencies and functions.

**Hotels and guesthouses as vectors of transformation of urban form**

This section outlines representative forms in the city with the purpose of highlighting urban production and change in the face of tourism. These examples are by means exhaustive.

*The administrative district*

The progressive transfer of urban service facilities and administration to the outskirts of Siem Reap town has resulted in fenced in lots awaiting sale and development. The hotels in the area reflect low-rise construction on large lots of land that liberally draw upon colonial architectural form. The area however is prone to flooding and sewage backup and requires the restoration of the old roads and footpaths in addition to more comprehensive infrastructure upgrades.

**Figure 11** (l): Day Inn in the administrative district; **Figure 12** (r): Fenced lot available for rent (Photos by Adele Esposito 2008).

*Sivatha Boulevard, eastside*

The swapping of state land in the administrative district will likely have impacts on the edge of Sivatha Boulevard that borders the administrative district. A major road, Sivatha Blvd. is being transformed with the construction of shophouses that have replaced individual homes, shops and public facilities.

**Figure 13** (l): A large hotel forms the center of a courtyard lined on all sides by shophouses; **Figure 14** (r): Shophouses for rent on Sivatha Boulevard (Photos by Adele Esposito 2008).
Urban area southwest of Sivatha Boulevard and Taphul Road
Smaller hotels and guesthouses have emerged from actual residential dwellings. The concentration of buildings have generated “tangled” urban forms as small pathways cut across private properties to access houses set back from main roads. Here, the fences are discontinuous and the limits between private and public uncertain.

The riverfront
The riverfront was one of the first locations of hotel construction. Some are low-rise occupying historical buildings renovated for tourism, or are located in bungalows surrounded by fences. Others, more recent, are higher and massive and tend to compromise the landscape of the riverbanks.

Figures 15 and 16: Guesthouses along Taphul Road (Photos by Adele Esposito 2008).

Figures 17 and 18: Hotels along the river (Photos by Adele Esposito 2008).

Wat Bo Road
Along Wat Bo Road and in the eastern area behind it are local homes transformed to host tourists. Homes of traditional form, namely wooden houses surrounded by dense vegetation, villas and some shophouses built in the 1960s were used to accommodate sectors of the tourism industry. More recently, concrete guesthouses and structures have started to shift the characteristic landscape along the road.

Hotels as “pioneers” of urban expansion
Recently, hotels and guesthouses have been built in areas that are not yet fully urbanized. Their remote location and the absence of urban facilities, as well as the unattractive suburban landscapes they create, raise questions of their success as investments.
**Figure 19** (l): Hotel on Taphul Road; **Figure 20** (r): Soria Moria Hotel on Wat Bo Road (Photos by Adele Esposito 2008).

**Figures 21 and 22**: Guesthouse in Wat Bo area; Road in Wat Bo area with a concentration of guesthouses (Photos by Adele Esposito 2008).

**Figure 23**: Hotel in outskirts of Siem Reap; **Figure 24**: Urbanizing area with strong presence of hotels and guesthouses (Photos by Adele Esposito 2008).
TOURIST ENTERTAINMENTS FACILITIES
In the past several years, investments in the tourism sector have included entertainment facilities aimed at lengthening tourist stays. Such facilities were built according to the demands of the tourism market for sport, commerce, culture and leisure. Two golf courses are now operational – the Angkor Golf Resort in the southwest of the town and the Phokeethra Golf by Sofitel in the northwest. Another course close to Roluos has been proposed by a Korean company and is currently under review by the local authorities. Its proposal includes a hotel, several villas, a field for horseback riding, and restaurants and leisure facilities in an area 1.6 million m² in size.

Other tourism facilities include the Cambodian Cultural Village (CCV) which opened in 2003 by an overseas Cambodian. The village recreates the forms of traditional Cambodian settlements and includes two museums with important historic figures and events. The park appears to be geared toward Cambodian tourists in search of leisure activities.

The Angkor Night Market opened in 2007 in recognition of tourist demand for restaurants and bars, shops and entertainment. The urban retail sector moreover has recently surged and includes the Angkor Trade Center, owned by EFG Co., Ltd. part of RM Asia Group, on the riverside and Lucky Mall, part of the Lucky Market Group, on Sivatha Boulevard which both opened in 2008. The Royal Shopping Galleries on Vithei Charles de Gaulle on route to Angkor Wat, developed by KC Gecin Enterprises, and The Angkor Shopping Arcade on National Road 6 and financed by Canadia Bank are both under construction. These shopping centers target middle-income to affluent local shoppers and visitors (Phnom Penh Post, 21 August 2008).

The Angkor National Museum also opened in 2007. Owned by a Thai company that invested $15 million in its construction, the museum exhibits pieces once held at the Conservation d’Angkor on loan from the government. As a privately owned and foreign backed institution, it seems to be somewhat of a misnomer to call the museum national. The building, located on a parcel of former state land on Charles de Gaulle Avenue, includes a shopping mall and restaurant.

INSIGHTS ON TOURIST PRACTICE
Surveys with travel agents and tour operators in Siem Reap and in Phnom Penh were used to get a sense of the types of products, places and practices promoted and whether tour operators advocate tourists to visit other parts of Siem Reap-Angkor apart from the temples. Surveys were used to determine the kinds of accommodations promoted and based on what sorts of criteria.
Finally they were asked to approximate the average length of stays in Cambodia and in Siem Reap. Some preliminary findings reveal certain trends. Tourism promoters selected capture a representative segment of the industry according to nationality of the owners and of the customers for whom they generally work. Most in the industry specialize in the European-North American-Australian market, or in one Asian country primarily Korea or Japan. The first group appears to be a homogenously construed market and the latter defined by practices specific to provenance.

Cambodia is part of the Southeast Asia tourist circuit that include neighboring countries, Lao PDR, Vietnam, Thailand that are linked by regional flights on Lao Airlines, Bangkok/Siem Reap Airways and Vietnam Airlines. Cambodia is not generally selected as the sole destination but thanks to its rapid development in infrastructure, the trend of choosing Cambodia as a single destination is growing among both European and Asian tourists. Destinations in the country proposed include Siem Reap-Angkor followed by Phnom Penh, Sihanoukville and coastal destinations, and Kratie, Stung Treng, Rattanakiri for eco-tourism.

In the Siem Reap-Angkor region, tour operators propose temples further away (e.g., Preah Vihear, Beng Melea, Koh Ker) and the Tonle Sap Lake with its floating villages. Also, for more adventurous tourists, tours to the countryside can be organized. Also, practices linked to voluntarism are becoming popular including visits to orphanages and local communities, where tourists can volunteer their time or teach English. Of course, these destinations are targeted to a limited group who are generally younger. The diffusion of tourism in Cambodia, as well as in the Siem Reap-Angkor region, has been possible since the end of the 1990s thanks to political stability and the improvement of tourism infrastructures in the country. Prior to this, tourists visited only the most famous temples, and the only tourist destinations in the country were Siem Reap and Phnom Penh.

In Siem Reap town, visits to the pagodas (Wat Bo, Wat Thmey and Wat Athvear) are the most popular as is the Old Market area. The Artisans d’Angkor, which features local arts and crafts, is also a favorite destination among tourists. According to those surveyed, tourists perceive the town as a place for relaxing, shopping, and eating after a day spent at the temples. Not surprisingly, the town offers a range of restaurants, bars, shops and markets. Also new outcrops of practices include arts and cultural exhibitions, cooking lessons and horseback riding.

Travel agents and tour operators work with a limited number of hotels and do not deal with guesthouses. They also operate according to an informal classification system based on self-designation by the owner or evaluation from the promoter. Based on interviews with the marketing division of the Ministry of Tourism, tourists from countries of the North Atlantic and Australia generally stay longer for periods of 5 to 7 days and general travel alone. In contrast Asian tourists travel in groups of twenty or more and stay for shorter periods of time averaging five days and two countries with approximately two to three days spent in Siem Reap-Angkor. Most employ guides who speak their language and such tourists generally travel by private car or chartered bus due to perceived concerns over safety. Most package tour groups stay in hotels and patronize restaurants along the National Road.

**IMPROVING ACCESS: TRANSPORTATION DEVELOPMENT**

Siem Reap is accessible by air, road and water.

- The airport, originally built in the 1960s, is located on National Road 6 eight kilometers from the town center.
- A port on Tonle Sap Lake links Siem Reap to Phnom Penh and Battambang.

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4 Tourism operators interviewed: Siem Reap International Travel, Indochina Services Cambodia, NCI, Cambodian Association of Travel Agents, EHA Travels Hotels Angkor, Korea World Travel Co. Ltd and Destinations Asia.
All of the country’s national roads form part of either the southern corridor of the Greater Mekong Sub-region (connecting Bangkok to Ho Chi Minh City via Phnom Penh) or the central corridor (connecting Lao PDR to Sihanoukville port) (in ADB 2007). Road rehabilitation began in the 1990s after years of neglect (see chapter on infrastructure).

Siem Reap airport was first built during the 1960s by Chinese engineers later abandoned during the civil war from the 1970s and 1980s. The State Secretariat of Civil Aviation (SSCA) was established in 1996 under the Council of Ministers and is responsible for civil aviation policy and regulatory issues. It also operates smaller domestic airports in the country. SSCA used to oversee the management of Pochentong (Phnom Penh) and Siem Reap airports until operations were handed over to Société concessionnaire des aéroports (SCA) in a forty-year BOT (build, operate, transfer) concession.

SCA began managing Siem Reap in 2000 and Pochentong in 1995, and began oversight of Sihanoukville airport in 2006. SCA is a joint venture of the Paris Airport Authority and a subsidiary of VINCI. The concession stipulates exclusive right over operation in the Siem Reap region and a guaranteed internal rate of return of 13.5%. With the assistance of the French government, SCA has injected USD$100 million into both airports with the first payoff expected in 2011. Projects include an ongoing upgrade of Siem Reap’s domestic terminal based on a forecasted inflow of 1.5 million passengers per year (in ICC 2002, JICA 2006c).

Air traffic control is also under a twenty-two year concession to the Thai company Samart through its Cambodian subsidiary Cambodia Air Traffic Services Co. Ltd (CATS). Starting in 2001, CATS has the exclusive rights to develop and operate civil air navigation (Phnom Penh Post 26 July 2008). SCA currently employs 1,300 workers. This figure does not include those working for supportive service sectors involved with the airport.

Access to Siem Reap was previously restricted as the airport was a domestic hub only with all international flights arriving through Pochentong. Government policy required that all travelers enter the country through the capital and then transfer flights to Siem Reap; part of design to disperse tourism and overcome the lack of facilities in Siem Reap (Wager 1995a). This policy changed in 1998 when the Royal Government of Cambodia established the “Open Sky Policy” allowing direct flights from abroad (in Pel et al. 2008). There are continuing concerns – both economic and structural – about international flights to Siem Reap given the vulnerability of the monuments in the archaeological park susceptible to vibrations from aircraft and the concentration of single-destination travel to the region as Siem Reap is the main pole of tourism to Cambodia. The Open Sky Policy was prompted by the political instability caused by the 1997 coup that made Pochentong airport unsafe leading to the first direct flight from Bangkok in 1997. In order to protect international tourism to Angkor during this period, Bangkok Airways was authorized to fly directly to Siem Reap.

In the early 1990s, UNESCO and ICC had recommended that the airport be relocated from its current location given the structural risks cited above. While plans were initiated to build a new airport further south closer to the planned Hotel City, they faced a significant hurdle when a $35 million loan from ADB was approved in the late 1990s for the expansion of the existing airport (Wager 1995a, Winter 2007).

Moreover, actualizing a new airport further away from the town would take ten to fifteen years with studies, financing, and construction costs amounting from between $380 to 400 million. Thus the question appears to be not whether to build a new airport but how to develop the existing airport with one constraint – no flights over the archaeological zone (in ICC 2002). Despite posing tremendous constraints on capacity, the airport can be expected to handle 2.5
million visitors yearly. The number of visitors may exceed the cap needed to protect the archaeological park taking into account that the Ministry of Tourism forecasts this figure at 5 million visitors per year. However this growth potential, and the balance between the number of arrivals and air traffic volume, also depends on the average length of stay of the average visitor (in ICC 2002). In 2007, the airport received 1.7 million passengers.

Siem Reap’s location as a node within regional Asian travel (see Figure 27) is due to its 4C status under the International Civil Aviation Organization Office, which means that it can accommodate A320 and B757 aircraft. Only with special authorization can the airport receive B757 (JICA 2006c).

There are three types of air travel to Siem Reap:

1) As a smaller regional hub to large Asian cities that receive international tourist flows, i.e., Singapore, Bangkok, Ho Chi Minh, Hanoi and Kuala Lumpur.
2) Part of the direct circuits connected to cities in Korea, China and Japan; or popular points of departure for tourists coming to the region.
3) Part of the heritage circuit that includes towns such as Chiang Mai and Luang Prabang.

At present, the government seeks to develop three international airports in Siem Reap, Phnom Penh, and Sihanoukville in order to ease air traffic pressure in Siem Reap and to facilitate a wider spread of tourism.

**Port Projects for the Tonle Sap**

The port of Chong Kneas on Tonle Sap Lake has historically been the entry point for travelers to Angkor beginning in the 19th century. Now, the small harbor ten kilometers south of Siem Reap is used as a depot to transport fish from the lake. It is also an entrepôt for cargo including fuel as well as for passenger traffic to Phnom Penh, Battambang, or other tourist destinations around the lake including flooded forests, the wetlands, the floating villages and the wildlife sanctuary at Prek Toal. In 2002, 110,000 tourists visited Chong Kneas for trips on the lake. In the same year, 56,500 long distance passengers used the harbor facilities. Estimates forecast 534,100 tourists and 220,400 long-distance passengers by 2018.

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5 Interview with the Civil Aviation at Siem Reap airport, July 2008.
The existing landing facilities are rudimentary made primarily of a single ancient earthen embankment and channels. Activities at the landing move 5 to 6 kilometers during the course of the year between the water’s edges to Phnom Kraom. Phnom Kraom is a steep hill that rises some 140m above the surrounding land with an early Angkorian temple on its summit and a community at the base. When the water is at its highest, the phnom is almost entirely surrounded by water. It is linked to Siem Reap by roads comprised of raised embankments.

Approximately 1,150 households live in Chong Kneas according to an informal government survey done for ADB-Placenter. Many live in houseboats or in raised thatch and bamboo homes that can be moved according to the changing levels of the water. When the water level is at its lowest between April and May floating villages can be found on the open lake. The vessels are unable to negotiate the lower reaches of the Stung Siem Reap with loading taking place on shore. When the water level is at its highest between September and October the villages move towards Phnom Kraom. The majority of the population is landless and the community and local environment generally poor.

Presently the earthen embankment performs a number of functions: as the main route for traffic to and from the landing area, a parking area for vehicles, a storage area for goods, the main access point for those who live on the edges of the embankment and a base for commercial activities associated with the landing. This causes frequent congestion on the thoroughfare.

In 2004, a technical assistance project by ADB with financing from the government of Finland aimed at the environmental improvement of Chong Kneas through:

- Construction of a new 45ha harbor to replace the existing landing facilities.
- Management of a 70ha plot of land on which the population, or 1,250 households, of Chong Kneas could be resettled after the construction of the new port to include utilities and social facilities. The land would be state owned and managed by a public entity created for that purpose with long-term leases of 99 years granted to relocated households.
- Social development measures for assisting the population (in Placenter 2004).

**Figure 28:** The road from Phnom Kraom to Tonle Sap, freshly tarred by Sou Ching Enterprise (Photo by Adele Esposito 2008).
**Figure 29** (top): Proposed harbor layout.

**Figure 30** (bottom): With layout of settlement (Placenter for ADB 2004).
The project objectives were two-fold: to improve the conditions of life of the resident population and diversify tourism through the construction of a new harbor and waterfront area. The executing agency for the implementation of the project was to have been the Ministry of Public Work and Transports for harbor construction and the Ministry of Land Management, Urban Planning and Construction for the resettlement of the population. An environmental impact assessment was completed, taking into account 1997 Tonle Sap’s status as a biosphere reserve by UNESCO.

Both the harbor and the resettlement were planned to be built at the base of Phnom Kraom. As notable from Figures 12 and 13, each household would receive a parcel of land in effect marking a shift in the nomadic fishing practices of the community. At present, the project does not appear to have been implemented nor are there any indications on what the authorities plan to do with the project in the foreseeable future. Another project proposed for the port does appear to be underway: the $2 million project to be built by Sou Ching Investments Co. Ltd, a Cambodian company with South Korean backing. The Council for the Development of Cambodia approved the port project in May 2007. This project too proposes a new harbor and tourist attractions along with the expansion of roads and canals.

The project has garnered controversy. Earlier this year, 300 families living along the embankment were evicted by district authorities with little due compensation (Phnom Penh Post January and April 2008). Construction efforts also have posed obstacles to the business activities of the 220 locally-owned boats that bring tourists to the Tonle Sap.

The ADB project seems to have been put on hold despite the advanced stage of negotiation between the aid agency and the government. Unlike the ADB project, the Sou Ching project does not contain stipulations for community protection or environmental safeguards for traditional forms and landscapes.

CONCLUSION

This chapter highlighted issues related to the rapid development of Siem Reap as a host of the tourism economy, specifically from the point of view of transport and facilities upgrades. The tourism sector requires proper grounding in the political economy and accordingly the chapter underscored some key development indicators that provide segues into important issues of urbanization, economic growth and poverty. The chapter also touched upon the regional nature of the tourism economy along with its definitive urban and spatial forms, in addition to a preliminary overview of tourist practices in the region.
Tourism in ASEAN Countries
The Association of Southeast Asian Countries (ASEAN), established in 1967, is comprised of ten countries with the goal of accelerating economic growth, social progress and cultural development while also promoting peace and stability in the region. Cambodia joined ASEAN in 1999. One of the main areas of cooperation of the association is the tourism sector with all member countries making up “ten perfect-paradises” of the region.

The recent ASEAN Tourism Conference in Bangkok held in January 2008 highlighted a strategy to recast the region as a complete unit and tourism a unique and diversified product. Uniqueness would derive from each member-country’s shared policies on regional air travel that would facilitate intra-regional movement as well as the diversity embedded in each target destination. In other words, the ASEAN tourism market would be both cooperative and competitive. From a conceptual point of view, emphasis is put on two apparently contrasting concepts – the “homogeneity” of this community of Southeast Asian countries and the individual identities of each of its ten members.

With the ASEAN strategy, what appears to be promoted is not the product itself (i.e. services and facilities) but the image of diversity in cohesion, crucial to the success of tourism strategies in the region. Logistical considerations aside, establishing mental connections between visitors and place appear tantamount to this campaign. Accordingly, slogans are used to convey the richness and diversity of ASEAN destinations. Cambodia is the “home of world heritage” with Angkor its highlight; a contrast to the more general if not vague slogans for Laos, “the jewel of the Mekong” and Brunei, the “kingdom of unexpected treasures (in TDRI 2008).

Mekong Tourism Development Project
A less strictly commercial endeavor is the Mekong Tourism Development Project (MTDP) of the Asian Development Bank. The project recognizes that tourism to the larger Greater Mekong Sub-region (Cambodia, Lao PDR, Vietnam) has become multi-country, and that each country’s tourism sector can only remain competitive in the world tourism market through strong regional linkages by promoting “one holiday, several destinations” type of tourism. MTDP’s aim is poverty reduction with its specific objectives sustainable tourism in the lower Mekong basin through infrastructure improvements, community and private sector participation, and sub-regional cooperation via tourism marketing and promotion boards (Ministry of Tourism website, www.mot.gov.kh/mtdp/index.htm)

GTZ, the German development agency, is responsible for a rural and economic development program, “Regional economic development: Green Belt Siem Reap Province, Cambodia.” The program addresses poverty in the province, which is among the highest in the country in spite of international tourism.

The project aims at meeting sectoral demand for vegetables, fruits and handicrafts by cultivating local markets and products and contains several strategies for developing and promoting local products.

At present, these goods are imported from Thailand and Vietnam with some handicrafts coming all the way from Nepal! The current market conditions indicate a mismatch between supply and demand with the poor excluded from the benefits of tourism revenues. This project is part of the Pro-Poor Development Fund established by the government in 2006, which aims at making tourism revenues of Siem Reap-Angkor available for pro-poor development activities. However, the percentage of such revenues has yet to be defined.

CHAPTER IV
THE CULTURAL ECONOMY OF HERITAGE IN SIEM REAP

INTRODUCTION

The temples of Angkor are an unambiguous testament to the preeminence of Khmer-Cambodian culture and its heritage. An ambiguity, both conceptual and practical, on the other hand characterizes heritage non-monumental in form, namely Siem Reap’s cultural urban geography. Unlike Angkor, it is not vetted or underwritten by the international community. UNESCO’s prerequisite for World Heritage status is that the site demonstrate “outstanding universal value” which takes a particular cultural-national-historical production and gives it value and force in the global domain. Scholarly work has argued that such heritage debates are squarely located in modernity and its territorialization, and in the longer history of the civilizing imperium of the west. Heritage is thus an object as well as a relation, part of the economy of representations, its power vested in the performance of space (Mitchell 1991, Gregory 2004, Said 1978), and thus another vector of the built environment and the urban capitalist economy. Yet everyday heritage is less about architectural preservation and perhaps more about ways of building or organizing space according to ethical-religious beliefs and economic needs. Unfortunately, present challenges associated with accelerated urban and tourism development compromise the understanding of these practices. Such challenges, however, do raise important questions about history as a terrain of discourse, and heritage managed and produced by and for particular groups of people.

This chapter locates urban heritage under Angkor’s shadow and examines the primacy of Angkor in heritage awareness. The second part of this chapter deals with the history of management of the Siem Reap-Angkor region, with a particular focus on urban heritage. The third section focuses on how heritage has been understood by planning experts working on Siem Reap since the 1990s and by the private sector. The aim of this chapter is to provide insight on Siem Reap’s urban heritage as demonstrated in restoration and heritage promotion efforts, particular the re-conversion of spaces for the tourism economy.

PART I
SIEM REAP: THE SMALL TOWN AT THE DOORWAYS OF ANGKOR

Research on the Siem Reap region has historically focused on Angkor, the “spectacular remains of a series of metropolitan cities” (Wager 1995b: 419) built between the 9th and 13th centuries, though oftentimes to the exclusion or marginalization of Siem Reap. Some have argued that this disembeddedness has historical precedence with Angkor treated as a discrete entity outside its temporal-spatial location (i.e. Winter 2003, Miura 2004, Edwards 2007). The early “emergency” conservation mandate of ICC and ASPARA, moreover, gave conservation priority over urban development with site management, architectural and archaeological restoration dominant on the agenda throughout the 1990s.

Angkor was instrumental in the colonial imagination with its emphasis on science and empirical scholarship, which later underwrote France’s aim to administrate the region politically and economically (Edwards 2007, Winter 2003). It was likely also the main impetus in the founding of École Française d’Extrême-Orient (EFEO) in 1899 (Dagens 1995, APSARA website). EFEO has since conducted comprehensive restoration and documentation projects, expanding international knowledge of Cambodia’s heritage (Wager 1995b). Scientific interests were later consolidated territorially with the Franco-Siamese treaty prompting the redrawing of the boundaries of the French Protectorate of Cambodge giving France full administrative control over Angkor. Thus while Cambodge became part of the French Protectorate in 1863, Angkor was only incorporated in 1907. The treaty also allowed EFEO to create Conservation d’Angkor, the Angkor Conservation Office, in 1907 (in Wager
Parc d’Angkor was established in 1926 (1925 in some accounts) managed as such by the French until 1972. It was the first park in Southeast Asia to be based on the French law on historical monuments of Indochina; a model that gave new meanings to museums as instruments in public education. Angkor in this case was a kind of open-air museum (Miura 2004). This separation of Angkor from its region then has had historical precursors in the French colonial era with administration established specifically for Angkor’s conservation (Winter 2003). This distinction, implicit or not, between archaeological, religious, and architectural ensembles as heritage sites versus vernacular architecture is endemic in the Asia Pacific Region according to the 2004 ICOMOS report, “The World Heritage List: Filling the Gaps – An Action Plan for the Future” (in Taylor and Altenburg 2006).

Institutionally and politically, knowledge of the region has then looked to the past concentrating on Khmer civilization, art and architecture, and the design of cities of the Angkorian and pre-Angkorian period. The inter-connection of relationships between the past, present day Siem Reap, and the sustainability of the region’s future development represent the complex problem of living with heritage (Miura 2004, Fletcher et al. 1997). The seemingly non-contiguous boundaries between Angkor and the city have historically paralleled divisions in conservation and economic development efforts if not in scholarship.

When historicized, this division can be in part attributed to the primacy of Angkor with its grandeur institutionalized in various circuits of power and interests beginning with its purported “rediscovery” in the 19th century by French botanist Henri Mouhot. This marked the beginnings of a narrative that framed Khmer civilization as vanishing, more acute in the hands of Cambodians who were considered its undeserving if not illegitimate heirs (Edwards 2007). Mouhot travels to Siam, Laos, Cambodia, sponsored by the Royal Geographic Society in London, was serialized over fourteen weeks in the French magazine Le Tour du Monde. While originally written for a French audience, the serial was later translated into German, English, and Italian. His description of Angkor, which he visited in 1860, was of a lost civilization in the “heart of darkness” (Winter 2003). Of course this rediscovery was more political and symbolic, rather than strictly factual as Angkor flourished as a Buddhist sanctuary for centuries (Heikkila and Peycam 2008).

Not incidentally the French sought to consolidate empire in dialog not with the métropole but with Angkor. These motives were not so much about Cambodia per se but reflective of a particular fear of French social decay. This was transposed by the French as an anxiety about the prospective loss of Khmer authenticity. The notion of degeneracy was thus instrumental for bourgeois and colonial empowerment (Edwards 2007, Rabinow 1989, Wright 1991) necessitating new forms of reason and intelligibility. Siem Reap was from this perspective considered an incidental village along the river, reflective of a temporal-spatial division that began in the 19th century positioning an inconsequential present in contrast to a glorious past as cited in various French accounts (Bouillevaux 1874, Delaporte 1880, Loti 1912, Mouhot 1872). Cambodia was perceived as strategically economic as the discovery of Angkor piqued French interests in the kingdom’s alleged riches and the value of the Mekong River as a gateway to China’s southwestern provinces (Miura 2004).

Despite the proximity between the city and the temples, management efforts in the past fifteen years have focused on safeguarding antiquity in ways that have been reactive and defensive to urbanization and population pressures. Nevertheless, the early 20th century also marked the beginnings of Siem Reap’s transformation into a colonial provincial town (Vann 2003) described by French travelers as small and picturesque. What is now identified as colonial architecture was then part of the functional build up of an administration and commerce outpost (see urban history chapter) though the colonial town of Siem Reap could have been a heritage site on its own.
Angkor too serves as a pivot between antiquity and modernity central to nationalist imaginings, as the iconography of Angkor and the iconography of the nation are inseparable (Edwards 2007). This is most obvious in the various iterations of the Cambodian flag; the only flag in the world to contain a historical monument as its centerpiece. Siem Reap too sits at the crossroads of the past and the future though its urbanism has often been overshadowed by Angkor. Somewhat like Phnom Penh which was an experimental site of modern urbanism, its “rebirth” engineered through principles of French urban design and later a site of the post-independence urban renaissance movement associated with the Sangkum Reastr Niyum period (Wright 1991, Igout 1993, Bishop et al. 2003, Ross and Collins 2007), Siem Reap faces the extraordinary circumstances of being a small regional city ensconced in Angkor. This chapter focuses on these tensions.

**ZONING SIEM REAP-ANGKOR: STRATEGIES FOR PROTECTION**

While Angkor is subject to a strict regime of protection, the development of Siem Reap hasn’t strictly adhered to the norms scripted in various draft plans. Urban development, albeit fragmented and seemingly arbitrary, has continued apace particularly over the last six or so years. Two regimes of regulation thus appear to fall in line with a much older division between: major heritage, duly protected, and minor heritage of the town that continues to grow unabated. While the temples still remain the first order of concern, the policies of the early 1990s have made explicit linkages between heritage preservation and economic growth through the development of the tourism sector. But before addressing more recent efforts, this section takes a look back at the very start of conservation efforts in Angkor.

With legal limitations to protect cultural property and the lack of planning to regulate activities around Angkor, in 1989 the Supreme National Council of Cambodia made a request to UNESCO to coordinate assistance for the protection of Angkor (Wager 1995b). This prefaced what was to become Angkor’s listing as a UNESCO World Heritage
archaeological site in December 1992, giving it international visibility as a site of “universal” heritage safeguarded not only by national but international measures as well (ICC 1993). The impetus behind the listing of Angkor was its status as “heritage in danger” or its condition from years of neglect and degradation. As Cambodia had just emerged from a decades-long conflict, international assistance was tantamount to reconstruction taking place in the country as a whole with the signing of the 1991 Paris Peace Accords.

According to Wager, article 3 of the 1972 UNESCO “Convention concerning the Protection of the World Cultural and Natural Heritage” requires that state bodies possess adequate protection and development mechanisms in managing a listed site. Its 1992 operational guidelines on the implementation of the World Heritage Convention moreover require that an overall integrated land-use planning strategy be pursued. It is in this context that strategic zoning and phasing became integral mechanisms in sustainable tourism and economic development including the mandate for institutional oversight by an executive authority; what was to become APSARA and what became the ZEMP study as detailed below (in Wager 1995a, 1995b).

More specifically, Angkor’s listing as a World Heritage site was made conditional upon 1) the enactment of adequate legislation; 2) the formation of a national agency to coordinate site administration; 3) the demarcation of permanent boundaries and buffer zones; and 4) international monitoring and cooperation. Strategic zoning and phasing were designed to equilibrate sustainability between tourism, equitable development and the preservation of Angkor’s environmental and cultural resources. The Zoning and Environmental Management Plan (ZEMP, 1992-1994) was a comprehensive planning study that located the Angkor World Heritage Site in its larger context while providing Cambodian authorities a set of guidelines for zoning and managing the Angkor region (ZEMP 1993). ZEMP was funded by the United Nations Development Program (UNDP) and the Swedish International Development Agency (SIDA) and executed by UNESCO on behalf of the Ministry of Culture. With an interdisciplinary team of twenty-five Cambodian and international experts, the plan had covered the entire province (10,000 km²) in the fields of archaeological heritage, natural resources and human settlements.

**Figure 3**: Protection zones per the ZEMP decree, 1994. Source: Ministry of Culture – UNESCO.
The plan also had defined geographical zones for the purposes of protecting important archaeological sites, historic areas, and cultural landscapes. It also identified the whole province as a zone made up of multiple vectors of the social and political economy. These zones were codified in Royal Decree No. 1 (1994). An underlying principle of zoning was to protect the most vulnerable areas to be buffered by support zones. Zones contained sub-zones, allowing subsets to be effectively managed as units. More broadly however, zoning was seen as a tool to achieve resource compatibility. An outline of the various zones can be found in Box 1.

### Box 1

**Zones and Levels of Protection**

According to Royal Decree No. 1 (1994) article 2, the zoning plan for Siem Reap-Angkor established five areas of protection to control regional development.

- **Zone 1**: Monumental sites
- **Zone 2**: “Buffer” zone or protected archaeological reserves
- **Zone 3**: Protected cultural landscapes
- **Zone 4**: Sites of archeological, historical or anthropological interest
- **Zone 5**: Socio-economic and cultural development perimeter of the Siem Reap-Angkor Region

The combined zones of Protected Archaeological Reserves (Zone 2) and Monumental Sites (Zone 1) define the boundaries of the Angkor World Heritage Site encompassing a 401km$^2$ area with the most important monuments grouped as: 1) Angkor Wat (351km$^2$) and the Western and Eastern barays (or reservoirs); 2) Banteay Srei (20km$^2$); and 3) Roluos in the south (30km$^2$) (see Figure 3). The existing villages located in Zone 1 and 2, allowed to remain, cannot be extended given regulations enacted to control construction activity and village practices. Zone 1 is accorded the highest levels of protection and as state public property, development and construction projects are forbidden (Gaulis 2007, JICA 2006c). Only visits to monuments and conservation projects are permitted. Archaeological reserves are protected from illegal land use and development given the “universal” importance of its areas.

While less strictly regimented, the largest zone identified is the whole of Siem Reap Province, or Zone 5; an optic onto sustainable development for the region. Other zones include Protected Cultural Landscapes (Zone 3) and Sites of Archaeological, Anthropological or Historic Interest (Zone 4). Zone 4 is made up of generally small and freestanding sites important for research, education or tourism and has the same level of protection as the Archaeological Reserves of Zone 2. One of the Departments of Monuments at APSARA is at present conducting field research to mark these sites. Protected Cultural Landscapes are defined according to their traditional features in terms of land use, historic buildings and residential construction. This zone contains significant roads and waterways, including Siem Reap River, demarcating the historic core of the town and the boundaries of a prospective urban heritage protection area. The heritage of Siem Reap is thus intrinsic and expansive, possessing meaningful aspects and historic and aesthetic values (Decree No. 1, Article 5, 1994).
While Zone 3 had not been legally guaranteed protection in the original plan, areas marked as Cultural Landscapes were protected by Sub-decree 79 (1995); the sub-decree which created the Hotel City. In order to properly maintain the characteristics of Cultural Landscapes – their residential features and low-density – the area 500m from the banks of the Siem Reap and Roluos Rivers would be closely monitored. The sub-decree also identified the 250m from National Road 6 (between the southern span of the road to its northern reaches abutting Zone 2) as another urban protection zone. Every project would have to be fully authorized by APSARA. However the sub-decree was suspended in 1999 (JICA 2006c: III.1.30).

Subsequent efforts by APSARA to draft a sub-decree on building regulations have not been successful. None of the drafts have been promulgated by the national government (see chapter on institutional geography). The last draft completed in 2004 has functioned as a de facto set of guidelines used by APSARA in approving building permits. Given that this is a de facto administrative practice, other authorities have not used the same guidelines in reviews of construction permits.¹

**NATIONAL REGULATIONS ON HERITAGE PROTECTION**

Government regulations on cultural heritage protection have existed since 1996. Such regulations contain provisions on the preservation of built heritage in Siem Reap to fall under the jurisdiction of APSARA. Legislation has required the following:

- An inventory of “objects” (a general term that applies to any historical artifact or building identified as valuable) slated for protection.
- Classification and registration of these objects to prevent arbitrary demolition or renovation.

The defined standards of heritage as objects and artifacts have been too broad to be meaningful. While such legislation in spirit promotes heritage protection, no guidelines exist to clarify how such objects are to be selected. Even though heritage protection is ratified by law, there have not been commensurate movements or projects to protect the urban heritage of Siem Reap. Thus while notions of heritage have become popularized and more democratic, practical legal frameworks have failed to follow suit.

Moreover, buildings are not legally vetted as cultural heritage. Building renovations and restorations are however subject to the legal guidelines of Sub-decree (*anukret*) 86 on Construction Permits (1997). The sub-decree stipulates that “reconstruction, expansions and floor additions,” “renovations” and “demolitions” must be authorized by the appropriate authority. In the absence of a land use plan, permit applications are subject to review by the provincial or municipal committee on the basis of general construction rules contained in the same sub-decree. But these rules have been either selectively applied or ignored. According to one survey, renovations of historical buildings are not in accord with the procedures outlined in the sub-decree.²

**CONCLUSION**

As a condition of its inscription, the Angkor region was subject to a comprehensive plan that categorized zones of protection according to each zone’s respective heritage value. Certain zones were accorded value deemed “universal” and affirmed by the international community represented by UNESCO. But zones themselves are not equally universal in their

¹ Interview with APSARA urban heritage department (August 2008).
² Interview with owners and tenants of historic buildings (February to July 2008).
value. Conservation is accordingly based on a hierarchy of normative values that are relational and also economic. In relation to the city, several legislative measures have aimed to properly demarcate urban protection zones. Actual zones created by decree however are disregarded in practice or are too ambiguous to have regulatory teeth. Even with the basic outlines of protected urban zones, procedural norms and practices are not clarified in law. National-level regulation on heritage conservation is too broad in its definition and absent of specificity for actual safeguarding. Thus urban conservation advocates must deal with these regulatory issues before conservation can be an operative tool.

**Box 2**

**Recent Urban Heritage Projects by APSARA**

Two kilometers of the city’s riverfront were earmarked for clean-up by Siem Reap district with assistance from the Association internationale des maires francophones completed in August 2007. This was followed by a beautification project which included installing walkways along the riverbanks (in ICC 2007). Other projects include a botanical garden between Siem Reap and the southern edge of Northern Baray as part of a walking tour (in ICC 2002, 2007).

Different walking tours have been slated for the riverfront area as ways to feature certain landscapes and pagodas. In 2008, APSARA proposed small-scale urban projects such as tree plantings in the historical districts, a wooden pedestrian bridge in the Old Market area, better signage for tourists and improved access to pagodas. These proposals represent efforts to deal with the aesthetics of the city rather than heritage revitalization. Nevertheless, all projects are part of the broader aim to encourage tourists to spend more time in Siem Reap and benefit the local economy (ICC 2006-2008).
PART II

URBAN HERITAGE AND THE CONSERVATION AGENDA

The previous section outlined normative understandings of Cambodia’s heritage along with the legal and policy tools to identify it for protection. This section will examine heritage from the perspectives of other stakeholders (i.e. planners, building owners, residents) as they intersect with urban architectural projects. The economic base of Siem Reap is tourism and the town continuously undergoes changes in the face of its demands. How then is urban heritage perceived by planning experts, business owners and operators who want to maximize the potential of the urban economy through the use of urban space? Or tourists who come to Siem Reap for heritage? How are these perceptions related to heritage awareness? How is heritage awareness of urban and architectural forms filtered by tourist expectation and economic profit?

PLANNING HERITAGE AND CREATING VALUES

Various urban study plans done in the 1990s have foregrounded heritage conservation along with urban regulation. The Plan d’Urbanisme de Référence et Projets prioritaire (1994) by French-based ARTE-BCEOM in 1994 and the 1999 report by Groupe 8 recognized the constitutive characteristics and value of the town. The plans noted that the town possessed low-density traditional dwellings, historic colonial architecture and endowed with dense vegetation and water sources. The aim of regulation, according to these plans, was to control urbanization in order to protect the traditional features of human settlement and practices of life. Urban conservation would be inevitable given the intrinsic value of urban heritage in the face of accelerated tourism development. Indeed, the making of the tourism zone, or the Hotel City, would enable concentrated growth of tourism without taxing Siem Reap.

During this period in 1996, Frederic Mauret conducted an urban study of the Old Market (Psar Char), or the colonial quarter, to examine urban and architectural forms from the French Protectorate period. In particular, his study examined shophouses and several landscape sequences along Siem Reap River captured in his detailed drawings. He too proposed guidelines for the classification of urban heritage (Mauret 1996). In spite of this study, it remains unclear whether any of the buildings surveyed since its completion were ever listed as protected structures. Building renovations are only subject to permit approval and not regulatory oversight, which would undermine protection. Later planning proposals as well as APSARA’s own discourses have more recently embraced the city’s heritage as an engine of urbanism. The river is identified as a central component along with the Old Market district – to be protected and enhanced with trees and pedestrian walkways (see BOX 2) – as well as the ancient canal system and traditional wooden homes. Following this logic, access to pagodas would have to be improved. Together these movements would make Siem Reap a place for tourists to stay for longer periods of time.

If the objective of urban planning and regulation during the 1990s was to protect Siem Reap from tourist development, the current aim appears to be to promote urban heritage for the purposes of tourism. It seems that the accelerated pace of urban development of the last fifteen years has made conservation both a possibility and an obstacle. Tourism development does not outright protect urban heritage and yet urban heritage conservation requires such tourist-based economic pressures. Indeed tourist facilities that should have been isolated away from the town in a separate enclave have reshaped urban and architectural forms. In addition, it appears that local authorities are willing to promote urban heritage to prolong tourist stays. Heritage in this case is not based on any sort of recognition of the city’s values and characteristics though the economic benefits to the national and local economies are crucial. Rather tourism has become the vector of heritage awareness for
local authorities. In the face of budget limitations, urban heritage protection efforts by institutional actors like APSARA depend on an alliance with the tourism economy which is at present the only means it can raise money and accordingly implement needed projects.3

**Urban Heritage in the Tourism Economy**

While certain projects and legislative measures have reflected growing concern over urban heritage conservation in practice stakeholders operate in an ambiguous space characterized by a lack of specificity in protection measures and limited governance structures and capacities. On one hand, urban development has prompted the demolition of a large number of historic traditional buildings (see Figures 2 and 3). On the other, based on interviews, conservation efforts have materialized at the hands of individual owners who have restored and adapted historical buildings to cater to emerging, and oftentimes tourist-related, needs. These projects reflect individual tastes in architecture and design. Yet in spite of the variety of individuals involved, together they share a common concern for aesthetics and economics, designed with an eye towards tourist expectations and urban demands evident in restored colonial buildings and Khmer wooden houses that have become hotels, galleries, restaurants and bars (see Figures 4 and 5).

The Old Market district is the best example of this trend which began at the end of the 1990s. Located in the former colonial quarter, the area’s buildings convey a historical encounter between western aesthetics that are both familiar and strange (Knafou 2005, Urry 2002). Nevertheless, urban heritage in this case is part of the expanding base of the economy driven by accumulation and profit demands.

**Conclusion**

If the normative framework for the protection of urban heritage lacks specific measures for its safeguarding, the urban projects in Siem Reap town reflect a shift in the conception of heritage: from the preservation of urban heritage for its intrinsic value to its valorization for its economic potential and tourist demand.

The latter trend has been supported or stimulated by the private sector as owners, tenants and investors choose to convert historical buildings for tourist functions. The culture of those projects reflects individual tastes on built heritage of the town. This opens up a discussion on what is perceived as “typical” and “traditional” heritage and how each is valorized or remodeled for the tourist gaze.

There are other conceptualizations of heritage. Daravuth Ly, the director of the Reyum institute in Phnom Penh, for example talks less of heritage per se but of the “common” or collective, which include places names that are “landmark[s] of memories” that are not excluded to “obvious symbols of heritage but also places, people and memory” and as “collective memory constitutes a repository of a local urban history” (in UNESCO 2006). A similar idea of heritage is identified in Miura (2004) which in Khmer is *ker morodak* or *ker damnael*. Heritage can mean both collective or personal property or inter-generational legacies. Neither ker morodak or ker damnael differentiates between national, communal, family or individual inheritance. Nor do they include intangible heritage, like folk tales, which are generally referred to as ruoeng. On the one hand, discourses on heritage have treated heritage as more inclusive (one example the concept of “living heritage”) in the work of UNESCO and by scholars while on the other the usage of heritage in political speeches denotes national or collective heritage as captured by the newer Khmer term petekaphoan which is a literal translation of the French term patrimoine.

3 Interview with APSARA urban heritage department (August 2008).
**Figure 4** (top): The colonial cinema in Old Market Area (Photo by Helene Glowinski 2005); **Figure 5** (bottom): The cinema was destroyed in 2006 to make room for the Canadia Bank (Photo by Adele Esposito 2008).
Angkor functions as a major national symbol with its importance to Cambodia’s identity and a site of universal value per the internationally recognized criteria of UNESCO. The grandeur of this monumental site in terms of Cambodian history and national identity has justified the focalization of heritage awareness, and therefore the conservation efforts, on archeological sites given the international recognition of its value. Other forms of heritage, and in particular urban heritage, are not subject to identification, regulations and conservation efforts. This may be justified by a muted awareness of urban heritage in Cambodian culture as traditional values are more linked to the sacral in the organization of human settlements and not necessarily obvious in the materiality of a building. For example, pagodas as structures can be replaced and substituted. However it is the value of place and location that are fixed as sacred emplacement, which is permanent. So the heritage of Siem Reap town, and by extension its material conservation, has been readily identified by planning and regional experts. The impacts of accelerated urban development on heritage have not yet been fully integrated in local strategies. Arguably heritage awareness is linked to economic exploitation. And recognizing different types of heritage depends on the tourism economy and the values promoted by conservation experts and stakeholders in deference to tourist tastes and expectations.

Although Angkor is a unique cultural landscape, it shares the challenges and opportunities faced by other World Heritage sites. Three that resonate particularly with Siem Reap are: Petra, Jordan, the Pyramids of Giza, Egypt and Machu Picchu, Peru. Two major challenges facing all of these sites include: 1) Intensified urban development within and around archaeological sites and 2) physical pressures from direct human interaction with sites that heighten different risks. Pressures stem largely from tourist activities, i.e. walking and climbing ruins, touching bas-reliefs and ancient objects. Indirect tourism-related activities also include retail activities, food services, infrastructure (ex. toilet facilities), and transportation that put pressure on the integrity of site structures (see Box 3).
Inhabited since prehistoric times, Petra (rock in Latin and Greek) is an ancient city carved from sandstone and limestone cliffs in what is now Jordan. Situated between the Red and Dead Seas, Petra served as a historic nexus of the caravan trade routes crossing Arabia, Egypt and Syria-Phoenicia. It was designated a World Heritage Site in 1985. Petra has experienced development pressures, especially after designation, due to a) population growth in the nearby villages of Wadi Musa and Um Sehun; b) increased tourist arrivals from 31,000 in 1966 to 580,000 in 2007), and c) related construction and development.

The area surrounding Petra is not governed by an official land-use plan and thus informal encroachments and unregulated development are common. Demographic and tourism pressures have motivated and exacerbated this development, with implications for the area’s cultural and natural heritage and resources. Over the last thirty years, a major concern of conservation experts has centered on appropriate management of the site though often to the exclusion of local inhabitants. Other priorities, particularly economic development, underscore the complexity of managing heritage preservation and the local economy. Some experts have suggested that an integrated approach between governmental and non-governmental organizations is needed for effective conservation and management in Petra (see Aysar Akrawi. 2000. “Petra, Jordan” in Management Planning for Archaeological Sites, pp. 98-112).

Approximately 2.5 million tourists visit Egypt’s archaeological sites annually. Many begin their visit at the Pyramids of Giza on the edge of Cairo. Each tourist spends an average of USD$1,100; the total which amounts to 6% of Egypt’s GNP. Although money from tourism generates the largest percentage of Egypt’s foreign receipts, conservation experts have expressed concerns about increasing tourist loads. Urbanization pressures, namely proliferation of building projects, industrial quarrying, large-scale land reclamation and nearby irrigation projects, also pose threats to the pyramids.

Villages around the pyramids have also, over time, turned into cities. In 1984, the Egyptian government relaxed height restrictions allowing construction of buildings up to six stories high in the area around Giza, including structures within a few meters of the Sphinx. Government-planned cities, such as Khafrel-Gebel approximately five kilometers southeast of the Sphinx, have entailed extensive facilities construction (i.e. schools, gas stations, retail outlets) that compete for infrastructure and natural resources. Traffic near the pyramids, tourist buses, trucks, and taxis, are the source of increasing carbon emissions. Vibrations from vehicles also threaten the structural integrity of the pyramids (see Zahi Hawass. 2000. “Site Management at Giza Plateau: Master Plan for the Conservation of the Site” in International Journal Of Cultural Property 9: 1-22; Willeke Wendrich. 2005. “Archaeology and Sustainable Tourism in Egypt: Protecting community, antiquities, and environment” in Neville Agnew, ed. Of the Past, for the Future: Integrating Archaeology and Conservation (Los Angeles: Getty Conservation Institute, pp. 184-90).

Machu Picchu, Peru

Machu Picchu, inscribed on the World Heritage List in 1983, stands 2,430 meters above sea-level shrouded by a tropical mountain forest. It was likely the most spectacular urban settlement created at the height of the Inca Empire with its giant walls, terraces and ramps that appear to have been carved naturally from the continuous rock escarpments. Rapid tourism growth at Machu Picchu (from 200 to more than 500 thousand annually over the past decade) has brought with it tourist-related infrastructure (e.g., hotels, railways, shops and restaurants). The growing tourist industry has also been recognized as one of the sources of population growth in the nearby town of Aguas Calientes, its population rising from 500 to 4,000 in the last decade. Increased growth has compounded environmental pressures, such as soil erosion, river pollution, and waste management. Tourism has furthered the social disenfranchisement of Peru’s indigenous communities who are increasingly disconnected from their cultural heritage and have little voice in heritage management policies. The Peruvian government is implementing a master plan for the development of Machu Picchu, though as of yet the plan does not elaborate a sufficiently long-term vision for the conservation of the site specifically in the face of growing mass tourism.
CHAPTER V
URBAN INFRASTRUCTURE AND ENVIRONMENTAL MANAGEMENT

INTRODUCTION
Siem Reap sits at the nexus of the arterial routes National Road 6 and Siem Reap River with the district covering an area of 292 km² (or 112 mi²; comparable in size to Quito, Ecuador) and concentrated mainly along a two-kilometer (1.2 mile) radius. While urban management for a city of this size is not complicated per se, its circumstances are exceptional for it hosts millions of international tourists per year. Historically a regional town, albeit small, it was not until 1990 that its population reached 50,000. It is now the second largest regional city in the country after Battambang (population approximately 196,000). With demographic and urbanization pressures expected to increase in the years to come, infrastructure capacity and facility standards have become prominent concerns since the late 1990s.

Water, specifically, has been a mounting concern as highlighted in various urban plans (i.e. JICA). It also has been prominent on the agenda of high-level meetings (i.e. ICC annual plenary sessions, November 2007 Symposium on the Issue of Water by APSARA and UNESCO) for these reasons: 1) water extraction from the tables beneath the earth’s surface can lead to ground subsidence; 2) ground subsidence is a threat to the structural integrity of the nearby temples; and 3) the topography of the city (mostly flatlands) exacerbates the hydrological pressures of seasonal flooding and strains the town’s drainage networks.

This chapter examines networked infrastructure of the city, and includes national data where appropriate. The strengths that define the city – its accessibility by air, land, and water; its paramount location at the mouth of Angkor; and its unique position as a magnet for policy support from various government and non-profit bodies – also point to the fragility and complexity of balancing infrastructure demands with tourist, residential and geographic needs. To that end, this chapter touches upon the infrastructure question by addressing water production, waste management, sewerage and drainage, as well as public water and roads in relationship to the social and natural geographies of Siem Reap.

ORIENTING THE CITY
As noted above, Siem Reap lies at the center of the north-south axis of the river and a major east-west highway (from JICA 2006c unless otherwise noted). The urban core is oriented where these two axes meet. The Siem Reap River provides a natural separation between the eastern and western parts of the city. The river is 80km (50 miles) long, with its origins Mt. Kulen and its discharge point Tonle Sap, and 20m (65.6 feet) wide. There are two weirs or low dams that regulate river flow – the French weir in the north and the Crocodile Weir in the south. The portion of the river that cuts across town is relatively stagnant. The river is manmade with little known about its flow characteristics (in ICC 2005). The town center is wedged between Sivatha Boulevard and the river that run parallel to the other. Administrative and tourist facilities are concentrated on the western bank, i.e. the Old Market (Psar Chas) and the Central Market (Psar Kandal) districts, as well as the western span of National Road 6 that leads to Siem Reap International Airport. Because the city is bounded by the protected heritage site to the north, agriculture lands on the west, and Tonle Sap to the south, various authorities and plans (JICA, PUR, etc. – for details see chapter on institutional geography) have noted that urban expansion logically should move east. Moreover, the eastern span of the city does not have the kind of water supply of its western counterpart (from the Western Baray); resources better devoted to agriculture. Given these topographic features, it follows that the eastern portion of city is suited for build-up.

Siem Reap Province is part of the Central Plains or the low-lying alluvial plains that encircle Tonle Sap Lake with elevations no greater than 50m (164 feet) above sea level. The town is on land with
minimal gradient and while the city’s topography is conducive to land development – the city’s
gradient is no more than 15/100 (0.15%) – this flatness compounds seasonal flooding from
monsoon rains that fall throughout May to October. Annual rainfall is approximately 1,160mm (63
inches, 2004 figures cited in JICA 2006c). Flooding strains the city’s drainage network, originally
built in the 1960s to accommodate 10,000 residents (in ICC 2007), now used by a population
estimated to be 139,566 (as of 2004). The population of the district is projected to grow to
210,643 by 2020. Population distribution varies throughout the region as it does within the city.
The district population density of 432.5 persons per square kilometer is nearly six times higher
than the average province density of 74.1. Average densities do not capture the number of
international tourists that come to the Angkor region to visit the temples annually. Of the 2 million
foreign arrivals to the country, half are estimated to come to Siem Reap-Angkor (JICA 2006c). Thus
this modestly sized city of 140,000 must accommodate an ever-present tourist population that
fluctuates throughout a given year. While an average population density would be difficult to
calculate given the seasonal variation and geographic concentration of tourists, the infrastructure
question becomes tantamount when considering residential and tourist demands on water.
Conversely, waste production must be considered alongside resource consumption.

In academic debates, infrastructure can be identified as a type of networked technology, its
“unbundling” the current paradigm of urban social change throughout the world (e.g. Marvin and
Graham 2001, Castells 2001). Marvin and Graham (2001) have argued that infrastructure is
splintered, no longer defined by its universal provision, distribution and standardization,
applicable not only of developing cities but in metropolises like New York. Throughout the
twentieth century, economic thought identified infrastructure as a form of sunk capital, best
managed through state monopoly and public regulation given its economies of scale. This practice
was historically predominant in countries governed by Keynesian-welfare nation-state regimes, i.e.
the U.S. and the U.K. Infrastructure in these cases was not only seen as a public good but as the
productive basis of industrial capitalism and the social reproduction of labor power. Infrastructure
includes transport as well which closes this chapter.

The role of infrastructure in capitalist accumulation continues to be crucial to the service economy
and thus in the context of Cambodia has been identified as the basis of social reproduction, not of
labor power, but of tourism; a struggle that takes place not at the point of production but at the
point of consumption (Castells 1983). Accordingly Cambodia is more representative of larger
trends in infrastructure, its provision defined by the logic of privatization and its subsequent segmentation by class and geography. Without taking issues of fragmentation and inequality of access for granted, it is worth noting that infrastructure provision is financially laborious for cities throughout the world though urbanization and growth continue apace. And infrastructure remains key to debates and progressive practices of the environmental sustainability movement. The reconstruction era of Cambodia is relatively young at fifteen years and various authorities are fully cognizant of the need for the proper provision of infrastructure.

**Figure 2**: National environmental map (World Bank 2003).

**The Ecosystem of Siem Reap-Angkor**

Siem Reap town is surrounded by three major poles: Mt. Kulen in the north which have been part of a national nature reserve since 1993, alluvial plains of the ancient Angkorian capitals and Tonle Sap Lake. These poles are interdependent from an ecological point of view and should be so in the case of natural resources management and human settlement. According to an ecological model for the Siem Reap-Angkor region (in ARTE-BCEOM 1995c; Clément 1996c), the region can be divided into several zones according to geology, topography and morphology, flora and wildlife based on the geological features of the soil.

- Ancient terraces, formed by sedimentary deposits, have provided stable foundations for construction and at the same time are a rich source of materials such as laterite, or a type of clay. The Khmers built major temples from the sandstone outcrop of Bakheng mountain, where the soil is constituted by a sandstone layer over five to eight meters deep on a base of laterite or compact clay. The sandstone has protected the temples from the annual movements of the arable layer during the alternating rainy and dry seasons. The base layer also has supported the formation of a superficial water sheet of 1.5 to 3 meters in depth regulated by the system of moats and canals of the Angkor complex. These wet soils, rich in sand, are responsible for the vegetation surrounding the temples called the “temples’ forest” and a host of rich wildlife.

- Young terraces are made up of more recent alluvial deposits and composed primarily of clay. Whether the terraces are alternatively wet and dry according to the season, they are called young dry terraces. In the wild, they would be characterized as semi-dense forests.
But these terraces have been used for agriculture for a long time even if their soil is not very fertile. The town of Siem Reap town is situated in this area. When the terraces are periodically inundated by Tonle Sap Lake, they are called young flooded terraces (Califano 2005) with inundation lasting upwards of five months. Their soils are fertile and have been used since ancient time for the cultivation of rice. The inundated rice fields constitute one of the main resources of Siem Reap-Angkor. This zone should be protected from other types of occupation that could damage the characteristics of the soil or the land use (Clément 1996).

• The Kulen Mountains are important to the ecological equilibrium of Angkor. The ancient Khmers built fences on the mountains’ rivers to regulate flooding and create water reserves.

• The plains surrounding Tonle Sap Lake are inundated for three to four months out of the year when the sheer volume of the Mekong River blocks the flow of the Tonle Sap, reversing the direction of the water (Califano 2005).

**Figure 3**: Vegetation structure in Siem Reap Angkor (ARTE-BCEOM 1995c).

Natural resource conservation requires a system of long-term management. Since the Angkorian period, the canal network and the artificial lakes have regulated an otherwise unstable water system used to move soil deposits and irrigate fields. This equilibrium has always been fragile forcing the ancient Khmers to restore or rebuild the water system periodically (Groslier 1949-1968). Recent development pressures, including water consumption and deforestation, pose a threat to this equilibrium. Tipping the balance will severely compromise the ecosystem and could, in the long term, damage the temples.

**Urban Waste Management**

Municipal waste disposal is a major environmental challenge facing Cambodian cities though the scale of problem is small when compared to cities in neighboring countries (Ministry of Environment 1998: 64). Statistics on waste production vary considerably. Of the purported 536 tons solid waste produced in the city daily, 35% (approximating 187 tons) is hauled away by Siem Reap Municipality (ASPARA report in ICC 2007). The JICA master plan study notes that 94 tons of waste is produced daily with 60 tons (64%) collected and disposed by the waste collection
companies MICC and HCC. MICC operates in areas accessible to its twelve trucks, collecting garbage from approximately 7,000 households in four (of the possible ten) communes. There have been talks with district chiefs to find a solution for areas inaccessible to garbage fleets, including the possibility of pre-sorting garbage to facilitate the process (in ICC 2007). Given these challenges, urban waste management has been among the six priority targets of the 1998-2002 National Environment Action Plan (NEAP) identified according to their significance and relationship to the economy, public health and the environment (in Ministry of Environment 1998). The five-year Socio-economic Development Plan (SEDP) 1996-2000 – its objectives poverty reduction and human development – identified the need for a balanced approach to rural development and development of provincial cities with priority on water and sanitation in urban centers (ADB 2003). SEDP II from 2001-2005 also identified access to water supply and sanitation and promoting sustainable management of environment as key development strategies.

The major cities in the country have witnessed rapid increases in the volume of solid and liquid waste and wastewater management is an urgent problem. For one, many areas of Cambodia's cities, including Phnom Penh, are still without adequate waste collection (WSP 2008, MoE 1998). There are no special dumpsites or other treatment facilities for toxic and hazardous waste and only a few hospitals have on-site incinerators (cit. Office of Solid and Hazardous Substance Management 1999 and 2001 in World Bank 2003). Toxic and hazardous waste is burned at open dumpsites along with solid waste; a public health hazard that could leach toxins like dioxin, a serious environmental pollutant, into soil and water. In addition, the introduction of export duties on recyclable materials, usually sold to neighboring countries, has eroded profitability of the market in recyclable waste resulting in an increase of solid waste that is improperly disposed. There have been reported cases of the illegal smuggling of toxic and hazardous waste into the country as well (in World Bank 2003). Recycling of waste at dumpsites, though preferred, is not feasible given that very little garbage with recyclable value makes it on-site. Prior to waste collection, waste pickers collect recyclables like bottles and cans (in MoE 1998).

The dearth of available data on urban waste management, including the costs of waste disposal and collection in Phnom Penh and other cities makes analysis difficult. However, some studies estimate that waste collection takes from 30 to 60% of municipal revenues in developing countries (citing 1991 World Bank study in MoE 1998). While solid waste management has gradually improved, more work needs to be done (WSP 2008). Designated dumpsites are usually available only in urban areas though existing dumps are not secure from leakage (in ICC 2007). Siem Reap has one 6 to 8 ha (14.8 to 19.7 acre) landfill for solid waste that belongs to a concessions holder, located in Prey Kuy district 8 km east of the city center (JICA 2006c, ICC 2007). The dumpsite was not designed to prevent seepage and there are plans to shut it down. A new dumpsite has been proposed in Banteay Srei including sealing the site to meet environmental needs. Siem Reap District is responsible for supervising the construction of this dump (in ICC 2007). It is common for garbage to be burned or buried in both the countryside and noticeable throughout Siem Reap are unsanctioned neighborhood dumps and garbage along canals, drainage structures, and on the streets (WSP 2008, ICC 2007). Accordingly, the master plan study by JICA identifies environmental sustainability and infrastructure enhancement as key sectors to be developed in Siem Reap.

The variation in the data on the volume of solid waste produced in Siem Reap and other cities in Cambodia is inordinately large even when controlling for margin of error for reasons that remain unclear. Comprehensive data on waste production is necessary for management policy and investment. Some figures on the amount of solid waste produced per day in Siem Reap are noted below:

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1 ADB’s provincial towns project included: Battambang, Kampot, Kampong Cham, Kampong Thom, Pursat, Sihanoukville, Svay Rieng. Selection criteria based on ADB's previous assistance. Siem Reap was not part of project.
Conflicting Figures on Daily Solid Waste in Siem Reap

17 tons (citing 1999 figure in World Bank 2003)
47 tons (year unknown in Ministry of Environment 1998)
94 tons (citing 2004 figure in JICA 2006c)
536 tons (year unknown in ICC 2007)

While a World Bank (2003) report notes that the daily average waste generated in Siem Reap was 17 tons in 1999, it also states that an average of 650 tons of waste is produced daily in main urban centers in Cambodia; a volume amount expected to triple by 2010. The JICA master plan study notes waste volume will triple but not until 2020 from its recorded 2005 volume. As part of its “A more beautiful Siem Reap” campaign, a 2005 JICA pilot project included the installation of 100 garbage bins along roads with high pedestrian traffic. The bins were provided for by the provincial government to be managed by MICC, the district’s trash collector. The dotted lines in the figure below show where bins were placed (Figure 6).

Figure 4 (l): Economic costs of sanitation (WSP 2008); Figure 5: Population with access to potable drinking water, by province, 2004 (UNDP 2007 citing CIPS 2004).

The Economy of Sanitation – Access and Impacts

Part of the Millennium Development Goals includes a target to halve the number of people without access to sanitation between 1990 and 2015. Cambodia’s MDG targets have set lower sanitation coverage thresholds (30% - rural, 74% - urban) though it is unlikely that targets will be reached by 2015 (in WSP 2008). The Council of Social Development established targets as part of the 2002 National Poverty Reduction Strategy that are higher than in the Cambodian MDGs with access set at 40% for rural and 87% for urban populations. According to the 2008 Regional Water and Sanitation Study by the World Bank, the economic costs of poor sanitation in 2005 represented a net loss of $448 million for the country (WSP 2008, see Figure 4). Of this, tourism represented $73.7 million in losses (see Figure 8) and $187.1 million in public health and includes other welfare costs based on data from the Cambodia Socioeconomic Survey (CSES) 2004, Cambodia Inter-censal Population Survey (CIPS) 2004, Cambodia Demographic and Health Survey (CDHS) 2005; each which survey sanitation coverage improvements. Economic loss here is measured as the difference between actual and prospective tourist arrivals and includes other proxies (e.g., duration of stay, prospects of a return visit, lost time and money due to illness from hygiene and sanitation). The definition of sanitation in this particular study is confined to access to a latrine that is considered “improved” only if “it is used by household members and not shared with others, and if the system can separate human waste from human contact” and includes flush or pour-flush facilities connected to piped sewer, septic tank, or pit latrine (WSP...
Access, or lack thereof, can compromise economic productivity and health while contributing to the cost of living, namely expenses associated with water purchased.

Cambodia is predominantly rural with 80 to 85% of the population residing in the countryside. In low-income countries in 2000, an average of 42.6% of the total population (in 1999, this figure was 36%) had “access to improved sanitation facilities” though access rates were greater among urban (70.6% in 2000, 61% in 1999) than rural residents (30.9% in 2000, 24% in 1999). Access rates were considerably lower in Cambodia: 56% of the urban population and 10% of rural population or 17% of total (2000 figures cited in World Bank 2004, 1999 figures in World Bank 2006). In 1999, 53% of the urban and 8% of the rural populations; or 16% of the total had access to sanitation in Cambodia (ibid.). Longitudinal data is scarce and comparative analysis based on data calculated for different points in time is difficult given variant methodologies of the surveys reviewed. While sanitation access appears to have improved between 1999 and 2000, it is modest at best constituting a difference of only a few percentage points. Moreover such a change may have been likely offset by population growth or internal migration. The last National Institute of Statistics census conducted in 1998 contains a category on households with a “toilet facility” within the premises. The category appears to be more restrictive, given that its data shows that 6.6% of Siem Reap Province households had a toilet facility within the premises, or 28.1% of urban and 2.4% of rural households (Ministry of Commerce: National and Provincial Resources Bank).

<table>
<thead>
<tr>
<th>Region</th>
<th>Current tourism value (million US$)</th>
<th>Hotel occupancy rate (%)</th>
<th>Potential value (Million US$)</th>
<th>Attribution to sanitation</th>
<th>Annual economic loss (million US$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cambodia</td>
<td>1,049</td>
<td>54.8</td>
<td>90.0</td>
<td>1,786</td>
<td>10%</td>
</tr>
</tbody>
</table>
WATER ACCESS AND CONSUMPTION

Limited water resources in Siem Reap District represent a major constraint to the development of the area (JICA 2006c) compounded by tourism demands that in the future will outstrip supply. Yet Cambodia is naturally endowed with freshwater resources not only abundant relative to the East Asia Pacific region but in relation to low-income countries globally. The Mekong and Tonle Sap Rivers and Tonle Sap Lake are important sources of freshwater that support agriculture, fisheries and transportation (World Bank 2003). Tonle Sap, critical to the formation of Angkor, holds significant potential as a site of eco-tourism with its biological diversity and its UNESCO biosphere status. The hydrology of the lake allows it to act as a natural flood retention basin regulating floodwater from the Mekong River. Its periodic flooding is key in calibrating the lake’s productivity and is surrounded by floodplains 20 to 40km wide, dotted at various points by rice fields and inundated forests that provide fertile breeding grounds for fish and other animal life (MoE 1998, World Bank 2003). The size and depth of the great lake vary by season. During the dry season the lake is approximately 120km long, 35km wide, and one to two meters deep engorged during the monsoon season to these dimensions: 250km in length, 100km in width and a depth from eight to ten meters to make it the largest freshwater lake in Asia (MoE 1998). The total recorded fish catch from family and commercial fisheries amount annually to 50,500 to 74,700 tons (cited in MoE 1998).

Per capita figures on freshwater resources can be misleading given the population of the country which stands at a modest 14.4 million in 2007 (cit. in ADB 2008). Nevertheless, per capita freshwater resources are as follows (in cubic meters): 8,738 in Cambodia; 5,062 in the East Asia Pacific Region; and 3,456 in low-income countries (1999 figures in World Bank 2006). While freshwater is abundant, access to potable water is not (UNDP 2007, JICA 2006c). Country wide, access to “improved water” appears to be woefully low particularly in contrast to other poor countries. In low-income countries throughout the world: 89.7% urban and 69.9% rural, or approximately 75% of the total population had access to an improved water source in 2000. That same year, 54% of urban residents and 25% of rural residents constituting 30% of the total population had access to an improved water source nationally (cited in World Bank 2004, comparable figures in World Bank 2003). It is unclear from the cited World Bank data on what exactly constitutes “improved water” (UNDP 2007). It appears that figures on water access also vary by water type considered. JICA estimates that 14% of the population of Siem Reap District has access to piped water though local residents can access safe groundwater by hand pumps; 90% of which are deep water wells with depths that range 20 to 30 meters (66 to 98 feet) (JICA 2006c). According to (ADB 2003), only 8.5% of households in provincial towns in the country have access to private or public tap water and 58% draw water from unprotected sources (ADB 2003: 2).

Commercial consumption rates are much higher. While the hotel industry constitutes the largest service sector in the area, the JICA study team conducted a survey in 2005 on commercial water usage patterns. From it, nearly 90% of the Siem Reap hotels surveyed have well water, with 30% connected to the public water supply. Of the 30% connected to the public water network, 17% also have well water supply with the remaining 13% reliant solely on public water (JICA 2005 survey). Public water supply is consistent throughout the year but demand spikes during peak tourist seasons from December to March. The quality and quantity of water drops at the end of the dry season in April. Of those hotels surveyed that use well water, 80% filter and 17% chlorinate water. Daily water consumption among hotels average 2,704m$^3$ or 81,109m$^3$ per month. Consumption spikes to 4,931m$^3$ (or 147,924m$^3$ per month) during peak season. Hotel operators in the survey noted that they consider the price of water expensive at 1,400 riel (equivalent to 35 cents) per cubic meter. However the commercial cost of water appears to be relatively low compared to municipal water rates in other parts of the world. While cross-country comparison

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2 ADB cites that in 2004, 41% of population was using an “improved drinking water source” (cited in ADB 2008).
requires more analytical rigor, to note water rates in the U.S. are 66 cents/m³ and $2.25 in Germany and Denmark (in Earth Policy Institute 2007). Huge differentials persist throughout the world based on various factors including government water subsidies that allow consumers to pay less than market rate. The range of price differentials is striking when considering that for an average American household (whose consumption averages 480m³ per year) water will cost a Washington DC homeowner $350 (equivalent to 72 cents/m³) while buying the same amount water in the “slums of Guatemala” is said to cost $1,700. Actual disparities between countries aside, the market costs of water do vary by type (public versus private water) and location as noted in Figure 8.

**WATER PRODUCTION**

The current water supply system utilizes groundwater from eight deep wells with a daily capacity of 8,000m³. This new system, which began in 2005, increased daily production from two wells with a capacity of 1,500 cubic meters (JICA 2006c) and is a product of the JICA Siem Reap Water Supply Project of 2003 aimed at creating an improved water system for town residents and to serve a population of 26,000 or 4,600 households with group wells, a purification plant and distribution pipelines (in ICC 2003). The JICA Study on Water Supply System of Siem Reap Region notes that groundwater consumption in the district averages 6,115m³ (which peaks to 9,000m³); a daily intake that does not reduce groundwater volume with a maximum 15,000 m³ load (cited in JICA 200c: III-14-10). Due to maintenance problems with distribution pipes, water leakage averages 60% (ADB 2003). JICA reports that between the years 2002-2006, that leakage became less of a problem from an average of 55.1% to 34.6%, which is high.

![Figure 9: Health facilities in Cambodia (citing www.nis.gov.kh in UNDP 2007).](image)

Of the 8,000m³ currently produced daily, 30% goes to Siem Reap town according to the Korean KTC Cable Co. which was recently granted a license by the Ministry of Industry, Mines, and Energy (MINE) to manage the clean water system in the province (in ICC 2007). The company’s own studies identify Western Baray as the best source of water production, given the limits to the quantity of the region’s groundwater, the difficulties of making well-water potable, and the risks of drilling into the water tables. The company predicts that water production can be increased in volume to 20,000m³ cubic meters daily by 2020 at the initial starting cost of $8.5 million (in ICC 2007).

Earlier assessments, in contrast, had determined that the Western Baray could not serve both irrigation and water needs, particularly with its sedimentation at lower water levels (in ICC 2003) and with diminishing supplies due to drought according to the 2005 JICA water survey conducted by SAWAC. Yet a statement by the chair of the Ad Hoc Commission for Western Baray made at
the 2007 ICC plenary session noted that the reservoir is being rehabilitated to bring its total capacity to 62 million cubic meters; the volume necessary to meet the needs of both tourists and residents (in ICC 2007).

In lieu of the Western Baray, groundwater near Tonle Sap Lake was identified in the JICA master plan study as the best source of clean water (JICA 2006c: III-14). Other prospective water sources identified were Mt. Kulen, Northeast Baray, groundwater in the town center, and groundwater near Tonle Sap. Tonle Sap and Siem Reap River did not meet the study’s qualifications of being sustainable or sufficient. Western Baray was also not considered because of its status as cultural property. While the water quality of Mt. Kulen is noted as good, its quantity was is and has value to local residents. The water tables under the city center are not a viable future source given that a number of hotels have already pumped high volumes of water from them with further intake a risk to ground subsidence. Groundwater in Tonle Sap is well-suited for production needs, even during the dry season with its risks to ground subsidence low, making it a logical choice for water resource development.

**Water Quality**

Domestic sewage, commercial waste, agricultural run-off, and untreated solid waste pollute surface and groundwater in the country. Increasing concentrations of coliform bacteria, a presence in water that indicates fecal contamination, represent a serious health risk, especially during April and July. Sedimentation from land clearing, from both commercial and subsistence farming, also contribute to overall decrease in water quality (World Bank 2003). While recent survey samples of groundwater have shown no heavy metal contamination of groundwater in Siem Reap District, iron and manganese content is higher than permitted by the World Health Organization (JICA 2005 survey, JICA 2006). The cause is likely corrosion of iron pipes and pumps. This high iron content, while without direct health effects, does affect taste and color, and is associated with higher cleaning and repair costs. The same survey shows high levels of pH (acidity), nitrate, and fluoride which makes water unsafe to drink without treatment, while shallow aquifers are often contaminated with microbes (JICA 2005).

Siem Reap River and Tonle Sap are contaminated with effluents as both are the final discharge points for the drainage system. The volume loads of these water bodies dilute pollutants that become less harmful to human and animal life. Water quality of water bodies also vary by season and by flood level. However high volumes of feces, urine and gray water are released daily in inland and ground water bodies in the country. There are regional differences in BOD (biological oxygen demand) used as a measure for the degree of pollution (WSP 2008). Siem Reap River contains chemical and biological pollutants due to domestic waste discharged into it, but water can be flushed out with upstream water during the rainy season. The municipality received assistance from Association internationale des maires francophone for a clean-up project of 2km of Siem Reap River with work completed in August 2007 (in ICC 2007).

<table>
<thead>
<tr>
<th>Region</th>
<th>Total release (volume)</th>
<th>Polluting substances</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Feces (Tons)</td>
<td>Urine (m³)</td>
</tr>
<tr>
<td>Pitnom Perh</td>
<td>29</td>
<td>287</td>
</tr>
<tr>
<td>Plains</td>
<td>71</td>
<td>713</td>
</tr>
<tr>
<td>Tonlé Sap</td>
<td>77</td>
<td>785</td>
</tr>
<tr>
<td>Coastal</td>
<td>26</td>
<td>257</td>
</tr>
<tr>
<td>Plateau</td>
<td>31</td>
<td>314</td>
</tr>
<tr>
<td>Total</td>
<td>234</td>
<td>2,335</td>
</tr>
</tbody>
</table>

*Figure 10*: Daily release of polluting substances to inland and ground water bodies (in WSP 2008).
WASTEWATER MANAGEMENT
Municipal wastewater disposal takes place primarily through a network of sewerage pipes that drain into retention basins. Wastewater in retention basins is later pumped out into rivers and lakes and in the case of Siem Reap, all collected wastewater drains into Siem Reap River combined with storm water. Problems with sewerage systems in Cambodian cities include ill-functioning pipes due to poor maintenance and construction. Many are clogged by improperly dumped garbage and infrequent removal of silt contributing to an overall breakdown of the system that increase the risks of flooding during the rainy season. Wastewater that is collected by the city sewer system discharges into canals that can overflow in the low-lying areas surrounding them. And the drainage system, which is designed for storm water, acts as a de facto system for sewage, producing a mixture of sewage and floodwater especially during heavy rains (MoE 1998, JICA 2006c).

Reports on sewerage issues in Phnom Penh are instructive for their applicability to regional cities like Siem Reap, namely that the cost of connection from private homes to the public sewage system is high making it prohibitive for the poor and culminates in human waste discharged in residential areas that eventually make their way through to water bodies (World Bank 2003). Sewage from luxury hotels are properly treated (on-site) though this is less the case for mid-range hotels and guesthouses (in JICA 2005) though on-site sanitation is common with domestic wastewater pre-treated in septic tanks (JICA 2006c). Recommendations in JICA 2005 include pre-treatment facilities for smaller guesthouses and hotels, hospitals and the cessation of waste discharge into the river as well as to strengthen wastewater and solid waste management.

In the absence of a wastewater treatment plant in the district and the inevitability of flooding due to the town’s land gradient, the only viable option is to rehabilitate existing drains and install future ones that better meet the needs of the city (in JICA 2006c). Three treatment options – on-site, clustered, or centralized treatment – were evaluated in the JICA master plan study based on merit and social-environmental impacts. The centralized treatment system was deemed the most suitable for the district center given its population density. A centralized treatment center would require large tracts of land in order to house a water stabilization pond, a viable technology common to developing countries.3

Siem Reap Province received $10.8 million from the American government and Asian Development Bank in 2006 to put in a 10km drainage network in western Siem Reap. Work began in October 2007 to be completed within eighteen months. The same year, the French Agency for Development began a 4.5 million euro project to study sanitation plans in Siem Reap and to lay 17km of primary drainage in the eastern span of the city (in ICC 2007). The drainage project in the east is being undertaken by ICEA, a corps of French engineers, the objective to promote urbanization in the southeast reaches of the city. The funds are modest limiting the scope of the project to a lagoon and canal system that brings water into the river. Drainage then is subject to two separate systems of infrastructure management with discrete objectives, different executing agencies and government counterparts. The ADB project is under the supervision of the Ministry of Public Works and Transport while ICEA is working through Provincial Hall in collaboration with APSARA’s department of heritage promotion. ICEA has raised the issue on the multiplicity of projects and authorities responsible for water management and has proposed a comprehensive water management master plan for Siem Reap district that could be undertaken with a future loan from AFD. The plan would be implemented in coherence with the JICA master plan. The ICEA team also has proposed a water management system for the Cultural and Tourist City. Indeed the lack of basic infrastructure, including water, has been an obstacle to the development of the area. However, there are no funds for undertaking such a program.

3 Other technologies available are aerated lagoons and oxidation ditches.
A wastewater management project was proposed for Siem Reap in 2005 as part of the Mekong Tourism Development Project of the Asian Development Bank in collaboration between JICA and the Ministry of Public Works and Transport. The project is slated for completion in November 2008 with the goal to upgrade tourism-related infrastructure in the city and in particular the central and commercial areas prone to frequent flooding during periods of heavy rainfall. The previous drainage system, the town center drain (TCD), served the town center and areas west of the river and along National Road 6. The TCD received raw sewage, septic tank effluent, wastewater, and municipal solid waste resulting in general contamination and reduced capacity. The rehabilitation of the existing system is to be accompanied by an upgrade of the southwest irrigation canal to join the south ring road around Siem Reap that is currently under construction. The system will be improved by the construction of new interceptor sewers along NR6 and Sivatha Boulevard, a pumping station and an electric generator. Also, a wastewater treatment plant will is slated for a 12ha area in the southwest part of the town.
AIR QUALITY
Data on carbon dioxide (CO$_2$) emissions exists for the East Asia Pacific region as a whole and for other low-income countries as a category but specific data for Cambodia seems to be unavailable (c.f. World Bank 2006). The concentration of nitrogen dioxide (NO$_2$), sulfur dioxide (SO$_2$) and carbon monoxide (CO) in Siem Reap meet Cambodia’s air quality standards (in JICA 2006c). It is unclear if air traffic from Siem Reap International Airport, one of two international airports in the country at present, was considered. Emission is presumed to come from power generators and vehicle traffic given the absence of large-scale industry in the country. And while there is no data on particulate matters (PM) or total suspended particulates (TSP), the district is dusty. Traffic lifts dust off the roads, including ones that are unpaved or under construction. Also because Siem Reap is part of the alluvial plains, sandstone deposits from the escarpment make the surface ground sandy.

ROADS
Over $800 million has been invested in rehabilitating the country’s roadways since the mid-1990s since the royal government identified rehabilitation as a stimulus to sustainable economic recovery. The road network is the principal mode through which people and goods move and covers approximately 39,000km throughout the country. There are seven national roads that make up the primary highways or 4,800km (NR 1 to 7) of roadways. Of this, 2,700km have been rehabilitated. Primary highways split off into secondary highways, also considered provincial roads (demarcated as two-digit figures, i.e. Routes 66 and 63 go through Siem Reap) of which 2% are paved. All twenty-two provincial capitals are connected via the national road network. All of the country’s national roads, moreover, form part of either the southern corridor of the Greater Mekong Sub-region (GMS) which connects Bangkok to Ho Chi Minh city via Phnom Penh or the central corridor connecting Lao PDR to Sihanoukville port. The GMS countries are working to adopt a cross-border agreement to facilitate traffic (ADB 2007, JICA 2006c).

The management of the road network is divided between the Ministry of Public Works and Transport (MPWT) responsible for 11,400km of national and provincial roads, and the Ministry of Rural Development responsible for 28,000km of rural roads (ADB 2007). MPWT and the provincial government are responsible for road rehabilitation, maintenance and new construction.
projects. In Siem Reap, roads are the responsibility of the Department of Public Works and Transport (DPWT), the Provincial Department of Rural Development (PDRD), the provincial government and APSARA. DPWT is the main authority in road rehabilitation and maintenance on national and provincial roads in the province. It is also responsible for city roads with approval from City Hall. PDRD is responsible for roads with traffic volumes of less than 50 vehicles per day as well as all tertiary roads, i.e. inter-village, inter-commune roads, district-commune roads, and commune-village roads. Tertiary roads are in a general state of disrepair though PDRD received funding from ADB for its Northwest Regional Development Project in 2004 and 2005. APSARA manages the road network in Angkor Park and the two major roads in town that lead to it through its two departments: the Department of Urban Development, which works with the provincial government and DPWT on issues of urban road network, and Angkor Conservation Compound which is responsible for road rehabilitation and maintenance. The provincial government is responsible for approving rehabilitation and maintenance plans by DPWT and requesting funds from the Ministry of Economy and Finance.

![Figure 13](image-url): Cambodia’s road network (in ADB 2007).

The conditions on lesser roads can be quite poor with some areas in effect isolated during the rainy season. Many unpaved roads in the peri-urban area of Siem Reap are made of laterite, a reddish clay-like material that is hard when dry and slippery when wet, or macadam, broken stone used in compact layers for road surfacing. Poor road conditions are related to drainage problems that afflict the city. Subsidiary roads, generally narrow and in poor condition, force traffic onto arterials creating bottlenecks at the French Bridge (the intersection of the river and National Road 6) and at the intersection of National Road 6 and Sivatha Boulevard. Future road network planning will be based on traffic loads on NR6, which is the access point for those flying into the city or driving in from Phnom Penh. However National Road 6 is also the only major east-west arterial causing lop-sided development with hotels concentrated along its edges while also the location of the city’s largest market, Psar Leu. There are no road regulations or guidelines for residential areas forcing property owners to build private roads to meet growing needs (in JICA 2006c).
Design problems in road rehabilitation exacerbate existing conditions. According to ADB (2007), roads demonstrate premature defects caused by inadequate pavement design given the area’s climatic and hydrological pressures. For example, unpaved earth shoulders are common money-saving techniques despite recurrent flooding from high precipitation. As a result, hydraulic pressures damage road pavement during floods and heavy rains as water seeps into pavement from road edges. With paved shoulders, water seeps into shoulder which is of lesser concern since it does not carry regular traffic. In the absence of paved shoulders, water seeps into the carriageway damaging traffic-bearing roads. Other poor construction practices include uneven application of spray seals due to badly configured spraying equipment and uneven pavement thickness due to poor workmanship and insufficient quality control. Road rehabilitation thus requires adequate construction standards, work supervision and quality control systems at MPWT, which itself has capacity limits. For example, the ministry lacks the data and expertise that would allow it to prioritize maintenance projects, which is currently done by the provincial government or other line ministries. It also lacks the capacity to monitor road conditions.

According to the World Bank (2006), Cambodia has the highest per capita passenger cars per 1,000 persons. In Cambodia this figure is 25 cars per 1,000 persons, 12 in the East Asia Pacific region, and 6 in low-income countries. This may in part contribute to the increase in fatalities – 18 per 10,000 vehicles in 2006 from 9 per 10,000 vehicles in 2000 (ADB 2007). Traffic deaths are up 11% in 2008 compared with the first five months of last year (716 deaths in 2008 compared to 645 over the same period) according to the project coordinator for the Road Safety Program at Handicap International Belgium. Traffic accidents are the second biggest public health concern after HIV/AIDS according to the secretary of state of MPWT (Phnom Penh Post 28 August 2008). Road improvements and motorization have led to a greater number of accidents and causalities. Most accidents in Siem Reap involve motorbikes, which is also the most popular form of transport. And most motorbike drivers and passengers do not wear helmets (JICA 2006c). Data on the number of vehicles is scarce given the absence of comprehensive traffic counts and the sporadic nature of vehicle registration, which is not enforced despite a 2003 sub-decree. Only 1,903 vehicles were registered in Siem Reap as of 2004 though over 33 thousand motorbikes cross the intersection of NR6 and Sivatha Boulevard in a given day (in JICA 2006c).
POSTSCRIPT

Following an era of centralized state planning, Cambodia liberalized its economy perceived as vital to the reconstruction of the country and for locating Cambodia on the international map. Siem Reap-Angkor in many ways represented the linchpin of these development policies linking economic development to the archaeological site of Angkor.

On one hand, if Angkor has been the object of strict conservation policies since the early 1990s, the region has become a container of private investments, most of them geared towards the tourism economy. On the other, the institutional and legal framework put in place during the 1990s, characterized as a set of gray zones with overlapping domains of administration, compounds the limits of resources and operative tools available for development. As a consequence, such regulatory ambiguity facilitates rather than controls the private sector and the free market economy established by the Cambodian Law on Investments (1994). At the same time, urban planning as a cohesive and comprehensive regime of spatial management has yet to be implemented despite the remarkable number of urban and infrastructure projects proposed during the last fifteen years. Without such instruments of control to orient urban development, architectural and urban growth has increased rapidly since 2000. Indeed, thanks to political stability and the intensification of economic development, investments linked to real estate are seen as safe and profitable. Interventions on this territory – the proliferation of tourism facilities, housing and commercial development – are thus governed by logics other than urban planning that depend on individual strategies of investment.

In this context, few resources are designed for the realization of urban infrastructure that at least could sustain these developments from the environmental point of view. The town develops according to the logic of profitable return and investment while infrastructure is part of sunk capital with high maintenance costs and accordingly time intensive. This mismatch could prove fatal for the sustainability of the whole region. Siem Reap is a host city and a tourist place that should conform to international standards of access and comfort. Yet on the contrary, the city is plagued by seasonal flooding without an adequate water management system and is experiencing growing problems in terms of waste.

If the beginning of the 1990s was defined by the emergency level destruction of the Angkor temples, as raised by the international community, this era marks a new kind of emergency that demands the implementation of urban planning and coordination of projects directed at the town. Indeed, the ad hoc development of Siem Reap that progressively eats away at agricultural lands and natural resources could threaten, in an irrevocable way, the conservation of the Angkor site for which it was “created” as a tourist place. This forum is the ideal occasion for dialog that will determine the future conservation and development of the whole of Siem Reap-Angkor.
Siem Reap: Urban Development in the Shadow of Angkor

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