Stiftung Asienhaus

Development at the expense of the local population

A case study from Boeung Tumpun Lake, Phnom Penh (Cambodia)

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Gefördert mit Mitteln des evangelischen Kirchlichen Entwicklungsdienstes.

Imprint

Title: Development at the expense of the local populations
A case study from Boeung Tumpun Lake, Phnom Penh (Cambodia)
Published by: Stiftung Asienhaus
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Typesetting and layout: Klartext Medienwerkstatt GmbH, Essen (http://www.k-mw.de)
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We would like to thank the residents of the Boeung Tompun Lake, and the participants of the research, for their assistance in providing invaluable information in support of this report.

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Executive Summary

The on-going development of Boeung Tompun Lake area (BTL) in the south of Phnom Penh will have impacts upon local residents' land, livelihoods and tenure security. This research report aims to determine the impact that development is having on BTL residents' living standards and to highlight their concerns for the future.

There is a huge lack of transparency around this development that comes at the expense of the people living in this area. The development is connected to human rights violations (e.g. lack of rule of law, child labour, forced eviction) and thus repeats the same mistakes that were previously made with the development of the Boeung Kak Lake area in the north of Phnom Penh. Until today the investor (ING Holding) failed to properly address requests for information from NGOs and local population.

At 2,500 hectares, Boeung Tompun Lake is one of the largest natural lakes in Phnom Penh and is home to tens of thousands of people. The following report focuses on 13 communities, whose boundaries account for 5,536 households. Filling in this lake has tremendous environmental impact. Together with the already filled Boeng Kak Lake Phnom Penh will miss huge water reservoirs and a natural flood prevention site.

The observation survey in this report found that 46% of development within communities was **partially complete,** with construction ongoing. In another 46% of communities, **no development** was witnessed. Development was **completed in the remaining 8% of communities.**

60% of respondents in the communities' questionnaire were **aware of development,** leaving a significant 40% who indicated that they were not. 57% of those who were aware of development said they were officially informed.92% of respondents who were aware of development were also aware of how the land was to be developed – the most frequent response was condominium development (29%).

When questioned on their **opinion towards the general development of Phnom Penh,** residents responded to indicate that they often don't oppose development – 29% of respondents agree that development is beneficial for everyone in the city. 38%, however, disagree that development is beneficial for everyone. 47% agree, and 8% strongly agree, that development only benefits wealthy people. Of the 19% of people to respond when asked to openly comment on development in Phnom Penh, 25% said people should not face forced eviction without proper compensation.

Since infilling the lake, **general living conditions** for 45% of respondents have remained the same. 29% have reported improvements, and 27% reported general living conditions had worsened. Similarly, 41% of respondents reported their **housing conditions** had remained the same since infilling the lake, but 39% have experienced worsening housing conditions. The deterioration of living conditions is likely linked to the increased severity of flooding in the communities, with 44% reporting that flooding has worsened since the infilling of the lake began.

61% noticed little difference in **income opportunities.** However, of those who reported decreased income opportunities, 17% experienced worse income opportunities and 5% experienced much worse. This could be explained by those employed in the second most common occupation, farming (14%), where infilling the lake has prevented the growing of aquatic crops such as morning glory and lotus. When asked what the **most severe impact** on the community has been since the infilling of the lake, residents' top three responses were: flooding (29%), decreased income (14%), and threat of eviction (9%).

More positively, the study found that since infilling the lake, **relationships within communities** have improved. 42% reported relationships with neighbors were better, while 5% felt relationships were much better. 50% felt there was no change in relationships, and only 3% felt relationships had worsened.

Tables – Figures – Abbreviations

Tables

Figures

Abbreviations

Boeung Tompun Lake	(BTL)
Focus group discussion	(FGD)
Key informant interviews	(KII)
Municipality of Phnom Penh	(MPP)
Non-government organisations	(NGOs)
Semi-structured interviews	(SSI)

Chapter 1 – Introduction

1.1. Introduction

The following report examines the on-going urban development of Boeung Tompun Lake (BTL) and the surrounding area. The purpose of this research is to examine the impact this development is having on the residents of BTL, and report on the most problematic issues facing the affected communities.

BTL is one of the largest natural lakes in Phnom Penh. It is situated in the Meanchey district approximately seven kilometres south of central Phnom Penh This location offers families affordable housing close to the city centre, where employment and education opportunities are typically greater than in Cambodia's rural locations.[1] The Boeung Tompun area is roughly 2,600 hectares in size, which includes 520 hectares of surface water that is used by local people for fishing and growing aquatic crops such as morning glory (water spinach) to be sold at markets.[2] It is home to thousands of families, who have been settling in the area since 1975, and approximately 5,536[3] households in 13 target communities used in this study. Residents have built homes from wood, brick, and concrete, on the banks of the lake or positioned on stilts above the water.

As the area is home to many people and the impact of development in the area will likely affect them, this report has sought to conduct further research into the broader implications of the BTL development. The findings are that the lake area has a continued importance to both people and the environment.

1.1 Behind the Development of Boeung Tompun

BTL and the surrounding land within the Boeung Tompun area is, by law,[4] categorised as State Public Land. The Cambodian Land Law states that "[w]hen State public properties lose their public interest use, they can be listed as private properties of the State by law on transferring of state public property to state private property."[5]

It is now believed that a satellite city will be built in the area.[6] The satellite city will comprise of: residential housing, office facilities, and retail space, offering a "centrally based area that methodically includes all that is required to live a safe, peaceful, and enjoyable life, within the comforts on nature".[7] Development commenced in 2009, and the sand being used to fill in the lake continues to encroach further into the communities. Because of this development, thousands of families could face eviction.

1.2 Boeung Tompun Lake's Importance

Local People

BTL residents have been fishing and growing aquatic crops ever since they began settling in the area. Its importance to residents as a source of income is crucial to its livelihood, where in one community (Prek Takong 1) residents estimate that 70 % of the community depend on BTL for income, earning between 70,000–80,000 KHR (USD$17-$19) per day. However, residents fear the infilling of BTL will negatively affect their income and that they may struggle to find alternative employment. One resident commented that "the farmland is smaller and we can't produce as much. Now the water is little, and it's dirty and smelly, so the crops don't grow as well. I used to be able to earn $100 each time I went to market, but now it's more like $25."[8] An additional consequence of this reduced income is child labour, where families are forced to send their children to work, removing them from school in order to supplement the lost income.[9] With the on-going development of BTL, local families continue to suffer from

1 Rhoads, C. and Odom, S. (2014). As Lake Disappears, a Development Dilemma. Cambodia Daily. [online] Available at: https://www.cambodiadaily.com/archives/as-lake-disappears-a-development-dilemma-62718/
2 Sahmakum Teang Tnaut (2015). F&F#25: Boeung Tompun Lake: A future Unknown. Phnom Penh.
3 Information was obtained via telephone call with local authorities, who completed comprehensive population surveys in 2016 for the communal election.
4 Cambodian Land Law 2001.
5 Ibid, Article 16.
6 ING Holdings Ltd. (2017). Profile | ING Holdings. [online] Available at: http://www.ing-holdings.com/profile.
7 Ibid.
8 Forsyth, L. and Bright, G. (2016). The Vanishing Lakes of Phnom Penh. [online] The Diplomat. Available at: http://thediplomat.com/2016/02/the-vanishing-lakes-of-phnom-penh/
9 Ibid.

Large areas of sand now sit where the lake used to be.

reduced income, and a worsening of living standards as a result.[10]

Environment

Aquatic plants (morning glory, lotus, water lily), are an essential element of filtration in Phnom Penh's wastewater treatment. Wastewater from the city is pumped out to wetlands, such as Boeung Tompun. From there it flows through dense vegetation, which acts as a filtration system, capturing nutrients from the wastewater before it makes its way into the Tonle Bassac River.[11] These natural, "low-cost, effective biological treatment plant[s]," account for approximately 80 % of Phnom Penh's sewage.[12]

Another significant importance of these large bodies of water is their ability to act as natural reservoirs, capable of storing large quantities of rainwater. This helps control flooding within the city centre and greater Phnom Penh, particularly during the rainy season.[13]

1.3 Key Issues of the BTL's Development

Forced Eviction

A 2011 study identified 77 eviction sites from the past two decades in Phnom Penh.[14] This number will continue to increase as development is on-going in the city. The 13 communities situated within the development boundaries of BTL have expressed fear of forced eviction. One community (Prek Takong) had already faced evicted in 2005 and 2006, though having returned to live near the eviction site again, they now face the threat of further eviction.

10 Communities survey 2017.
11 See above n 2.
12 Perez-Solero, R. (2017). The eschatological reality behind Phnom Penh aquatic vegetables. [online] News4europe.eu. Available at: http://www.news4europe.eu/6358_life/4440515_the-eschatological-reality-behind-phnom-penh-aquatic-vegetables.html
13 See above n 1.
14 Sahmakum Teang Tnaut, (2016). Promises Kept? A study on the Development of 77 Eviction Sites in Phnom Penh. Phnom Penh: Sahmakum Teang Tnaut. [online] Available at: http://teangtnaut.org/wp-content/uploads/2016/12/1PK-Final-Report_V12.1_final-edits_formatted518907-1.pdf

Urban poor people are a vulnerable demographic, who have limited skills and resources to negotiate with development corporations and authorities and can also be more vulnerable to intimidation.[15] A 2016 report found that living conditions of people who had faced eviction had, overall, worsened since being evicted.[16] Living environment, flooding, and food security were key drivers reducing living conditions for evictees.[17] Once evicted, communities that are relocated face further hardships, a key one being the distance relocation sites are located from their original homes.[18] Not only are the living conditions often worse, but reduced access to infrastructure and services places further hardships on evictees. Limited access to healthcare and education facilities, employment opportunities and reliance on private water and electricity (that is often costlier than state sources), are all potential issues faced at the relocation sites.[19]

Perhaps the greatest issue with forced eviction is the lack of fair compensation received by those evicted. Often, the evicted families receive little financial, or otherwise, compensation for their losses. The issue of land titling is important in this regard, and even those with official land titles are not guaranteed fair compensation. Toul Sangke A, for example, was evicted and relocated in the north of Phnom Penh in 2008. They had received official land tenure documentation from the Municipality of Phnom Penh (MPP), but received only USD$500 in compensation after being forcibly evicted.[20] In BTL, the lack of public consultation and information has left families in fear of losing their homes, and reports suggest that the construction company has warned families that should they reject the compensation offered to them, they will be forcibly evicted and receive no compensation at all.[21]

Flooding

With lakes being filled-in to satisfy urban development, flooding has been worsening, and is expected to continue to worsen as more of Phnom Penh's lakes vanish.[22] Residents of BTL have been facing increasing levels of stagnant, dirty flood water, endangering their health and safety, and impacting upon their standard of living.

15 Information based on discussion with community residents during 2017 research.
16 See above n 14.
17 See above n 14.
18 Mgbako, C., Gao, R., Joynes, E., Cave, A. and Mikhailevich, J. (2010). Forced Eviction and Resettlement in Cambodia: Case Studies from Phnom Penh. Wash. U. Global Stud. L. Rev. 39, 9(1).; Sahmakum Teang Tnaut, (2012). Resettling Phnom Penh: 54 – and counting? F&F#21. Phnom Penh.
19 See above n 16.
20 Ibid.
21 See above n 2.
22 See above n 2.

Chapter 2 – Methodology

2.1 Overall Method

This report identified the 13 target communities through publicly available information on the development of BTL by the investor ING Holding.[1] Through using GPS technology, the 13 community locations were verified. Exact boundaries, however, could only be estimated since the communities do not possess precise information on the administrative boundaries. 1,800 households within these 13 communities are located *within* the boundary of development itself, while the remaining 3,736 households are located nearby.

2.2 Data Collection Methods

2.2.1 Primary Sources

First-hand information presented in this report has been collected using two tools. These are semi-structured interviews (SSI), and key informant interviews (KII).

a. Observation Survey

Observational surveys were conducted by researchers for each community and took approximately 10 minutes to complete. One researcher completed the 13 observation surveys whilst visiting each community to undertake the communities' household survey. Each survey was completed by walking around the community and noting the observable condition of the community as outlined by the survey questions. Findings were discussed with and confirmed by village chiefs and community leaders.

The observation survey was conducted to assess the physical accessibility of the communities, and the quality of infrastructure by identifying materials used for such infrastructure within the community. It also served to identify apparent environmental hazards as a result of development in the area and aided in developing an inclusive community profile.

b. Community Representative Survey

Prior to undertaking in-depth research in each community, a community representative survey was conducted. This survey took place via a telephone call between one researcher and the community leader or representative of each of the 13 target communities, to obtain an overview of each community.

Given that the questions asked in this survey required an accurate understanding of community details, only the community leader/representative was interviewed, as they were the person most likely to have this knowledge. The survey aimed to identify facts and legal documentation such as: community settlement year, number of households/families, and current eviction status.

c. Communities survey

SSIs were first undertaken at each of the 13 target communities in BTL in order to develop the community survey. This involved two researchers going to each community and facilitating an open discussion with available and willing community residents for the purpose of opening a dialogue between the researchers and BTL residents. Community residents were contacted in advance[2] to determine a suitable date and time for these discussions to occur, which took place in locations convenient to residents within each community. Six key points were focused on for this discussion: opinions on general development; knowledge and awareness of BTL development; general opinions and emotions towards BTL development; community circumstance; community action; and considerations for the future.

A draft questionnaire was then created using results from these initial interviews. This was then tested with three communities (Deum Svay, Prek Talong 2 and Khva) and adjusted based on the outcomes of the interview (i. e. were all questions understood by both interviewer and interviewee, and did the questions yield useful results?). Once the required adjustments were made and a final version completed, a team of six researchers visited 13 communities over the course of nine days to interview residents in BTL. Each interview was com-

1 ING Holding. [online] Available at: http://www.ing-holdings.com/overproject#!prettyPhoto

2 Resident contact details were collected in previous years for internal documentation.

pleted in an average of 40 minutes, and approximately 54 questionnaires were completed each day. Resident contact details were also collected, to allow for follow up calls if necessary. Researchers did not encounter any unwillingness to participate from the BTL residents.

Once data had been collected and inputted into Microsoft Excel, SPSS[3] was used to analyse the results.

To ensure data collected from the sample in each community was representative of the whole community (which could be quite large), collection was conducted in three separate areas to account for potential differences in 'clusters' of households in different parts of the community. When approaching residents for interviews, researchers were careful to *not* select clusters of respondents. They divided each community into three distinct segments thus ensuring each "area" within a community is represented, and interviewed residents, at random, around these segments.

Sample Design

With limitations in resources (e.g. time and labour), all households in the 13 communities could not be interviewed. Therefore, a sample size has been calculated using the Yamane Taro formula:[4]

$$\text{Yamane Taro 1967, } n = \frac{N}{[1+N(e^2)]}$$

Where: n = sample size, N = total number of households, e = error tolerance (e= 0.05 based on the research condition).

The 13 target communities in BTL have 5,536 households in total. Given an error tolerance of 0.07, the sample size is:

$$\frac{5536}{[1 + 5536(0.05^2)]} = 373$$

Table 1: Sample size and design

Community Code	Community Name	Households	Sample Size
Dangkor Commune			
DK36	*Khva*	*224*	*15*
DK38	*Chamka Doung Choung Toul*	*114*	*7*
Cheung Eak Commune			
DK46	*Cheung Eak*	*623*	*41*
Boeung Tompun			
MC80	*Tnaut Chrom 2*	*325*	*22*
Chak Angrea Krom			
MC83	*Preak Talong 2*	*489*	*34*
MC75	*Toul Roka 2*	*421*	*30*
Chak Angrea Leu			
CMN13	*Deum Svay*	*199*	*15*
MC78	*Prek Tanou*	*567*	*37*
MC81	*Prek Tanou1*	*514*	*34*
MC104	*Prek Tanou2*	*406*	*26*
MC56	*Prek Takong*	*514*	*34*
MC79	*Prek Takong1*	*532*	*37*
MC55	*Prek Takong3*	*608*	*41*
Total	**5,536**	**373**	

3 SPSS is a specialised statistical software package used for logical batched and non-batched statistical analysis. During this analysis, several tools were utilised, including: frequencies, descriptive response, and multiples response.

4 Yamane, Taro. (1967). Statistics: An Introductory Analysis, 2nd Edition, New York: Harper and Row.

One resident from each of the 373 households was interviewed for the communities' questionnaire (no two residents resided within the same household). Thus, when reporting the results, the term 'household' and 'resident' may be used interchangeably.

d. Further Interview and Focus Group Discussion

Additional methods were used to capture qualitative data and to provide insight or further background information on the BTL communities.

Focus group discussion with BTL residents.

Sixteen residents (eight males and eight females) from 11 communities (Khva, Prek Takong 1, Prek Takong 3, Prek Tanou, Prek Tanou 1, Prek Tanou 2, Prek Talong 2, Toul Roka 2, Tnaut Chrom 2, Cheung Eak, and Deum Svay) participated in a focus group discussion (FGD). The FGD, which utilised semi-structured questions facilitated by researchers, sought to gain further insight into the responses received during the communities' household questionnaire.

2.2.2 Secondary Data Sources

Secondary data used throughout this report has been obtained from various sources which include: NGO reports, national and international media articles, and other available publications.

2.3 Limitations

Researchers aimed to achieve greater insight from key stakeholders, such as the primary developer of BTL and the MPP. After several requests by researchers to involve these stakeholders, it became apparent their participation would not occur for the report.

Chapter 3 – Findings

3.1 Overview

Data collected in the community representative survey is presented in Table 2 below, and gives a brief overview of the report's 13 target communities.

Most communities (54 %) are defined as 'too narrow'. In Deum Svay, for example, there is only 1.5 meters width for maneuvering through the community. Additionally, 54 % of communities have grounds that are considered un-walkable (i. e. contains large muddy areas, lasting flood puddles, or large areas of sand).

Table 2: BTL communities overview

Community Code and Name	Year of Settlement	House-holds	Population (# female)	Eviction Status
CMN13 Deum Svay	1979	199	1,473 (966)	Informal rumours of eviction
DK36 Khva	1984	224	1,120 (436)	Formal notice of eviction
DK38 Chamkadoung Chong Toul	1982	114	570 (x)[1]	Informal rumours of eviction
DK46 Cheung Eak	1979	623	2,668 (1,392)	Informal rumours of eviction
MC55 Preak Takong 3	1979	608	4,393 (2,960)	No known threat of eviction
MC81 Prek Tanou 1	1979	514	3,597 (2,370)	Informal rumours of eviction
MC56 Prek Takong	1979	514	3,467 (2,304)	Informal rumours of eviction
MC75 Toul Roka 2	1979	921	4,389 (2,271)	Informal rumours of eviction
MC78 Prek Tanou	1979	567	3,857 (2,611)	Informal rumours of eviction
MC79 Prek Takong 1	1980	532	4,093 (2,731)	Informal rumours of eviction
MC80 Tnaut Chrom 2	1986	325	2,729 (1,647)	Informal rumours of eviction
MC83 Prek Talong 2	1979	489	1,776 (908)	Informal rumours of eviction
MC104 Preak Tanou 2	1979	406	2,663 (1,800)	Informal rumours of eviction

3.2 Key Findings

3.2.1 Observational Survey Key Findings

Observational surveys were conducted by a researcher at each of the 13 BTL target communities. The findings – which aimed to determine community access, infra-structure, safety and hazards, and potential environ-mental concerns – were discussed and confirmed with community representatives/leaders to ensure accuracy.

3.2.1.1 Community Access and Structure

Communities are accessed via various means,[1] with concrete roads as the most common:

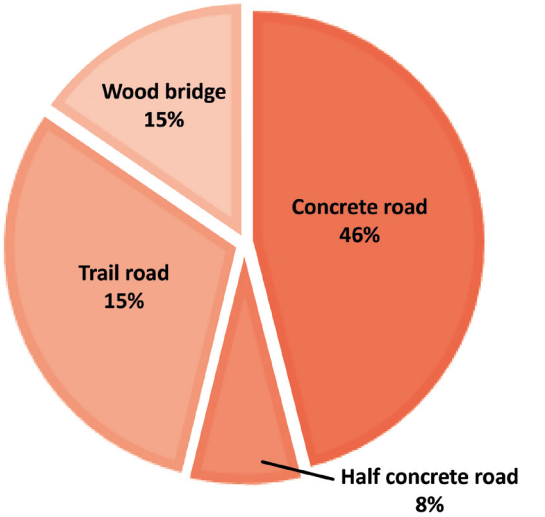

Figure 1: Community access route

1 Note: Trail roads are typically dirt pathways that are yet to be constructed using concrete.

Residents in Preak Takong have constructed makeshift walkways to avoid trash and lasting flood puddles.

The housing structures in BTL – which are predominantly built using wood, brick, and concrete, on the banks of the lake or positioned on stilts above the water – appear to be stable[2] in 54 % of communities. In the remaining 46 % of communities, however, observable old and failing construction material indicates that many houses are becoming unstable and potentially dangerous to live in or be around.

3.2.1.2 Hazards Present in the Community

Various hazards within the community are cause for concern. Table 3 lists various, observable hazards, and their presence within the 13 communities.

Due to the narrow layout of many BTL communities, waste collection vehicles from CINTRI (Cambodia's private waste collection firm) cannot access households to collect trash, thus it is regularly thrown in piles within – or near – the community. Improper waste management is a severe issue, where trash piles attract vermin, spread disease and present a physical risk to walk near should they contain needles or dangerous items.[3]

Table 3: Hazards present in the 13 target communities

Hazard	*# Communities with this hazard*	*% of Total*
Pot holes	*2*	*15,4*
Trash piles[2]	*10*	*76,9*
Standing water	*5*	*38,5*
Large amounts of electrical wiring	*1*	*7,7*
Gambling	*1*	*7,7*

Another problem in urban poor communities is gambling, which can increase the risk of crime and reduce income security. While in this observational survey, gambling was only noted if physically observed, the

2 This was determined by observing the quality and stability of materials used (e.g. were structures falling apart, or leaning to one side, etc.)

3 Wood, R. (2004). Phnom Penh struggles with its garbage. The Phnom Penh Post. [online] Available at: http://www.phnompenhpost.com/national/phnom-penh-struggles-its-garbage

communities' survey found that gambling was present, with 9 % of respondents reporting gambling to be an issue. Other security hazards reported include: alcohol/drug abuse (16 %), petty crime (7 %), domestic violence (4 %), and violent crime (1 %).

3.2.1.3 Assessment of Development

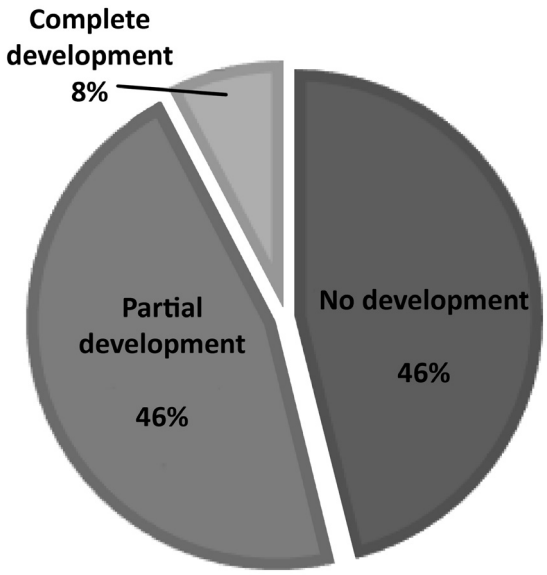

Figure 2: Stage of development

All communities that are categorized as partially developed are under active construction. Of the communities that have witnessed complete or partial development, road rehabilitation/expansion has occurred in 29 % of communities; residential areas have been constructed in 57 % of communities, and a commercial area has been constructed in one community.

3.2.1.4 Environmental Degradation

Long term damage to the environment is more difficult to observe, and thus only immediately observable damage has been noted. The most prominent issue in BTL communities is flooding of community sewage systems. The residents themselves have made many of these systems from repurposed material in the community.[4] Preak Tanou 1 is one such community that has constructed their own sewage system. During heavy/prolonged episodes of rain, however, their makeshift sewage system cannot cope, and sewage spills out into the roads, and sometimes inside houses.[5]

4 STT 2016 Boeung Tompun Communities Survey.
5 In Tnaut Chrom 2, residents raised concerns during the FGD that their sewage system has been unable to function efficiently since infilling the lake.

A resident of Preak Takong 1 walks through her flooded community.

Environmental Impact of Infilling Lakes

Infilling large bodies of water, such as lakes and wetlands, affects the natural environment, impacting ecology, hydrology, and productive economic services. The physical and economic act of infilling gives little regard to the true value of these waters, and no provision for the costly consequences of displaced flooding and the loss of natural public infrastructure for wastewater treatment.

Natural wetlands – such as Boeung Tompun Lake – play a major role in wastewater treatment. A complex community micro-organisms – bacteria, virus, fungi, protozoans, and other very small organisms – feed on the organic matter of the sewage, and remove harmful contaminants and pathogens found in sewage. These critical microbes are found on the root surface of floating plants, such as water hyacinth, morning glory and water spinach.

However, the capacity of this natural treatment process depends on it not being overburdened by too much sewage. When the wetland area becomes too small (i.e. filled-in with sand), or the volume of sewage input increases due to a growing population, the microbial community does not have sufficient time to provide observable treatment. This is a process currently occurring in Phnom Penh's Boeung Tompun Lake.

The damage infilling imposes on ecological systems can be severe. Each fish species, for example, needs a certain amount of dissolved oxygen in the water at all times to survive. When raw sewage flows into the warm, slow moving and seasonally low Tonle Sap and Bassac Rivers, the dissolved oxygen in the water available to fish drops significantly. This is because the microbial community, reacting to the sewage solution as food, grows explosively and their metabolism depletes the oxygen in the water. As a result, the fish die and an economically productive fishery is lost. So, not only does infilling the lake leave less spatial habitat for fish today, but also the quality of the water becomes degraded due to less natural treatment capacity from what is now likely an overload of sewage water.

A further issue with infilling lakes focuses on storm water management. This is a significant concern in Phnom Penh, largely due to the lack of sufficient pipe capacity under the streets. Historically, the city's combined sewage and storm water flows have been received and treated by a wealth of wetland areas. However, with less infiltration into the ground due to more cemented areas, storm water flows have increased, and this puts more flow into the pipes and canals. As a consequence, flooding in and around the city has worsened.

Costless, maintenance-free treatment opportunities are forgone when the extent of the original wetland area is significantly reduced, and when the natural ecological/microbial treatment system becomes overwhelmed with wastewater input. If the city's increasing volume of untreated wastewater is discharged directly into the Bassac River, it may biologically kill the river for some kilometers, and create a bad riverine odor. This will have an effect on fish quantity and health, and those who rely on fishing these waters for income could suffer.

In addition to the flooding of sewage systems, general flooding is a concern, particularly when water becomes stagnant and polluted thus attracting mosquitos and spreading disease. Flooding is also problematic for access to houses. In Preak Takong 3, residents have experienced a worsening in flooding of their single 200 cm long sewage system. When the system floods, 30 % to 40 % of community members must pay for someone to transport them and/or their goods between the community and main road.[6]

Finally, the burning of trash piles is a notable environmental issue. Residents have resorted to burning their

6 STT – Community meetings 2017.

trash in the absence of it being collected. Scientific American reported that burning trash is a significant issue in developing countries that contributes negatively towards climate change. It reported "an estimated 40 to 50 per cent of the garbage is made up of carbon by mass, which means that carbon dioxide is the major gas emitted by trash burning".[7] This estimate will fluctuate on a case by case basis, but the issue remains present in BTL communities. Further, the burning of trash presents significant health risks for residents that inhale smoke, with much trash consisting of dangerous materials such as plastic, and with trash burning often occurring near houses and schools.

Damage to the environment is difficult to observe without significant and ongoing monitoring, and below is an overview of the general ecological impacts.

3.2.2 Communities Survey Key Findings

Researchers interviewed a total of 373 residents, from different households, from the 13 Boeung Tompun Lake target communities. The questionnaire focused on: demographic information; awareness and knowledge of development; and change in community circumstance.

3.2.2.1 Demographic Information

Table 4: Demographic information

Indicator	*Frequency*	*% of Total*
Sex		
Female	*112*	*30,0*
Male	*261*	*69,9*
Age		
20–30	*67*	*18,0*
31–40	*100*	*26,8*
41–50	*79*	*21,2*
51–60	*71*	*19,0*
61–70	*38*	*10,2*
71–85	*18*	*4,8*
Average age	**45**	

7 Scientific American (2014). Burning Trash ad for Humans and Global Warming. Scientific American. [online] Available at: https://www.scientificamerican.com/article/burning-trash-bad-for-humans-and-global-warming/

Due to the randomized nature of interviewee selection (households were chosen at random upon arrival at each community, and one willing resident from each household was interviewed), there were no deliberate actions taken to ensure an even split between male and female respondents. The majority of BTL interviewees were male (70 %), and the most prominent age group 31–40 (27 %).

Table 5: Respondents' occupation

Occupation	*Frequency*	*% of Total*
Seller	*116*	*31,0*
Farmer/vegetable grower	*53*	*14,2*
Home-maker	*48*	*12,9*
Garment/factory worker	*27*	*7,2*
Private company staff	*22*	*5,9*
Government staff	*17*	*4,6*
Construction worker	*16*	*4,3*
Retired	*16*	*4,3*
Moto-dop/Tuk-tuk driver	*13*	*3,5*
Tailor	*5*	*1,3*
Chef	*2*	*0,5*
Financial support from son	*2*	*0,5*
Launderer	*2*	*0,5*
Mechanic	*2*	*0,6*
Musician	*2*	*0,5*
Priest	*2*	*0,5*
Beautician	*1*	*0,3*
Cleaner	*1*	*0,3*
Fisherman	*1*	*0,3*
NGO staff	*1*	*0,3*
Teacher	*1*	*0,3*
Trash collector	*1*	*0,3*
Other	*22*	*5,9*
Total	**373**	**100**

The most common occupancy of a BTL resident is a 'seller' (31 %). Sellers include those working in grocery stores, and those with small carts selling various goods. Table 6 identifies the goods sold by sellers who were interviewed.

Aside from residents who work for grocery stores, the most common type of goods sold by residents of BTL

are the crops grown on the lake. These 'sellers' retail vegetables grown by farmers, with farmers/vegetable growers the second most common occupancy (14 %), while homemakers – those who look after the family household, cooking and cleaning for the family – are third (13 %). Homemaking is an occupancy dominated by women, but some males do undertake this role.

Table 6: Goods sold by sellers

Type of good	*Frequency*	*% of Total*
Grocery Store	*74*	*63,79*
Vegetables	*13*	*11,21*
Rice	*4*	*3,45*
Sugarcane water	*3*	*2,59*
Noodles	*2*	*1,72*
Ice cream	*1*	*0,86*
Gas	*1*	*0,86*
Construction materials	*1*	*0,86*
Charcoal	*1*	*0,86*
Alcohol	*1*	*0,86*
Other	*15*	*12,93*
Total	**116**	**100**

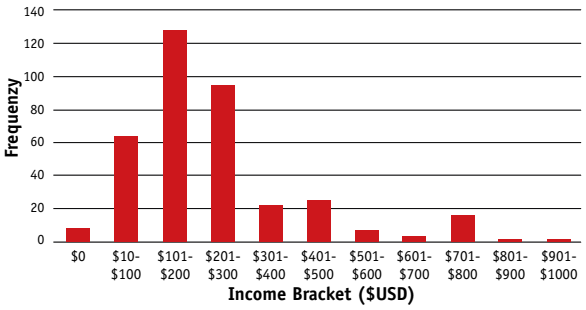

Figure 3: Total household average monthly income

The current living wage *per family* in Cambodia is $328.06 (KHR 1,341,860) per month, and $266.72 (KHR 1,090,964) *per individual* per month.[8] The communities of BTL are defined as 'Urban Poor', cemented in the fact that earnings of most BTL households fall far below this family living wage. 295 households (79 %) obtain a monthly household income falling within the $210-$300 income bracket or less.

161 *households* (43 %) earn below the suggested national minimum wage guideline *for one person* as outlined by the Royal Government of Cambodia. The guideline is marked against that received by textile workers, which as of 2017 is $153 per month (based on a 6-day working week).[9]

Noteworthy is the number of earners per household, which helps determine the above total household monthly income. 54 % of all households contain one to three adults (Table 7), and 47 % of all households have two adults generating income (Table 8).[10]

Table 7: Household demographics

Demographic	*Frequency*	*% of Total*
Adults (16 years+)		
Zero	*0*	*0*
One – three	*201*	*53,9*
Four – six	*122*	*32,7*
Seven – nine	*38*	*10,2*
Ten +	*12*	*3,2*
		100 %
Children (3–16 years)		
Zero	*118*	*31,6*
One – three	*224*	*60,0*
Four – six	*28*	*7,5*
Seven – ten	*3*	*0,8*
		100 %
Infants (0–3 years)		
Zero	*293*	*78,5*
One – two	*73*	*19,6*
Three – five	*6*	*1,6*
Six +	*1*	*0,3*
		100 %

8 Trading Economics. (2017). Cambodia Living Wage Family | 2015–2017. [online] Available at: https://tradingeconomics.com/cambodia/living-wage-family.

9 Thul, P. (2016). Cambodia raises 2017 minimum wage for textile industry workers. Reuters. [online] Available at: http://www.reuters.com/article/cambodia-garment-idUSL3N1C51OD

10 Children who work to supplement household income were not included in these figures.

Table 8: Number of earners per household

Earners	Frequency	% of Total
One	80	21,4
Two	177	47,5
Three	46	12,3
Four	29	7,8
Five	20	5,4
Six	8	1,6
Seven	6	1,9
Eight	7	2,1

Though most households (69 %) have one or two earners, 6 % have as many as six, seven, or eight earners. It could be assumed that those with more earners have a higher total household income, however the data shows this to be untrue, with little correlation between number of earners and income bracket.[11]

3.2.2.2 Awareness and Knowledge of Development

60 % of respondents reported that they were aware of intentions to develop the land, leaving a significant 40 % who indicated that they were unaware. Of the 60 % who were aware, 57 % said they were officially informed (3 % by government authority, 4 % by local authority, and 2 % by private company). 48 % said they were informed via informal channels, such as gossip in the community. However the researchers cannot verify this as a form of *official* communication.

Again, of the 60 % who were aware of the intended development, 92 % knew *how* the land was to be developed. 2 % did not, and 6 % could not confirm if they knew or did not. Below are the responses given by residents indicating what is to be developed in the area.[12]

When questioned on their opinion towards the general development of Phnom Penh, residents that they do not entirely oppose development, and do understand the benefits of development. Of the 373 residents interviewed, 29 % agree that development is beneficial for everyone in a city. There are many that believe development is good overall, but feel not everyone will see such benefits – 38 % disagree that development is beneficial for everyone in the city, and 47 % and 8 % agree and strongly agree, that development only benefits wealthy people. Residents of Preak Talong commented that development will be prosperous, but it will negatively affect our community,[13] while 100 % of residents in attendance at the FGD stated that "people are afraid", and "development is intimidating and causes tears" in communities that are negatively impacted by the changes currently taking place.

Table 9:
Intended development at various BTL locations

Development to occur	Frequency
Condominium development	85
Green City	46
Residential area	43
Road rehabilitation or expansion	42
Water reservoir building	29
Commercial area	14
Garden development	11
Canal rehabilitation or expansion	6
Bridge construction	5
Other infrastructure	4
No development plan	3
Market Building	3
Government building	2
Airport Building	1
Hotel Building	1
Fence Building	1
Stadium	1

Based on these results, it can be inferred that, while often urban poor commom unities do not outright oppose development, they do feel excluded and left behind in the fast-paced changing environment of their city. One resident of Cheung Eak discussed with researchers that she does not support development when it "causes suffering and homelessness".[14] Similarly, a resident of Deum Svay acknowledged development betters the city, but can "bring tears" to people when communities suffer as a result of development.

11 Appendix 3 displays the number of earners per household in each income bracket.
12 Note: some development sites will contain more than one of the following, thus the total is not 206.
13 Community meetings 2017
14 Ibid.

Of the 19 % of people to respond when asked to openly comment on development in Phnom Penh, 25 % said people should not face forced eviction without proper compensation. Every resident present at the FGD stressed the importance of fair compensation, asking particularly for "clear information of compensation". Fair compensation is a contentious issue in the event of forced eviction, but previous research finds that those who are forcibly evicted in Cambodia rarely receive fair compensation.[15] Sufficient and fair compensation, as outlined in the 2001 Cambodian Land Law, is detailed as being "at market prices or replacement price".[16] Additionally, as outlined in Article 5, compensation must be given in advance.[17] Residents of Preak Talong stated "the community wants the government to develop... [But] compensation must follow the market price".[18]

One benefit of land titles is to ensure fair compensation and efforts to obtain land titles should be made to increase residents' bargaining power for fair compensation. Results from the communities' household questionnaire show that 44 % of respondents understand the benefits of land titles, while 20 % and 36 % only somewhat understand or do not understand the benefits of land tenure respectively.

72 % of respondents are in possession of land titles. Of these, however, 92 % are soft titles (or certificates of occupancy), which offer less assurance and are significantly easier for authorities to overrule.[19] Of the 38 % without land titles, 39 % purchased their house without any land titles, while 32 % rent, 15 % own the land without land titles (having lived there for a long time), 9 % live on state land and so cannot obtain land titles, and 5 % have temporary occupation[20] of the land.

Acknowledging that forced eviction could occur as a result of the BTL development, most respondents do not believe they will receive *fair* compensation. When asked to respond to the statement "we are confident that we will receive fair compensation in the event of eviction", 30 % disagreed, while 2 % strongly disagreed. A large proportion (28 %) was indifferent, while only 16 % and 1 % agreed and strongly agreed. 23 % were unsure on the matter.

3.2.2.3 Change in Community Circumstance

Respondents of the communities' household survey were asked to answer questions relating to their circumstance, through choosing one of the following answers: 'much better', 'better', 'same', 'worse', and 'much worse', for each question asked. Various questions were asked pertaining to their living condition, residency, and social circumstances.

a. Living conditions and residency

The household survey found that since infilling the lake, general living conditions for 45 % of respondents have remained the same. 29 % have reported improvements, and 27 % reported general living conditions had worsened.[21] Similarly, 41 % of respondents reported their housing conditions had remained the same since infilling the lake, but 39 % have experienced a worsening. The worsening of living conditions and environment could possibly be explained by the worsening of flooding in the communities with 44 %[22] reporting that flooding has worsened since infilling the lake. Seven of the 11 communities present at the FGD said flooding was worse as a result of the lake infilling and poor sewage systems. Prek Takong 1, for example, said floodwater can reach depths of three meters during the rainy season. A resident from Deum Svay also added that the stagnant flood water becomes dirty and adversely affects residents' health. Flooding also poses a drowning hazard for residents, especially children who have no formal swimming lessons.

Income opportunities have, for the most part, remained the same, with 61 % noticing little difference. However, reports of decreased income opportunities (17 % worse and 5 % much worse), could be explained by those employed in the 2nd most common occupation, farming (14 %). The infilling of the lake has prevented the growing of aquatic crops by farmers in the area. In

15 See above n 17.
16 Office of The High Commissioner For Human Rights, (2012). Eviction and Resettlement in Cambodia: Human Costs, Impacts and Solutions. Phnom Penh, p. 24. Retrieved from: http://cambodia.ohchr.org/sites/default/files/Thematic-reports/Resettlement_Study-28_Feb_2012_Eng.pdf
17 See above n 6.
18 Community meetings 2017
19 See above n 4.
20 Temporary occupation – families are granted permission from the land owner to reside on the land for free.
21 Improvements combines better and much better, while worsened conditions include worse and much worse.
22 The combined total of those who responded 'worse' (31.4 %) and 'much worse' (12.6 %).

A child carriers a small boy on her back through flooded Preak Takong 1

Khva, for example, residents have been suffering from reduced crop-growing capabilities. They explained to researchers that since the infilling of the lake began, the livelihoods of the community have significantly declined. Approximately 80 % of Khva's residents made a living by growing the crop morning glory, but with the lake disappearing/changing, they can no longer earn an income.[23]

Table 10: Summary of living conditions and residency change since development

Circumstance	*Most frequent response*	*2nd most frequent response*
General living condition	*Same (45,3 %)*	*Better (25.7 %)*
Housing condition	*Same (41,0 %)*	*Worse (28.2 %)*
Flooding	*Same (38,6 %)*	*Worse (31.4 %)*
Income opportunity	*Same (61,4 %)*	*Worse (17.2 %)*
Employment opportunity	*Same (63,5 %)*	*Worse (16.4 %)*
Food security	*Same (60,1 %)*	*Worse (18.2 %)*

Regarding the living environment of each household within a community, respondents indicated the following as issues within their home:

Table 11: Issues with BTL homes

Issue	*Frequency*	*% of Total*
Bad smell	**210**	**12,1**
Broken objects	*46*	*2,7*
Dark	*33*	*1,9*
Flooding inside	*120*	*6,9*
Flooding outside	**195**	**11,3**
Mosquito presence	**332**	**19,2**
Other	*3*	*0,2*
Smokey	*11*	*0,6*
Too small	*105*	*6,1*
Trash piles	*187*	*10,8*
Unclean	*190*	*11,0*
Unsuitable bathroom	*74*	*4,3*
Unsuitable air circulation	*145*	*8,4*
Unsuitable cooking facilities/eating places	*23*	*1,3*
Unsuitable sleeping condition	*56*	*3,2*

23 Community meetings 2017

Table 12: Summary of social circumstance change since development

Circumstance	*Most frequent response*	*2nd most frequent response*
Relationship with neighbours	*Same (50,1 %)*	*Better (41,8 %)*
Community cohesion	*Same (72,4 %)*	*Better (21,4 %)*
Participation in community development	*Same (63,8 %)*	*Better (25,2 %)*

The 3 most common problems regarding living conditions were noted as: 1) mosquito presence, 2) bad smells, and 3) flooding outside. It is most likely that the increase in polluted and stagnant water has facilitated the increase in mosquito presence within the communities, meaning all three of the most common problems appear to arise from lack of infrastructure to cope with flooding.

The most problematic issue facing the community *as a whole* was recorded as flooding, with 29 % reporting flooding as the most problematic issue since developers began infilling the lake.

b. Social circumstance

More positively, researchers found that since infilling the lake, relationships within communities have improved significantly. 41 % reported relationships with neighbours was better, while 5 % felt relationships were much better, making a total 47 % witnessing some level of improvement. 50 % felt there was no change, and only 3 % felt relationships had worsened.

In line with this, community cohesion has become enhanced, with 25 % noting improvements. Those feeling 'there has been no change' was the most common response, with 72 % feeling community cohesion had remained the same.

Perhaps due to better relationships, the increase in participation in community development can somewhat be explained. 28 % believe participation has increased, but again, most (64 %) feel it is unchanged.

Looking at relationships beyond that with neighbours, many (43 %) Boeung Tompun residents felt that relations with local authorities and NGOs are normal.[24] 39 % responded that their community has 'good' relations with local authorities and the remaining 17 % believe relations are 'not good'.

24 Neither noticeably 'good' nor 'bad'.

3.2.2.4 Overall Situation and the Future

When asked to comment on the most severe impact on the community overall since infilling of the lake, the top three responses were: flooding (29 %), income (14 %), and threat of eviction (9 %).

Looking towards the future, 23 % of residents have said they plan to increase their security by upgrading their land title from soft to hard. 77 % of respondents, however, have no plans regarding land tenure. Researchers uncovered several reasons from informal discussions with residents:

1. Land titles are too costly and take too long to obtain.
2. Residents have been told by local authorities they do not need hard land titles because development is occurring.
3. Residents do not understand the benefits of land titles.
4. Residents are unaware of how to apply for land titles – 88 % of people do not know who to contact, the documents required, or how to begin the application.

Plans for infrastructure vary, and are outlined in figure 4 below:

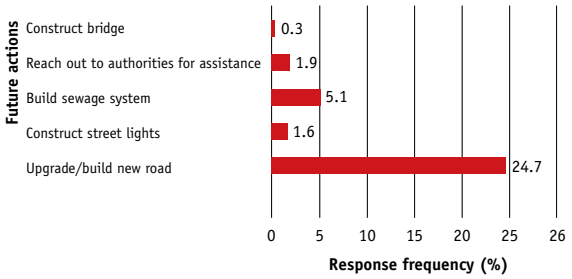

Figure 4: Communities' plans for the future

Only 53 % of the 373 respondents gave any answer for future plans. 33 % gave the above answers, while 20 % answered 'other', with the top two 'other' responses being: build sewage system (3 %), and expand path/road (2 %).

3.2.3 Key Findings Summary

Of the six areas investigated for change in living condition, the second most frequent response (after 'better') was 'worse'. The most problematic change in living conditions since development of the lake began was flooding, where 31 % and 12 % of respondents reported flooding had gotten 'worse' and 'much worse' respectively. 29 % also said flooding was the *most* problematic issue facing the community since infilling the lake.

3.3 Urban Development Master Plan

Given these findings, which outline the impact of development on BTL residents and the impact on the environment, it is fair to ask:

"Were these consequences of development discussed in the Urban Development Master Plan *prior* to development taking place in the Boeung Tompun area?"

The Urban Development Master Plan, 'Phnom Penh Land Use for 2035', is a long-term document blueprinting Phnom Penh city's development until 2035.[25] The original document, which was 330 pages long, was funded by the French Embassy and officially adopted by the Cambodian cabinet in late 2015.[26] The public version was translated into Khmer, and condensed from 330 pages to 35.[27] There have been questions surrounding the plans implementation in the city, with accusations circulating that the plan may only exist "merely for formality's sake".[28]

Nevertheless, it is important to determine how inclusive the master plan is in considering both human rights and environmental impacts. Without having access to the Urban Development Master Plan,[29] it is difficult to discuss matters that pertain to it.

25 Cambodia Constructors Association (2016). Capital's Urban Master Plan Adopted. [online] Construction and Property Magazines. Available at: http://www.construction-property.com/read-more-337
26 Ibid.
27 Halim, H. (2016). Phnom Penh's 2035 master plan in minimal use. The Phnom Penh Post. [online] Available at: http://www.phnompenhpost.com/post-property/phnom-penhs-2035-master-plan-minimal-use
28 Ibid.
29 To see the masterplan requires submitting a formal permission request to the governor. The physical copy is out of bounds to press and only available to a select few. See above n 65.

Chapter 4 – Conclusions and Recommendations

4.1 Conclusions

The benefits of Phnom Penh's development and urban growth should not be understated. Creating opportunity for investment in business, expanding public roads and transport options, and increasing space for residential development, will bring a wealth of benefits to the city, but these come at a cost.

Sacrificing the present situation for future gain is a globally debated topic, and varies in extremity on a case by case basis. The issue with the Boeung Tompun Lake development is the unnecessary suffering urban poor communities may be forced to endure. From this, and previous research, it appears that the main obstruction to reducing the present suffering in the face of development is a perceived lack of fair compensation.

Prior to possible eviction, residents also face daily struggles as the development of BTL imposes undesirable change on residents in the surrounding area. Flooding, due to the infilling of the lake, is cited as the most problematic issue facing BTL communities. Following this, a decline in income and threat of eviction are the top concerns for BTL residents. One resident from Preak Talong claimed the government "will not follow market prices on compensation", and argued that "development will benefit powerful groups, while the community will get less".

Residents are largely uninformed of development plans and exact boundaries, and in many cases are unaware of intentions to develop the land. In some instances, residents only discover these intentions when construction crews arrive onsite and begin development. Additionally, the lack of an accountable central body, of which community grievances can be raised and addressed, is an issue – without access to information regarding the development of BTL in an easily digestible manner, residents are unaware of when, if at all, they might face eviction.

4.2 Recommendations

Development, urban planning, and the eviction and relocation of urban poor communities need to be practiced in a law abiding, just, and equitable manner so as to form the basis of long-term sustainable development.

The results from the communities' questionnaire suggest the handling of the BTL development by authorities and development firms – and the subsequent impact on residents – leaves significant room for improvement. It is from this that the following recommendations for key stakeholders have been suggested.

Local and National Authorities

1. Make intentions for future development plans clear to the public (or make the urban development masterplan more accessible), particularly to those who will be immediately affected as a result of residing within, or close to, the boundaries of development. Awareness is critical for ensuring development is inclusive of all Phnom Penh citizens.

Non-Governmental Organizations and Civil Society Groups

1. NGOs need to continue bringing local and national issues, such as discussed in this report, to the public's attention. In undertaking research and making the results available to the public they can give strong voices to communities that are currently experiencing difficulty with forced eviction or poor living conditions, and work towards finding solutions to such problems.
2. It is important for civil society and NGOs to distribute legal advice to vulnerable and urban poor settlements subject to, or victims of, eviction and insecure land tenure.
3. Additionally, they should continue to assist communities with monitoring and recording any cases which violate their legal, housing and human rights, and provide support with raising such cases to the relevant authorities.

Urban Poor Communities

1. The most important recommendation for urban poor communities is to educate themselves on the current laws in place to ensure they are able to fairly fight for fair compensation. This also involves organizing legal documentation (e.g. family/resident books, land titles (soft or hard), identity cards). Other areas they should aim to become more knowledgeable in include: Circular No. 3, the Systematic Land Registration Process, and the available avenues (even if they are ineffective) for lodging complaints. It is highly recommended that these communities seek the assistance of NGOs and charities to ensure the knowledge gained is accurate and complete.
2. Work to strengthen community cohesion, both within their own community and with others. This can help to increase the flow of information between residents and communities, and it may act as a support network for those who are experiencing difficulties (such as reduced income opportunities, or declines in living standards).

Annexes

1. Community Rep Survey

1	Community Code	_____		
2	Community Name	_____		
3	Number of occupied households in community	_____		
4	Number of families in community	_____		
5	Approximate number of people in community	Total: _____ Female: _____		
6	Community Representative name and phone number	_____		
7	Is this community on state, or private land?			
8	Community Size (m^2)	_____		
9	What year did the community first settle?	_____		
10	Is the community organised?	a. Yes (what year _____)	b. No	
11	Current eviction status / threat level	a. No known threat	b. Informal rumours of Eviction	c. Formal notice of eviction
		d. Already evicted *(please specify year eviction occurred)* _____	e. Don't Know	f. Other *(please specify)*

2. Initial community discussion questions

1. Community / Meeting info.
   Date & Time of meeting: dd/mm/yyy
   Researcher(s) present at meeting: Name
   Number of different households present at meeting: #
   Number of people present at meeting: # (f=#)
2. Introduce why researchers are visiting them.
3. Show them a photo of the intended development plan.
4. Discussion points for meeting
   1. **Development**
      a. General opinion of development in Phnom Penh
   2. **Knowledge**
      a. Current knowledge of development in Boeung Tompun
      b. How much have you been told about development in BT and who by?
      c. Have local authorities contacted you?
   3. **Feelings and Opinions**
      a. How does the development in BT make you feel?
   4. **Circumstances**
      a. Since infilling the lake, how has your employment / income been affected?
      b. Have your living conditions changed?
   5. **Community Action**
      a. Have you participated in any community action, for example, protests?
      b. Did you experience any violence or fear?
   6. **Plan for future**
      a. Have you thought about a plan in the event of eviction?

3. Observation Survey

Boeung Tompun Communities Questionnaire

Questionnaire Code: /____/____/____/

Boeung Tompun

Project Objectives:

To determine the impact of lake infilling on Boeung Tompun communities.

To understand how infilling Boeung Tompun lake impacts greater Phnom Penh (now and in the future).

To assess the extent to which these impacts have been considered in the Urban Development Masterplan.

Observation Survey Objectives:

To develop community profiles of the 13 Boeung Tompun communities.

To assess the accessibility of the community, and the quality of infrastructure (e.g. buildings, roads) through identifying materials used for such infrastructure within the community.

Name of Interviewer: _____

Date of Interview: _____

Location: village_____ Sangkat_____ Khan_____

Total time for interview _____

1. Community Access and Structure

1.1	How is the community accessed?	_____		
1.2	What material has been used for the primary access route?	_____		
1.3	Is the community well-spaced? (e.g. not too narrow)	_____		
1.4	Is the ground within the community easily walkable? (e.g. no large muddy areas/lasting flood puddles)	a. ☐ Yes	b. ☐ No	Comment:

1.5	Do the housing structures seem stable?	a. ☐ Yes	b. ☐ No	Comment:
1.6	Are the housing structures a suitable size?	a. ☐ Yes	b. ☐ No	Comment:
1.7	What materials have been used to build the houses?	_____		
1.8	Is the community near any of the following?	a. ☐ Development	b. ☐ Sewage system	
		c. ☐ Factory waste	d. ☐ Other *(please specify)*	

2. Community Hazards

2.1	Are there any hazards in this community? *(tick all that apply)*	
a. ☐ Pot holes	b. ☐ Trash piles	c. ☐ Standing water
d. ☐ Large amounts of electrical wiring	e. ☐ Other *(please specify)* _____	

3. Assessment of development

3.1	To what extent has the site been developed?	
☐ No development *(end survey)*	☐ Partial development *(go to Q.3.2)*	☐ Development is complete (go to Q. 3.5)

3.2	If partially developed	
Is the site still actively under construction?	☐ Yes	☐ No

3.3	What are the signs of partial construction? *(Please tick all that are relevant)*	
☐ Community evicted, but land not yet developed	☐ Lake filled in, but not developed	☐ Infrastructure (e.g. roads) partially complete
☐ Buildings still under construction	☐ Construction staff, materials, and/or equipment on site	☐ Other *(Please Specify)* _____

3.4	What has been constructed? *(please tick all that are relevant)*	
1.☐ Road rehabilitation or expansion	2.☐ Residential area *(please explain)* _____	3.☐ Commercial area *(please explain)* _____
4.☐ Canal rehabilitation or expansion	5.☐ Garden development	6.☐ Government building *(please explain)* _____
7.☐ Other infrastructure *(please specify)* _____	8. ☐ Other *(please specify)* _____	

3.5	If development is complete, what has been constructed? *(please tick all that are relevant)*	
1.☐ Road rehabilitation or expansion	2.☐ Residential area *(please specify)* _____	3.☐ Commercial area *(please specify)* _____
4.☐ Canal rehabilitation or expansion	5.☐ Garden development	6.☐ Government building *(please specify)* _____
7.☐ Other infrastructure *(please specify)* _____		8. ☐ Other *(please specify)* _____

4. Environmental Degradation

4.1	Are there any observable environmental hazards in the community due to development? *(tick all that apply)*
a. ☐ Polluted water	b. ☐ Construction waste improperly disposed of (e.g. burning)
c. ☐ Oil spillage from heavy machinery	e. ☐ Other *(please specify)* _____

4. Communities Housegold Questionnarie

Questionnaire Code: /____/____/____/

Boeung Tompun

Project Objectives:

To determine the impact of lake infilling on Boeung Tompun communities.

To understand how infilling Boeung Tompun lake impacts greater Phnom Penh (now and in the future).

To assess the extent to which these impacts have been considered in the Urban Development Masterplan.

Household Survey Objectives:

To assess the current (and change in) living circumstance of Boeung Tompun residents since development at Boeung Tompun Lake began.

To gain insight into the awareness of residents' knowledge of development in Boeung Tompun.

To develop community profiles of the 13 Boeung Tompun communities.

Name of Interviewer: _____

Date of Interview: _____

Location: village_____ Sangkat_____ Khan_____

Time taken for:

Preparation _____ Questionnaire _____

Conclusions _____ Total time for interview _____

1. Demographic Information

1.1	Name of primary respondent	_____
1.2	Primary respondent's contact number	_____

1.3	Age of respondent:	_____Years	
1.4	Gender:	a. ☐ Male	b. ☐ Female

2. Socio-economic details

2.1	What is your total household's average monthly income?	KH _____ / USD$ _____	
2.2	What is your current primary occupation?		
a. ☐ Garment/factory worker	b. ☐ Construction worker	c. ☐ Moto-dop/Tuk tuk driver	
d. ☐ Farmer / vegetable grower	e. ☐ Fisherman	f. ☐ NGO staff	
g. ☐ Government staff	h. ☐ Private company staff	i. ☐ Trash collector	
j. ☐ Home-maker	k. ☐ Retired	l. ☐ Unemployed	
m. ☐ Unable to work *(please specify)* _____		n. ☐ Other *(please specify)* _____	

3. Awareness of development project

3.1	Are you aware that there are intentions to develop this land?	a. ☐ Yes		b. ☐ No *(go to Q.4)*
3.2	Were you officially informed that the lake would be filled in for development purposes?	a. ☐ Yes	b. ☐ No *(go to Q.3.4)*	c. b. ☐ Don't know *(go to Q.3.4)*
3.3	Who informed you of this development?	a. ☐ Gov. Authority		b. ☐ Local Authority
		c. ☐ Private Company		d. ☐ Informal Rumors
		e. ☐ Don't know		f. ☐ Other *(please specify)* ____
3.4	Do you know how the land is to be developed?	a. ☐ Yes	b. ☐ No *(go to Q.4)*	c. ☐ Don't know *(go to Q.4)*
3.5	What will be developed on *this* community land? *(tick all that are relevant)*			
a. ☐ Road rehabilitation or expansion	b. ☐ Residential area	c. ☐ Government building		
d. ☐ Canal rehabilitation or expansion	e. ☐ Commercial area	f. ☐ Garden development		
g. ☐ Condominium development	h. ☐ Bridge construction	i. ☐ Other infrastructure *(please specify)* _____		
j. ☐ No development plan	k. ☐ Other *(please specify)* _____			

4. Land Tenure and Knowledge of Rights

4.1	Do you have land titles? (If yes, what type?)	a. ☐ Yes	i. ☐ Hard *(recognized at national level)*	ii. ☐ Soft *(certificate of occupancy, recognized at local level)*
		b. ☐ No	Please explain why not: _____	
4.2	If you have land titles, please describe how you obtained them.	Year received: _____ Signed by: _____ Other notes: _____		
4.3	Has local authority / an NGO informed you on how to obtain land tenure?	If yes: _____ who *(name of NGO / authority)*? _____ When? _____		

		a. Yes	b. Somewhat	c. No
4.4	Do you understand the benefits of having land titles?	☐	☐	☐
	Please provide some explanation of your knowledge if possible.			
4.5	Do you know how to apply for land tenure (who to contact, documents required etc.)?	☐	☐	☐
4.6	Have you heard of/do you understand, the Systematic Land Registration Process?	☐	☐	☐
4.7	Have you heard of/do you understand, Circular No. 03?	☐	☐	☐

5. Opinion on Development

Regarding development in general (greater PP)		SD	D	I	A	SA	DK
5.1	Development is beneficial for everyone in the city	☐	☐	☐	☐	☐	☐
5.2	Development only beneficial for wealthy people	☐	☐	☐	☐	☐	☐
5.3	Development excludes poor people	☐	☐	☐	☐	☐	☐
5.4	Comments on general development						

	(feelings & opinions)						
Regarding development in Boeung Tompun		SD	D	I	A	SA	DK
5.5	We will benefit from BT development	☐	☐	☐	☐	☐	☐
5.6	We are confident that we will receive fair compensation in the event of eviction	☐	☐	☐	☐	☐	☐
5.7	If compensation has already been given, how much and what for?						
5.8	Comments on Boeung Tompun development (feelings & opinions)						

SD = Strongly Disagree D = Disagree I = Indifferent

NOTE:

A = Agree SA = Strongly Agree DK = Don't know

6. Community Circumstance

6.1	Number of people in your family?	Adults (16yr +) ___, Children (3-16yr) ___, Infants (0-3yr) _____
6.2	How many children in this family, who are of school age, regularly attend school?	
6.3	Number of earners in your family?	

6.4	**Hazards present in the community – health and safety** ***(tick all that are relevant)***		
a. ☐ Polluted/dirty water	b. ☐ Polluted/dirty air	c. ☐ Piles of trash nearby homes	
d. ☐ Nearby construction site	e. ☐ Near to waste from industry/factory	f. ☐ Alcohol/drug abuse	
g. ☐ Domestic Violence	h. ☐ Petty crime (e.g. theft)	i. ☐ Violent crime	
j. ☐ Gambling	k. ☐ Flooding	l. ☐ Other *(please specify)*	

6.5	**General Living environment** ***(tick all that are relevant)***			
a. ☐ Dark	**b.** ☐ Unclean	**c.** ☐ Bad smell	**d.** ☐ Too small	**e.** ☐ Flooding inside
f. ☐ Flooding outside	**g.** ☐ Smokey	**h.** ☐ Trash piles	**i.** ☐ Unsuitable sleeping conditions	**j.** ☐ Unsuitable Cooking facilities / eating places
k. ☐ Broken objects	**l.** ☐ Mosquito presence	**m.** ☐ Unsuitable air circulation	**n.** ☐ Unsuitable bathroom	**o.** ☐ Other *(please specify)* _____

6.6	**Changes in living conditions and residency since development began**	1	2	3	4	5
General Living condition		☐	☐	☐	☐	☐

Housing condition		☐	☐	☐	☐	☐
Prone to flooding		☐	☐	☐	☐	☐
Income opportunity		☐	☐	☐	☐	☐
Employment opportunities		☐	☐	☐	☐	☐
Food Security		☐	☐	☐	☐	☐
6.6	**Changes in social circumstance and residency since development began**	**1**	**2**	**3**	**4**	**5**
Relationship with neighbours		☐	☐	☐	☐	☐
Community cohesion		☐	☐	☐	☐	☐
Participation in community development		☐	☐	☐	☐	☐
Social safety net		☐	☐	☐	☐	☐
6.7	What is the biggest problem facing the community today?					
6.8	What has been the most problematic impact on the community since infilling the lake? E.g. flooding, poor income opportunities, threat of eviction...					

NOTE: 1 = Much Worse 2 = Worse 3 = Same 4 = Better 5 = Much Better

7. Community Services

7.1	**What services does the community have access to *(tick all that are relevant)***	
a. ☐ Trash collection (how often_____)	b. ☐ Street lights	c. ☐ Working sewage system
d. ☐ Suitable transport infrastructure (good road etc.)	e. ☐ State water (_____ Riel/m^3)	f. ☐ State electricity (_____Riel/Kwh)
g. ☐ Private water (_____Riel/m^3)	h. ☐ Private electricity (_____Riel/Kwh)	i. ☐ Savings scheme
l. ☐ Other *(please specify)* _____		

7.2	Does the community have good relations with local authorities? (please explain)		
7.3	Do any NGOs support the community? (if yes, in what capacity?)	a. ☐ Yes (go to Q. 7.4)	b. ☐ No (go to Q. 7.5)
7.4	What NGO(s) support the community and in what way?		
7.5	Would you like NGO support?	a. ☐ Yes (in what way? (_____))	a. ☐ No

8. Community Action

8.1	Has this community participated in any organized community advocacy action, either with other BT communities, or communities outside of BT? (Please explain)	Gathering: _____ Protest: _____ Other: _____
	Additional comments?	

9. Future

9.1	What are this community's plans for land tenure?	
9.2	What are this community's plans for infrastructure?	
9.3	Other Plans? *(please comment)*	

5. FGD Checklist

FGD with BTL residents post communities HH questionnaire

Venue:

Date:

Time:

Staff present:

Participants present: female/male - name – community

Note – it is critical that full explanations are given and examples used when possible.

Please comment:

1. Since development, are your living conditions (a) Easier, (b) Harder, (c) The same?
    a. Please explain.
2. Since development, is your environment (a) Better, (b) Worse, (c) The same?
    a. Please explain.
3. Since development, is flooding (a) Better, (b) Worse, (c) The same?
    a. Please explain.
    b. Any other comments regarding flooding?
4. How has the lake infilling/development affected your/your community's ability to use the lake for income or otherwise?
5. Are you satisfied with the way the development of BTL has been handled (i.e. Have you been happy with the level of information and cooperation you have had with the government and private developers?
    a. Discuss – why/why not
6. What does the word "Development" mean to you?
7. What do you think the word "Development" means to the government?
8. Do you have anything else you would like to discuss/comment on regarding the development at BTL?

Humane

Social just

Environmental sound

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About the Stiftung Asienhaus

The Stiftung Asienhaus follows the principle of »Connecting People, Promoting Insights, Shaping the Future« and contributes to build bridges between civil societies in Asia and Europe. The Stiftung Asienhaus is committed to the implementation of human rights, the strengthening of social and political participation, as well as the protection of social justice and the environment.