

# EXCESS BAGGAGE

REDUCING PLASTIC BAG WASTE IN MAJOR CITIES OF CAMBODIA

DESIGN OF PRODUCT SERVICE ALTERNATIVES TO PLASTIC BAGS

# PRELIMINARY FINDINGS FROM FOUNDATION PHASE

RESEARCH SUMMARY REPORT



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PROGRAMME

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Quicksand is a strategic innovation consultancy headquartered in India, and working in emerging markets. For more information on their work, please visit [www.quicksand.co.in](http://www.quicksand.co.in)

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For further information on the project and to have access to additional resources please visit [www.excessbaggage-cambodia.org](http://www.excessbaggage-cambodia.org)

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# INTRODUCTION

Plastic bags, an endemic part of people's daily lives in the country, is not a problem unique to Cambodia. Eight Asia-Pacific nations are in the top ten list of countries that mismanage their plastic waste.

Plastic bags are popular for a reason. Its multipurposeness and versatility is a very critical resource for thousands of Cambodian micro-entrepreneurs and local businesses.

Over the last 15 years, unfettered access and innumerable product typologies have insidiously created a throwaway culture, demonstrated by the fact that Phnom Penh alone generates an estimated 16 tonnes of plastic bag waste (close to 3-3.5 million bags) in a day.

Quicksand has been partnered by ACRA, to investigate existing behaviors and experiences around plastic bag consumption. This will in turn inform the design of appropriate and viable alternatives, whose adoption will effectively reduce the increasing proliferation of plastic bag waste in the three cities of Phnom Penh, Sihanoukville and Siem Reap.

To find an answer to single use plastic bags, and replacing these highly ephemeral products with reusable alternatives is easier said than done. Our endeavor has to take into consideration the entire lifecycle of product economies - manufacturing ecosystems, market drivers, civic infrastructure, waste management and processing enterprises.

This document is an ongoing attempt at understanding the complex ecosystem of formal and informal drivers critical to the project. While it is in no way exhaustive, it still gives a flavor of how nebulous a challenge it is, and how multi-faceted the end solution will have to be.



# WHERE DO THESE BAGS COME FROM?

Plastic bags arrived in Cambodia in the early 90's and have become a staple ever since. Most of the bags found here are predominantly from either Vietnam or Thailand.

Access to data on import statistics is challenging, but according to a 2012 news article, the Vietnam Plastics Association (VPA) stated that Cambodia is the fifth largest importer of Vietnamese plastic products, after Japan, the US, Germany, and Thailand.

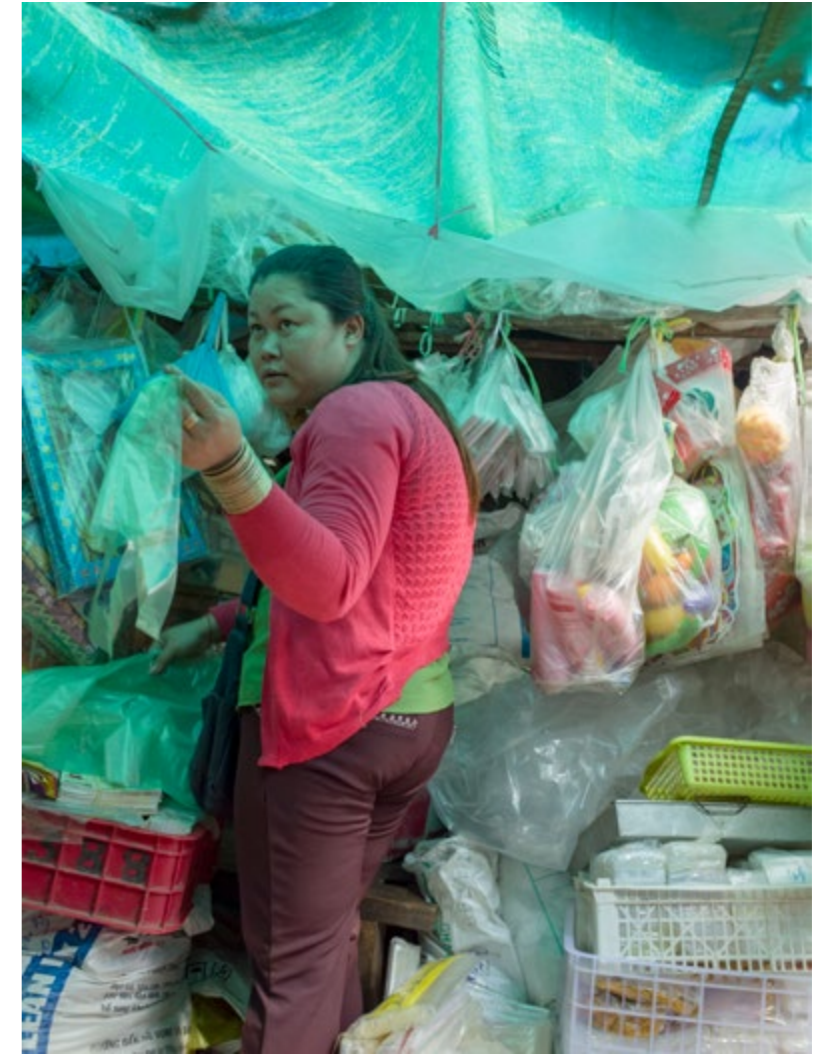
Plastic bags alone generated US\$2.9 million in export value, accounting for 40.2 percent of the total.

The VPA also said as Cambodia is not a highly demanding market, businesses do not find it too difficult to promote exports to this country.

It is claimed that a large part of these imports are unregulated or sneak past the formal scanners, infiltrating the country's borders and into its local markets and supply chains.

**"As Cambodia is not a highly demanding market, businesses do not find it too difficult to promote exports to this country."**

THE VIETNAMESE PLASTICS ASSOCIATION, 2012



Plastic bag suppliers and vendors stock many different varieties and sizes of plastic bags and sell them by weight to customers.



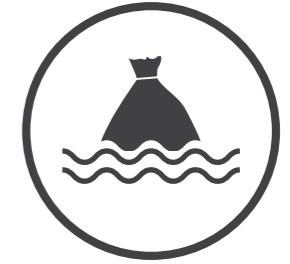
**"It is downright absurd that a tiny country of about 15 million people can generate so much plastic waste."**

**CONCERNED HOTEL OWNER, SIEM REAP**

# THE PLASTIC BUILDUP



Plastic bags are extremely cheap and distributed generously by vendors. The injudicious use of plastics and the lack of proper disposal channels leads to a lot of littering. Government initiatives target supermarkets to use eco-bags and caution citizens against the health hazards of plastics, but have yet to show credible impact or change in behavior.



In a majority of urban settlements, trash is collected 2-3 times a week. Bags of trash are kept on the curbside, often opened up by waste pickers. During the rainy season the trash bags and its contents easily flow into and clog the drainage and sewerage systems. It is estimated that 30% of drainage problems are because of plastic bags.



In the absence of proper garbage collection services, households in outer provinces often resort to yesteryear practices of burning their waste. The municipal authorities try to appeal to communities via local sangkat meetings by educating them on good practices, but are often met with indifference or helplessness.



While urban areas have an entrenched informal and formal waste segregation ecosystem, plastic bags don't appeal to collectors because of their low quality and per capita value. By the time it reaches the landfill, these bags are often bruised, wet and often mixed with organic waste making it harder to segregate.

# THE EPICENTER OF PLASTIC BAG USE

Despite the development of modern channels, people in the main urban and suburban areas of Cambodia still predominantly use traditional markets for their shopping needs.

Places like Olympic, O'Russey and Doeum Kor in Phnom Penh and Psar Leu in Siem Reap cater to both households and businesses - selling everything from fresh produce, appliances to clothes; truly making them the nuclei of commercial activity in the city.

Vegetable and meat shops that constitute the 'wet market' are usually situated on the outer periphery. Motorbikes or small jeeps overloaded with bulk supplies are a common sight in this part.

The central area of the market is a large covered structure, and houses small food counters, salons and many stores selling groceries, appliances, cured meats, household goods, clothes, jewellery and other essential goods.

Given the bustling nature of business at these places, a lot of waste is generated throughout the day. Waste pickers roam around, collecting metal and plastic waste at periodic intervals, leaving mostly plastic bag and organic waste for the cleaners and garbage collectors.



**PICTURE** : Top view of Phsar Doeum Kor in Phnom Penh, Cambodia.



Phsar Doeum Kor is an old traditional market situated in the heart of Phnom Penh and home to thousands of small shops selling everything from edibles to clothes.

# LIMIT- LESS

From a cursory glance, it is apparent that plastic bags are the lifeblood of Cambodian markets. They allow vendors the flexibility and versatility to standardize, display, organize, package and transport goods in the most effective manner.

Here are some use patterns we saw repeatedly in our visits to several markets in Phnom Penh and Siem Reap.



Transparent handle-less plastic bags display edible wares and are a nifty measurement aid for the vendor. Multiple SKU's of these bags allow vendor to customize standardized quantities for household and bulk purchases.



Small sized shopfloors often limit the display of the innumerable goods being sold by the vendor. Dispensing plastic bags from the ceiling maximizes on the merchandising space that can be afforded in the tiny cubicle.



Most individuals and small businesses use two wheelers to transport goods. Shopkeepers will often reinforce wares in multiple plastic bags, as a thoughtful gesture.



Hot liquid based foods are an integral part of the take-out culture in Cambodia. Plastic bags become an essential aid for street vendors, who sometimes use it to re-heat and cook food as well!



Food vendors often use plastic to protect their wares or while serving. Plastic sheets are used to cover eatables, and plastic bags are often used as gloves while handling food.



Portability and ease of carrying is an expected norm. So much so that, new forms of consumption give rise to new typologies of plastic bags, as seen here in the case of the beverage carrier bag.



**The plastic bag is a critical optimization tool for vendors. Each plastic bag has a specific role, and is indispensable for the functioning of their business.**



# QUALITY PERCEPTIONS

While most bags found in the market are unbranded and sold loose, there is a colloquial syntax for judging quality.

Color and feel are the two primary criteria for ascertaining the quality of plastic followed by price. Transparent plastics are higher grade and expensive, and used to package food ingredients. Translucent white plastic bags are used for packaging cooked food or beverages, and colored plastics are mostly carriers. Black bags, the cheapest of the lot, are associated with sanitary waste and garbage.

Other than color and size, the most ubiquitous material distinction made is between No. 1 and No. 2 quality bags.



VS



No. 1 plastic bags are slightly more expensive and the flexibility and elasticity affords the vendor to put more goods in one bag.

These bags are perceived to be more durable and are very popular with most grocery and produce vendors.

No. 2 plastic bags are a little more rigid and have a waxy texture. Most vendors claim it has a bad smell, and do not like handing these out to customers.

Some plastic bag vendors we met had stopped stocking these bags because of low demand.



Irrespective of price and quality differences, the markets generate a lot of plastic waste through the day. The chaos and jostle of daily transactions leave little or no room for thrifty use of plastic bags.

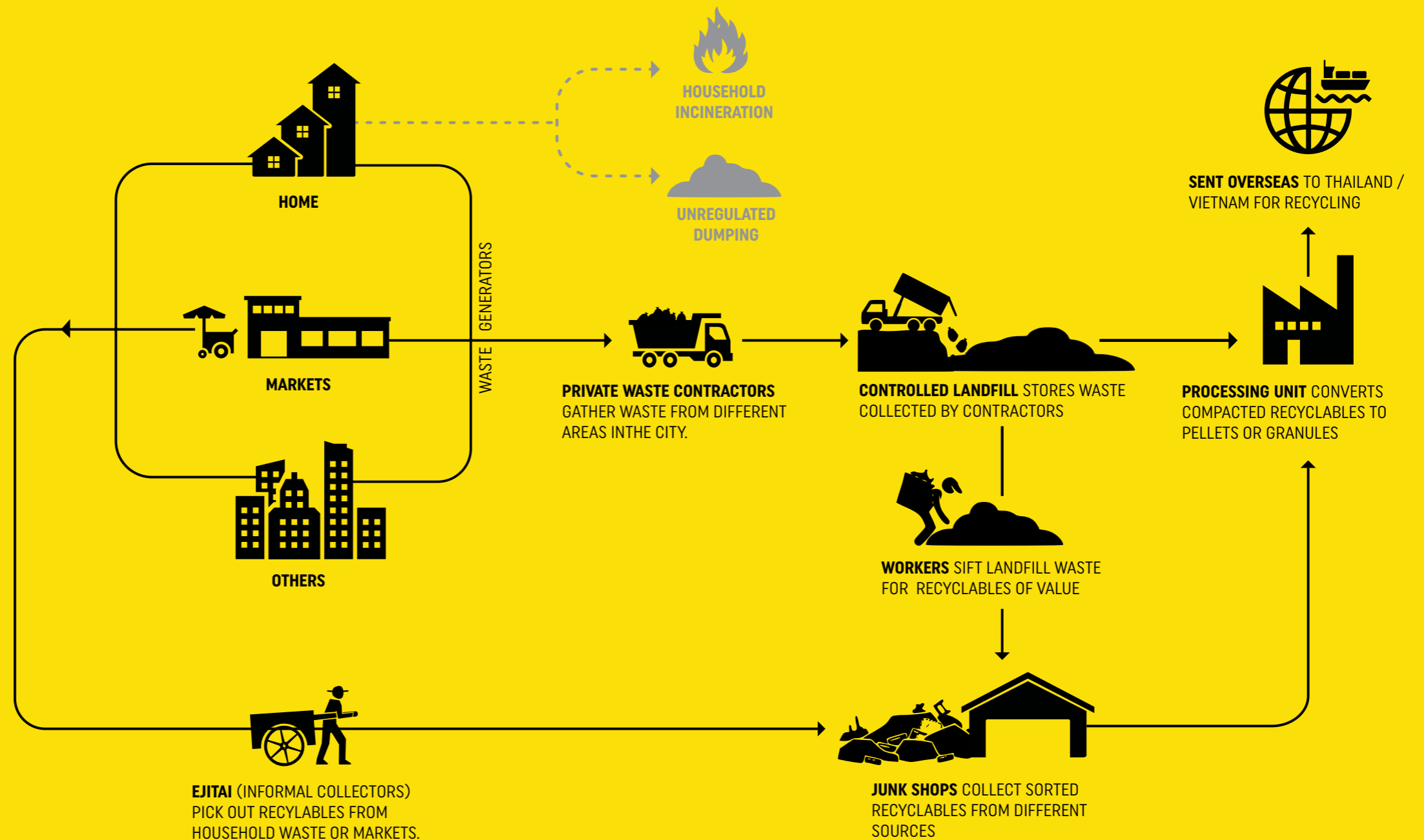
# WASTE NETWORKS

Like many cities in other developing countries, the composition of waste in Cambodia is made up of a high density of moisture and organic materials (around 50-60%). Plastics contribute to approximately 15% of the total municipal waste.

The solid waste management in Cambodian cities is under the purview of private contractors, who collect waste from residential, insitutional and market areas and dispose it in controlled open landfills.

According to studies, only 65% of households are serviced by formal waste collectors. The rest either burn their trash, or dump it at unregulated sites, adding to the environmental pressures faced by the city.

While formal recovery infrastructure for non-organic waste is undeveloped, Cambodia has a vibrant informal economy of both local and foreign stakeholders that contribute towards reducing the overall burden that solid waste puts on the city. A majority of the waste that is collected and processed is exported to neighboring countries of Vietnam and Thailand via businesses on the country's borders.



# PRIVATE WASTE CONTRACTORS

## A VISIT TO GAEA'S TRUCKYARD IN SIEM REAP

GAEA is the officially appointed waste collection company in the city of Siem Reap. With a working contract of 50 years, it has been operating in the city for the past eight years. It's operational fleet of 20 trucks collect 230 tons of garbage each day. Its services cover 90% of the city. Garbage collection has been increasing by 10% year on year. Collected waste is transferred to a GAEA owned controlled landfill in Prasat Bakong, outside Siem Reap city.

Local hotels are the biggest generators of waste in the city. According to an official, segregation is the most pressing need of the hour. Truck operators and sweepers separate valuable recyclables whenever possible, but it requires more pro-active involvement from the citizens or establishments that generate the waste. There are over 100 categories of households and commercial establishments for which GAEA has defined differing pricing tariffs.

GAEA employs 110 workers - men are employed as garbage collectors and women as sweepers. Managing human resources is amongst GAEA's biggest challenges. To incentivise them further, the company has plans to soon provide housing facilities for it's workers.

Given the context of Siem Reap, GAEA feels that tourism can be a powerful catalyst to manage the waste situation in Siem Reap. It works closely with the local government on it's programs to build awareness about waste management. It has plans to run a campaign on building awareness at schools in the near future.



**1 CITY,  
8 YEARS,  
20 TRUCKS,  
110 EMPLOYEES  
230 TONNES OF  
WASTE /DAY**





## THE INFORMAL ECOSYSTEM

Known colloquially as **Ejitai**, waste pickers often earn the ire of both citizens and formal waste collectors and are blamed for garbage spillage and littering on the streets.

At the same time, they are the unofficial primary segregators, supplying hard plastics and metal recyclables to the informal industry in Cambodia.



**Waste collectors** like Thoun Sreyny are extremely clued into the informal waste economy of neighboring countries of Cambodia.

Collectors are an essential source of livelihood for local networks of ejitais and also provide supplementary incomes to workers living in landfills.

# PRASAT BAKONG LANDFILL

What happens to all the plastic waste once it reaches a landfill? Observations from GAEA operated site in Prasat Bakong, Siem Reap.

**1** As soon as the truck offloads it's goods, workers start separating the contents into different groups - usable organic food, hard plastics, larger plastic bags and metals, mostly cans. The rest is left at the site.



**2** Similar colored plastics are collected together in a large black bag and piled on one side of the landfill



**3** Several large bags containing the segregated plastic bags are then compressed through a compactor, tied up and set aside.

**4** Not everything is segregated for recycling. The landfill keeps growing due to the hordes of smaller bags and organic waste that have been left by the workers.

**5** Once a month a Vietnamese junkshop owner visits the Prasat Bakong landfill and picks up the compacted bales of segregated plastic bags. These will eventually end up in a recycling plant in Vietnam.



# THE FUTURE OF ALTERNATIVES TO PLASTIC BAGS IN CAMBODIA

The use of plastic bags in Cambodia is deep rooted and increasing with each passing day. Other developed countries in the region are testament to how the plastic problem can go out of control if not countered now, when there is still hope for change.

Countering the use of plastic bags will require a consolidated effort across disciplines. While good policy and its enforcement will go a long way in controlling the issue, increased awareness of the ill effects of plastic amongst citizens will be a crucial success factor for any change. Enhanced waste management infrastructure will also soon be a non negotiable as Cambodia's economic boom continues.

Success or failure of our task will depend on building the right ecosystem that can support the desired change. A system which needs to be uniquely Cambodian first and work's for it's people.

**JULY 2015 © FONDAZIONE ACRA**

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